

# REPRESENTATIONS OF THE CITY IN VIDEO GAMES

A Thesis  
Presented to  
The Academic Faculty

By

Bobby Schweizer

In Partial Fulfillment  
Of the Requirements for the Degree  
Masters of Science in Digital Media  
School of Literature, Communication, and Culture

Georgia Institute of Technology

May, 2009

# REPRESENTATIONS OF THE CITY IN VIDEO GAMES

Approved by:

Dr. Celia Pearce, Advisor

School of Literature, Communication, and  
Culture

*Georgia Institute of Technology*

Dr. Michael Nitsche

School of Literature, Communication,  
and Culture

*Georgia Institute of Technology*

Dr. Kenneth Knoespel

School of Literature, Communication, and  
Culture

*Georgia Institute of Technology*

Dr. Ellen Yi-Luen Do

College of Architecture & College of  
Computing

*Georgia Institute of Technology*

Date Approved: March 31, 2009

## Acknowledgements

This work would not have been possible without the support of many individuals: My advisor Celia Pearce, who provided invaluable feedback and guidance; my committee members for their insights and ideas; my classmates for the many discussions that influenced my writing; and to Megan, whose love and encouragement are my strongest pillars of support.

## Table of Contents

<b>Acknowledgements</b> .....	<b>iii</b>
<b>List of Figures</b> .....	<b>vi</b>
<b>Summary</b> .....	<b>vii</b>
<b>Chapter 1: Introduction</b> .....	<b>1</b>
<b>Chapter 2: Review of the Literature</b> .....	<b>3</b>
Producing Space .....	5
Imaging/Understanding Space.....	7
The Elements of City Space .....	10
Moving Through Space .....	15
Narrative Environments.....	19
<b>Chapter 3: City Space in Film Noir</b> .....	<b>23</b>
<b>Chapter 4: Methodology and Framework</b> .....	<b>26</b>
<b>Chapter 5: Overview of the Games</b> .....	<b>31</b>
PRIMARY GAMES .....	31
Grand Theft Auto IV .....	31
The Darkness .....	36
Ultimate Spider-Man .....	39
SECONDARY GAMES .....	41
Tony Hawk's Underground .....	41
Max Payne .....	42
True Crime: New York City.....	44
Spider-Man 2 .....	45
Deus Ex .....	47
<b>Chapter 5: Themes</b> .....	<b>49</b>
TEACHING SPACE AND PLACE .....	49
Tutorials.....	49
Depictions Versus Experiences of Place .....	51
MAPS.....	53
Pause-Menu Map.....	53
Radar Map .....	57
MOVING THROUGH SPACE.....	60
Travel Options and Spatial Design.....	61
Dispatch Missions .....	67
Mission Structure Revealing New Spaces.....	68

THE NARRATIVE ENVIRONMENT .....	72
Public and Private.....	72
Metaphorical Architecture.....	76
Recurring Locations .....	78
<b>Chapter 6: Conclusions.....</b>	<b>89</b>
Successful Techniques .....	89
Other Cities.....	90
Additional Areas of Inquiry .....	91
Extensions and Applications .....	92
<b>Bibliography .....</b>	<b>95</b>

## List of Figures

Figure 1 A torrent of images in the city, <i>Grand Theft Auto IV</i> .....	8
Figure 2 A clear edge between playable spaces, <i>Ultimate Spider-Man</i> .....	10
Figure 3 Hove Beach, the earliest area of the game, <i>Grand Theft Auto IV</i> .....	12
Figure 4 Elements moving quickly past the eye, <i>Spider-Man 2</i> .....	15
Figure 5 Labyrinth level design, <i>Max Payne</i> .....	18
Figure 6 The motorist player, <i>True Crime: New York City</i> .....	19
Figure 7 A strongly characterized apartment, <i>The Darkness</i> .....	20
Figure 8 A view of Algonquin, <i>Grand Theft Auto IV</i> .....	32
Figure 9 Pedestrian neighborhoods, <i>The Darkness</i> .....	37
Figure 10 The subway, <i>The Darkness</i> .....	37
Figure 11 Comic book style, <i>Ultimate Spider-Man</i> .....	39
Figure 12 Skating the streets of Manhattan, <i>Tony Hawk's Underground</i> .....	41
Figure 13 A dingy hotel, <i>Max Payne</i> .....	43
Figure 14 Detailed buildings, <i>Spider-Man 2</i> .....	46
Figure 15 Headless Statue of Liberty, <i>Deus Ex</i> .....	47
Figure 16 Race sequence, <i>Ultimate Spider-Man</i> .....	51
Figure 17 Pause Map, <i>True Crime: New York City</i> .....	54
Figure 18 Radar Map, <i>Ultimate Spider-Man</i> .....	59
Figure 19 A corridor environment, <i>Max Payne</i> .....	61
Figure 20 Approach options, <i>Deus Ex</i> .....	66
Figure 21 Skateboarding environment, <i>Tony Hawk's Underground</i> .....	74
Figure 22 Metaphorical architecture, <i>Grand Theft Auto IV</i> .....	78
Figure 23 Burning safehouse, <i>Grand Theft Auto IV</i> .....	79
Figure 24 Intimate apartment, <i>The Darkness</i> .....	82

## Summary

In 1960, urban studies author Kevin Lynch recognized that “moving elements in a city, and in particular the people and their activities, are as important as the stationary physical parts.” Three-dimensional video game cities are neither static environments nor stationary views; rather, they are experienced through movement, action, and play. Our experiences of new places are not developed at a glance. Instead, they are cultivated through use over time. This research strives to characterize the means by which video game players experience and understand the space of the game city during the course of play.

This work utilizes games that take place in constructed versions of New York City as a case study. By focusing on the ways players navigate spaces, we can understand how they construct spatial awareness and how this space is transformed into a meaningful place of play. In order to come to this understanding, this study asks a series of questions: How are these spaces arranged? How does the player move through the space and how does the game teach spatial navigation? What actions are performed in the space and how is gameplay adapted for the city? How does the creation of narrative environments contribute to a player’s identification with the space? These questions are examined within a framework of urban, cultural, and game studies. I examine techniques that are employed by video game city designers to help players navigate space and make it meaningful. Additionally, this research poses areas for future expansion and experimentation with game cities.

## Chapter 1: Introduction

Writing in 1960, urban studies author Kevin Lynch recognized that, “moving elements in a city, and in particular the people and their activities, are as important as the stationary physical parts” (Lynch 1960, 2). It is with this observation that I started my research on the spaces of video game cities. Three-dimensional game cities are not static environments nor stationary views. They are experienced through movement, action, and play. It is through this that the "operational spaces of games encourage players to engage them, find their own identity in relation to them, develop of a history with them, customize them" (Nitsche 2008, 195). Our experience of new places is not developed at a glance, but rather through durations of time in the space (Pearce, Interactive 1997, 27). This research strives to characterize the means by which video game players experience the space of the game city so that it may become a meaningful place of play.

The influential work of Yi-Fu Tuan in his book *Space and Place* (1977) grants us understanding of what is meant by these titular concepts. Space is understood as the three dimensional structure of the world which contains objects and general actions, while place is space transformed by shared and negotiated cultural understandings and specific action (Tuan 2001, 6). Space is the plane of existence, place is the plane of experience. Spaces are open to possibilities of action and interpretation, while place is the result of this understanding. The space of a video game is the arrangement of polygons and surfaces in which the player moves about and engages with through an input device. “Place must be engaged to come to life, but how do we make it meaningful or compelling to engage with this place?” (Nitsche 2008, 191) The place of a video game is the meaning made by the experience of space through action and the design of a meaningful



environment which compliments that action (Pearce, STP 2007). As a framework for the research, there are two conceptual triads to keep in mind when thinking about space and place. The first, posed by Henri Lefebvre, is the triad of understanding space: representations of space (understanding of the dynamics of objects in the physical and non-physical realms), spatial practice (that which we put in the physical world and interact with), and representational space (the experience and understanding of physical space) (Lefebvre 1992, 38). This triad highlights the creation of the space by game designers, the use of the space by players, and the space's ability to project its use back onto the player. The second, suggested by Kevin Lynch in *The Image of the City*, is a spatial triad related to the question of imaging the city: identity (distinction from other things), structure (spatial or pattern relationships), and meaning (practical or emotional) (Lynch 1960, 8). This triad explains how game players grow to understand the space of the game, learn to navigate it, and transform it into something compelling.

This work utilizes games that take place in constructed versions of New York City as a case study. Three-dimensional video game spaces are experienced through movement and action. By focusing on the ways players navigate space, we can understand how they construct spatial awareness and how this space is transformed into a meaningful place of play in games. In order to come to this understanding, we need to ask a series of questions: How are these spaces arranged? How does the player move through the space and how does the game teach them spatial navigation? How is gameplay being adapted for the space and what does the player do in the space? And, lastly, how do the creation of narrative environments contribute to identification with the space that turns it into place?

## Chapter 2: Review of the Literature

My exploration of the topic of representations of cities in video games is viewed through an inter-disciplinary lens that combines cultural studies, urban studies, architecture, and game studies. Researching these fields has produced a variety of theories that can be connected and scaffolded to produce a framework of understanding that negotiates the similarities and differences between our experience of the city in the physical world and how we understand it in the medium of the game.

Henri Lefebvre's influential text, *The Production of Space* (1974), outlines space as socially and historically produced: it is created both through cultural influences exerted upon it and by its use being reflected back at its producers. While often cited for its insights, Lefebvre's work has been criticized for its impractical operational application (Miles, Hall and Borden 2004, 257). Cities, as they stand on the Earth are so complex that this kind of criticism is understandable. However, in conducting my research, I have found Lefebvre's observations are particularly applicable at the scale of the game. Cities in video games are designed from the ground-up, translated into code, and experienced by the player. Unless a game includes the tools to physically alter the landscape of the city, single-player game space remains relatively static.

It is here we have a relatively closed system that follows Lefebvre's triad of understanding space: representations of space, spatial practice, and representational space (Lefebvre 1992, 38). *Representations of space* refer to the manner by which social and cultural understandings of space guide the conception and function of that space (Lefebvre 1992, 38). It is the logical perception of the relationships between objects

(physical and non-physical), and is the method by which social and cultural context is brought to physicality. In terms of the video game, this is the realm in which the designers express how the space of their game should function and how they expect that space to be used. It is formalized through the creation of code that manifests their rule systems, procedures, and world models. *Spatial practice* is that which we put in the world (Lefebvre 1992, 38). It is our rooms, our buildings, and our cities. It also encompasses the actions we take in these spaces. How we live in the world we've produced and how our world, in turn, shapes the way we produce it. This is the part of the video game that we see. It is the design of the level and the environment, the shape of the city, the gameplay that guides our interaction with the system, and the obstacles and goals the world presents to us. Lastly, *representational space* is the experience of space. It is qualitative, fluid, dynamic, symbolic, and is culturally and individually situated in ideology and knowledge (Lefebvre 1992, 42). As video game players, it is the point of the triad in which we experience the game, participate in the world as actors, and create meaning.

This research has a heavier focus on spatial practice and representational space because these are more player-centric. It is important to press-upon Lefebvre's note that these three concepts do not exist on a continuum, or even a triangle with one concept at each corner. Instead they are constantly influencing and being influenced by each other (Lefebvre 1992, 4). The same is true for games and this research. I have attempted to address the interrelationship of the triad by developing experiences of space through their use. Divisions made in my sections are for purpose of clarity or convenience, but the cities in these games do not exist without people interacting with them—whether that be

through play, through discussion of the game with other players, or through memories of experiences and places.

While Lefebvre framed my starting point, he alone cannot explain the experience of the city in the video game. The spatial triad is explained in Lefebvre's chapter "The Plan of the Present Work," and in the same way I have used it to plan my work. This research has been shaped by the observations, insights, and research of many others. I have arranged my survey of related literature with the spatial triad in mind.

## Producing Space

Kevin Lynch approached the difficulties in studying the production of city space, noting, "giving visual form to the city is a special kind of design problem, and a rather new one at that" (Lynch 1960, v.). Building a city is by no means a simple task—there are multitudes of factors to take into consideration. Designers cannot merely code a landscape with signs and expect meaning to emerge (Lefebvre 1992, 144). It has been criticized that game designers begin with relatively blank canvases to produce their city, constructing the look of a space that's realistic without concerning themselves with what it means to build within the constraints of physical materials (Gotz 2007, 136). Michael Nitsche also addresses this problem in terms of game design, writing that "thanks to the freedom of the mathematical models, the resulting can be anything anywhere, which makes them [spaces] remarkably indifferent and somewhat meaningless to start with" (Nitsche 2008, 8). How do we make this task more meaningful? Numerous thinkers have indicated the individual's participation in the space produces meaning.

Though we often attribute game worlds to designers, the production of space is very much the role of the player. Lefebvre wrote that reading space was the last step in the production of space (Lefebvre 1992, 144). It is through the individual that problem of knowledge is addressed: how are translations made from mathematical space to nature, practice, and the theory of social life? (Lefebvre 1992, 3). If space is a mental construction that connotes logical coherence, practical consistency, self-regulation, and relation of parts to a whole, then it is the role of the individual to make sense of the system (Lefebvre 1992, 3).

Michel de Certeau addresses another method of producing space in his chapter on "Walking in the City," which chronicles the experience of constructing place and space from the pedestrian viewpoint. To de Certeau, the act of walking is dynamic and political, which is made possible because the city is operational (de Certeau 1988, 94). This operational city is able to produce its own space, has a history is made by its people, and is used as an object that triggers its own construction through its citizens (de Certeau 1988, 94). This provides an interesting challenge to the study of game spaces, which are—in the case of single player games—constructed during play through only a single individual's perspective.

Perspective is produced through use. "Like a piece of architecture, the city is a construction in space, but one of vast scale, a thing perceived only in the course of long spans of time" (Lynch 1960, 1). Iain Borden, in his book *Skateboarding, Space, and the City*, wrote about the position of the marginalized skateboarder in constructing their interaction space. Borden uses skateboarding to illustrate Adrian Forty's observation that "architecture, like all other cultural objects, is not made just once, but is made and

remade over and over again each time it is represented through another medium..." (Borden, *Skateboarding* 2006, 38). Celia Pearce also wrote about this factor, citing the fourth dimension, time, as perhaps the most important in three-dimensional architecture and virtual reality (Pearce, *Interactive* 1997, 27). If space is produced by the experience of a player over time, what methods does the player use to make sense of this space?

### **Imaging/Understanding Space**

Kevin Lynch wrote, "the observer himself should play an active role in perceiving the world and have a creative part in developing his image," so that places become meaningful (Lynch 1960, 6). Lynch begins with some of the challenges we must take into account to "read" or "image" the city. The city is viewed through the unsustained perception of moving elements that have inconsistently fine quality (Lynch 1960, 2). In his 1903 essay "Metropolis and Mental Life," Georg Simmel wrote of the torrent of images in the city that lead to an intensification of constant nervous simulation (Simmel 2004) [Figure 1]. Because the environment is highly active, we do not experience the entirety of the city at once—parts are recognized and organized and the legibility of these parts is crucial for way-finding (Lynch 1960, 2). Heidegger posed place must facilitate orientation and contain objects of identification (Nitsche 2008, 192). Recognizing that nothing is experienced by itself, Lynch suggests his own spatial triad related to this question: imaging the city can be divided into the three concepts of identity (distinction from other things), structure (spatial or pattern relationships), and meaning (practical or emotional) (Lynch 1960, 8).



**Figure 1**

This triad functions because building the image of the city is a two-way process: the environment suggests and the observer selects and organizes (Lynch 1960, 6). It is crucial to recognize that this image varies between observers. Lynch suggests that imagability is based on a "quality of a physical object which gives it a high probability of evoking a strong image in any given observer" (Lynch 1960, 9). But despite the techniques the city may use to orient its citizens, Denis Cosgrove observes, "on the ground cities are among the least legible places on Earth" (Cosgrove 2006, 149). This leads us to ask what other techniques are used to image the city?

Individuals employ sense-making devices to achieve coherence between self and space. One of the most basic technologies for understanding space is the map. Denis Cosgrove wrote that "practically, the confrontation with an unfamiliar city is typically mediated by the map: of transit routes, of streets, of tourist destinations. Urban experience in a new city is often a process of negotiating the divergence between cartographic and material space" (Cosgrove 2006, 148). Through its use, the map both creates and records the city. Maps are not merely passive artifacts, though, because they are rhetorical devices that attempt to reinforce a city's legibility (Cosgrove 2006, 152). However, as Michel de Certeau observed about his experiences viewing Manhattan from atop the World Trade Center, the bird's eye view of the city removes the viewer from the

experience of being a part of the city, giving them only a spectator or voyeur's insight into what makes space (de Certeau 1988, 92).

It is also relevant to speak on some theories of understanding game spaces. Author Mark JP Wolf, in an early article on game spaces written for *Film Quarterly*, noted that while some film spaces, broken up by camera angles and editing, function adequately enough in terms of the narrative, they may not necessarily provide enough information to be fully reconstructed by the viewer (Wolf 2001, 67). Three-dimensional video game spaces, however, require the player to construct coherent images of the space through repeated use (Wolf 2001, 67). These levels are not merely a sequence of scenes, but rather a connected series of physical architectures. Players also map spaces both geographically and in terms of activity flow (the juxtaposition of accessible areas and pursuit of game goals) (Jakobsson 2007, 167). Mikael Jakobsson observed that designers have to deal with ways to limit the freedom of player movement in these open environments. One common method is through the use of islands, whether physical or activity-based. For example, *Everquest* (PC 1999) uses monsters as barriers—you need to be a certain level to survive new areas populated by stronger monsters (Jakobsson 2007, 166). This can be contrasted with a game like *Suikoden* (PlayStation 1995) where parts of the world are blocked off by border guard characters who will not let you through until it is appropriate in the narrative progression of the game. These techniques are used to unlock new areas in Nitsche's concept of logical mazes, and a well-designed game successfully establishes the player's understanding of how these mechanisms work.



## The Elements of City Space

The elements of space refer to the framework provided by Kevin Lynch for imaging the environment by dividing its contents into five classifications: paths, edges, districts, nodes, and landmarks (Lynch 1960, 46). Paths are channels of movement, edges are linear elements that are not paths but rather boundaries, districts are medium to large sections, nodes are strategic spots which can be entered, and landmarks are visually distinct reference points often used for navigation and wayfinding [Figure 2]. "The world may be organized around a set of focal points, or be broken into named regions, or be linked by remembered routes" (Lynch 1960, 7). Borden recommends boundaries should be fluid and that the individual in space is responsible for negotiating boundaries thick and thin (Borden, STP 2007, 333).

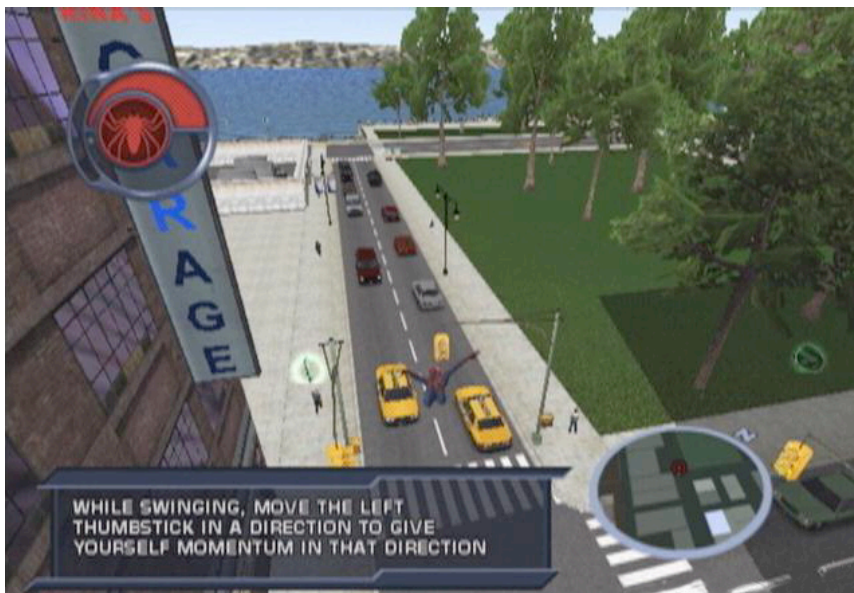


Figure 2

The player engaged in movement and action affects the experiences of the elements of space. In the 1950s, Situationists like Guy Debord began applying works like Lefebvre's early book *Critique of Everyday Life* and Paul-Henri Chombart de Lauwe's

*Paris and the Parisian Agglomeration* to the concepts of social structuring of the city (Sadler 1998). Guy Debord's illustration of *The Naked City*, which depicts a map of Paris cut up and distributed based on use rather than physical layout, illustrated this experience of psychogeography (Cosgrove 2006, 156). These thinkers sought to highlight the changing topology of space at the pedestrian level.

Michel de Certeau, writing about the experience of space, describes fundamental stylistic figures of spatial collapse in the urban environment. The first term, "synecdoche," means using a word in which a part stands in for a whole (de Certeau 1988, 101). The second, "asyndeton," refers to conjunctions deliberately left out of a sentence or phrase. De Certeau uses this to explain the phenomenon of ignoring the travel that connects places, mentally mapping, for example, Baltimore and Philadelphia as next to each other on Interstate 95 while ignoring all the places in between. These concepts become especially important for mission-based games in which the player must travel between nodes to trigger events. The space traversed is often ignored; the destination is often represented by a single symbolic piece. High speed means of movement (like the automobile and public transportation) reduces the visibility of the architecture being passed, while teleportation skips it completely (Jakobsson 2007, 164).

The final concept in "Walking in the City" relates to the functions of naming in place-making. De Certeau identifies naming as making place believable, memorable, and primitive (de Certeau 1988, 105). The believable place, identifiable by a name, is a habitable place. The memories of a place help construct its evolving identity by patterning the use of the space—that which is no longer continues to act in the present. The primitive quality of naming is related to that which is whole or quantifiable. A place

with a name is a basic unit of understanding; unnamed places are constantly seeking the stability of nominative forces.

In video games, the naming of a space may not refer to an official title but rather an ascribed mental model that symbolizes the use of the place. Lefebvre refers to Nietzsche's categorization of metaphor and metonymy not as parts of speech, but rather as acts that decode the world and erect mental and social architecture (Lefebvre 1992, 140). These processes often work subconsciously as the player makes sense of the world. In *Grand Theft Auto IV*, rather than refer to it by its proper name of Hove Beach, the player might refer to the southern part of Broker in Liberty City as "the beginning area of the game" [Figure 3].



**Figure 3**

Levels may also be referred to by their defining characteristics: the hotel level, the part at the docks, the snowy stage. In order for these spaces to be remembered, they need legible presentation and meaningful functionality (Nitsche 2008, 8). Writing in 1937, Lewis Mumford observed that the city is a "special framework directed toward the

creation of differentiated opportunities," which creates drama and obstacles (Mumford, CCR 2004). We can view these differentiated opportunities as those elements which comprise games: A goal (and subgoals), obstacles designed to prevent you from reaching the goal, resources to assist you in reaching your goal, rewards for progression, penalties for failure, and information (Pearce, Game On 2002).

Another way to think of city spaces are as playgrounds. Iain Borden writes that the city should incorporate spaces in which people can move their body in playful ways (Borden, STP 2007, 332). Alberto Iacovoni, referring to the transformation of space into play place, wrote, "there is a part of the rules of every game that needs room, that becomes a playground, architecture whose limits represent prohibitions and opportunities for the player, who is thus transformed into an inhabitant" (Iacovoni 2004, 15). Merely walking around a playground, or a video game space, is not enough to understand it. These spaces must be engaged with in order for them to come to life and for us to understand how they function. Iacovoni writes that playgrounds, physical and virtual, are the visible form of a system of rules (Iacovoni 2004, 15). Because playgrounds are made through the eye and body's relationship to space, we cannot ignore the importance of the participant's movement in conjunction with their interaction with objects in the space.

It is important to note that this space need not be constructed purely from scratch. Creating playgrounds is merely a matter of changing the way we perceive of the space while constructing rules applicable to the space (Iacovoni 2004, 21). One way to do this, as notably done by the Dadaists and Situationists, is to take a known space and invert it, like children do when they play "don't touch the hot lava," in which they are not allowed to step on the ground (Iacovoni 2004, 23). By constructing temporary spaces of play,

games challenge players both with new levels and through the transformation of familiar places (Iacovoni 2004, 38-42).

Skateboarding's transformation of city space into temporary playgrounds is a grounded example of Iacovoni's observations at work. The evolution of skateboarding was in large part affected by cultural and architectural forces. While the earliest skateboarders merely moved across flat terrain, skateboarding's growing popularity among surfers in the 1960s and 1970s meant its nascent practitioners looked for man-made landscapes that mirrored the contours of the ocean (Borden, *Skateboarding* 2006, 29).

After carving the rolling streets, skateboarders found the many empty pools of California homes to be a close match to the curl of a wave. As more skateboarders spent time in concrete pools, the shape of the architecture changed the way they rode the pool—developing new tricks and discovering methods of perpetual motion (Borden, *Skateboarding* 2006, 37). Not only was a pool about carving the sides, it became about the space of the lip and the vertical space above the pool, the surrounding terrain, and the space produced from within the body (Borden, *Skateboarding* 2006, 108). As pools gave rise to man-made skateparks, and skateparks gave rise to new ways of skating that required new architecture, the shape of the space took meaning. Kuttler writes about the changing use of architecture over time in *Tony Hawk's American Wasteland*. As new tricks and skills are learned the city opens up and the player must explore the city to find places to execute certain tricks (Kuttler 2007).

## Moving Through Space

Games are not experienced from a still vantage point, nor does the player watch while some force guides their eye. In order for a game to be experienced, the player must engage the system and perform actions. In the case of the games from this research, all of which feature the player embodied as a human character, the world is experienced through movement. Video games offer an experience of pedestrian movement in a three-dimensional urban environment that many of us do not normally experience on a regular basis (Pearce, STP 2007, 201). Through walking, running, web-swinging, or driving, the world passes by the player [Figure 4]. The imaging of space is a dynamic activity in games, so it is important to look at scholars' theories on movement.



**Figure 4**

Michel de Certeau's chapter on "Walking in the City" from *The Practice of Everyday Life* provides a starting point. According to de Certeau, "to walk" implies lacking place, a record of this movement only indicates that which is no longer, and movement can be understood as a system. This system, in part, consists of "modalities of pedestrian enunciation," which reveal the relationship between movement and what that

movement means (de Certeau 1988, 99). First, the "alethic" modality relate to the mood and intent of the movement (de Certeau 1988, 99). Is the pedestrian taking the most direct route from one place to the next? Does their choice of route represent the multitude of possibility spaces? How are they negotiating that movement which is impossible or forced upon them? Secondly, "epistemic" modalities are concerned with understanding the space and these aforementioned possibilities. Lastly, "deonic" modalities refer to the obligations of space, what they permit and forbid, and what they offer optionally. Because these modalities deal with rules and choices, they map well to the medium of the game.

When we apply these observations on walking to video games, the underlying mechanics of space are revealed. Because all of the games in this study are centered on a single protagonist avatar, the gameplay is body-centered. Iain Borden observed, "these are also bodies which actively do something, which have dynamic operation in the city... Actions are important not for their production of things, but for their production of meanings, subjects, relations, uses, and desire" (Borden, Skateboarding 2006, 12). While de Certeau focuses on the act of walking, for the purposes of this study I have extended the term to any kind of player-initiated movement that involves guiding the avatar through space.

Just as the architecture and arrangement of the space around us in the physical world influences movement, so too does guiding hand of the game designer. The games I looked at are not merely virtual worlds, but games with goals and direction that influence the player's movement. Michael Nitsche observes that unlimited freedom of movement is not necessarily desirable. Nitsche cites Gaylean, who described tracks in game design as

guided flow—a river that carries you in one direction downstream while providing freedom of lateral movement. If you provide some freedom of choice while giving trajectory, restriction can be a meaningful part of the experience (Nitsche 2008, 176). Georges Bataille too writes that space in games exists as trajectory (Iacovoni 2004, 27).

One area of guided movement referenced by many of the sources was the labyrinth or maze. Often conflated, a functional distinction can be made between the two. The labyrinth can be seen as a winding path which delays travel to a geographically near location, while the maze is a challenge of spatial navigation (Fernandez-Vara 2007, 76). In the two-dimensional screen of cinema, the labyrinth is turned into the locations of action like car chases, shootouts, and the linear arrangement of obstacles (Klien 2004, 107). They are spaces with a single exit and single resolution. While some games follow this path, others have chosen a different arrangement. Michael Nitsche lists Umberto Eco's three labyrinth types—linear (unicursal), branching (multicursal), and rhizomatic—while introducing a new type unique to video games: the logical maze of changing access in which following procedures opens up new paths (Nitsche 2008, 177). Players also map spaces both geographically and in terms of activity flow (the juxtaposition of accessible areas and pursuit of game goals (Jakobsson 2007, 167).

There are two views on the effect of the labyrinth. One, identified by Baudelaire and Barthes, is the nightmare of the solitary maze from which we desperately seek escape (Klien 2004, 110) [Figure 5]. But on the other hand, Kevin Lynch believed we find value in the mystery, labyrinth, and surprise of the city (Lynch 1960, 5). In his study of play spaces (physical and virtual) Iacovoni declared that we purposefully allow ourselves to get lost as a means of mental disorientation, making a game out of reorienting



(Iacovoni 2004, 27). Navigating the maze familiarizes us with our surroundings as we learn to interpret the scene (Lynch 1960, 11).



**Figure 5**

Method of movement has a strong influence on our imaging of space. Sheller and Urry reinforce a criticism made against de Certeau: that cities, especially American cities, remain rooted in automobile transportation and too often sociologists ignore the car in favor of walking. They use the term "automobility" to describe the culture and practice of driving, and the resulting way of structuring space (Sheller and Urry 2004). Because cars demand a lot of space, the landscape is dedicated to them [Figure 6]. Sheller and Urry also write about the car's privatization of space and isolation of sensory experiences—when driving with the windows up you are not sensing the sounds, smells, temperature, and detail of the city. It produces a landscape not of buildings but of transit ways, therefore urban architecture is a function of vehicular movement (Sheller and Urry 2004). These examples highlight the way transportation modes affect the experience of space and that non-pedestrian modes need to be considered individually.



Figure 6

## Narrative Environments

When thinking about narrative, we most often assume it takes the form of verbal or written storytelling, or, if it is visual, we imagine it being presented to us directly. These, of course, are just a few techniques among a wide variety of narrative models. Another technique we often forget about has been in existence since the dawn of storytelling. Narrative environments are physical or virtual spaces used to tell or experience stories (Pearce, *Interactive* 1997, 329). These spaces have ranged from the painted caves at Lascaux and the medieval Catholic Church, to the World's Fair and Disneyland. In designing narrative environments, we begin not with a floorplan but a script (Pearce, *Interactive* 1997, 26). We use architecture to invent stories when they need to be fabricated (Pearce, *STP* 2007, 200). Pearce poses that "the extent to which a building is successful might ultimately be more a factor of the narrative content of the building than its actual architecture" (Pearce, *Interactive* 1997, 26). Pearce also uses the phrase evocative narrative environments to specifically describe those places which are supposed to incite the player's engagement—it is not merely about creating a place with a

story but creating a compelling space whose story demands unfolding (Pearce, STP 2007, 322) [Figure 7]. Related to this, Jenkins adds that in designing game space, the creator cannot dictate our experience, but does have the power to shape it (Jenkins, Narrative Spaces 2007, 57).



**Figure 7**

The narrative design of the urban environment is a critical task because it is another means of making a place compelling. Lynch, writing of physical places, said we design the city for audiences (Lynch 1960, 7), and the video game city is a very special audience. While designers of narrative environments strive for the "illusion of authenticity" (Pearce, STP 2007, 201), using realistic game spaces for experiencing that which in real life is impossible is often to the detriment of what makes a game unique (Gotz 2007, 136). In addition, cities have emergent/mosaic histories, which can be contrasted with highly controlled narrative schema (Pearce, STP 2007, 200). Lefebvre wrote that space acquires symbolic value and affective attachment, but in our usual experience this is developed over the course of time (Lefebvre 1992, 139). Michael Nitsche introduced "evocative narrative elements," which are objects or events that do not

contain story but assist in comprehension, triggering important parts of the player's narrative process (Nitsche 2008, 37). We can couple Pearce's *evocative narrative environments* with Nitsche's *evocative narrative elements*, in which the patterning of space arranges the elements and the player's experience of them (Nitsche 2008, 187).

Many authors have written about the psychological effect places have at personal level. These strong narrative environments resonate with people's imaginations because of either their familiarity or the imaginative capital contained (Oldenburg 1999) in the visual grammar of iconographic places. One such example comes from Ray Oldenburg's book *The Great Good Place*, in which he describes the value of the "third place" where people invest their time—a place that's neither home, nor work (Oldenburg 1999). Perhaps the most common third place in the United States is the tavern or bar (Oldenburg 1999, 166). The bar is not just a place of leisure activity, but also a place for socialization and connecting to one's neighbors. But despite this potential, Oldenburg finds the modern bar problematic—most bars facilitate isolated groups of people to meet without cross-community interaction. It is possible to apply the concept of the third place in two ways. One is third places within games—places of leisure that the player as a character visit on a regular basis. The other is the game itself as a third place for players. Nicholas Ducheneaut, R.J. Moore, and Eric Nickell, in their study of massively multiplayer online game *Star Wars Galaxies*, characterized this in reference to virtual worlds and multiplayer online games, but it can also be applied to single-player experiences in which the player is building a fictional community (Ducheneaut, Moore and Nickell 2004).

Genre, as a video game term, can imply two meanings. The first, related to format, is the commonly used classification of a game based on gameplay mechanics:

first-person shooter, third-person action adventure, sports, racing, role-playing, etc. (Bjork and Holopainen 2006, 412) Clearly these distinctions are becoming more difficult to make as games become more complex, but classification influences expectations. The second sense of genre relates to choices made about the context of the game: gangster, sci-fi action, historical strategy, comic book, etc. These choices affect the aesthetic of the game and are one of the primary elements that the environment is built upon.

What considerations need to be made with this experience in mind? Iacovoni recommends that we need to design our physical cities with the playground in mind—an area open to opportunity and reappropriation (Iacovoni 2004, 44). The physically modifiable (modular) city is also open to play (Iacovoni 2004, 47). Cities that we don't know have the power to surprise us with what's around the next corner (Borden, STP 2007, 333). We can specifically design these experiences in game cities because we have the ability to imagine new spaces (representative or fantastic) that we can't build in the physical world (Borden, Skateboarding 2006, 54). The "highly dramatized environment" introduces new variables into the game and is shaped through use (Nitsche 2008, 175). In addition, in 3D environments, whether everyday spaces, theme parks, or video games, being surrounded by things to engage with makes the experience repeatable (Pearce, Interactive 1997, 330). Three-dimensional spaces that do not take advantage of this property fail to live up to their experiential potential.

## Chapter 3: City Space in Film Noir

The city and urban space is a common topic for the products of human imagination. Countless stories have been told, books have been written, paintings imagined, photographs taken, films directed, songs sung, and other works conceived to express that which makes the city compelling. So what makes these stories so interesting? What is it about the city that allows it to be transferred into so many different forms? The reasons are perhaps innumerable. What is important to note is how a medium is used to tell these stories: its foci, influences, and defining characteristics. As a bit of brief research to help color my understanding of representations of the space in media, I have examined film and cultural studies works on the depiction of the city in film noir. The purpose of this scholarship is not to draw analogues between film and video games, nor to suggest that the games used in this research are noir, but rather to examine a specific moment in which the city was the subject of a medium's imagination.

The genre of film noir, perhaps more than any other, established a grammar of city space in the cinema. Many film historians consider the city as a primary character in the film noir genre. Early noir was often born out of crime-fiction and the detective novel, in which authors like Raymond Chandler and Dashiell Hammett set their characters among the midst of urban unrest. Not only do urban settings prompt tales of crime, corruption, violence, and unrestrained desire (Telotte 1989, 2), they are at the same time externalizations of the anxiety associated with these conflicts (Dimendberg 2004, 14). Even when noir moved out of the city, opening itself to new locations, the characteristics of the urban remained prevalent in both the protagonists and the setting.

Countless commentators have illustrated the visual motifs the city in film noir—the sidewalks and streets, urban diners and swanky nightclubs, the offices of both law enforcement and private detectives that overlook the streets, the apartment isolated amongst a sea of others, and the innumerable hiding places the close-quartered city has to offer (Naremore 1998, 1). "The repetition of standard views propose them as a kind of photodocumentary cliché, an image of the city recognizable by everyone," and this grammar of visual symbols permeates all forms of media (Dimendberg 2004, 46).

The two most common settings in noir were Los Angeles and New York. Norman Klien provides a useful history of New York City in film, identifiable through a collected imaginary. Fritz Lang, visiting Manhattan in 1924, declared that it was "a beacon of beauty strong enough to be the centerpiece of a film" (Klien 2004, 290). Early Hollywood studio films built New York City like streets in LA consisting of a twenty or so facades, while those of the 1930s and later, built on sound stages, relied more heavily on miniatures and mattes to establish depth of space (Klien 2004, 291). Rarely were films shot on location in New York City—notable examples like *The Naked City* (1948) and *Kiss of Death* (1948) announced "on location" in the opening credits. More commonly, establishing shots of New York City's skyline were used to introduce the space.

Film noir used "pervasive cinematic and spatial figures such as aerial or long-shot sky-line views of the metropolis, crowd sequences filmed from ground level, postwar homecomings to the city, and escape from the urban center underscore the ideological significance of spatiality in the film noir cycle" (Dimendberg 2004, 7). "The film noir cycle also explores an urban "body" that emerges as the product of intersecting cultural, cinematic, and technological discourses" (Dimendberg 2004, 22). Film noir critiqued the

processes of modernism's rationalization of systems in the way "dehumanizing laws apply to the urban environment" (Munby 1999, 135). The many tight spaces of Alfred Hitchcock's *The Wrong Man* (1956) echo the claustrophobia felt by Manny Balestrero as he is forced through the mechanisms of a highly procedural law enforcement system. The city takes on the titular name of *The Asphalt Jungle* (1950), which opens with Dix Handley evading the police by ducking through the forest-like pillars, illustrating the obstacles the police must negotiate to maintain order in the city. The corner grocery store in *Double Indemnity* (1944) is laid out like a miniature city, unlabeled cans and boxes stacked are stacked like buildings and skyscrapers. *Touch of Evil* (1958) is set in a border town between Mexico and the United States that take on binary characteristics constantly being permeated. The directors of these films used cultural concepts in framing their narrative, while constructing telling visuals through the architectural composition. These films have also helped to construct a vast amount of cultural capital about New York and the city as a setting that offers a range of possibilities but carries with it a set of expectations.



## Chapter 4: Methodology and Framework

In order to perform this textual analysis, I began my research with what Stuart Hall terms a “long preliminary soak,” immersing myself in the games I had chosen to gain an understanding of the big picture (Hall 1975). Rather than playing and finishing one game before moving onto the next, I mixed my play sessions to help with my comparisons between games. This method was highly beneficial, as each game provided a lens that illuminated my understanding of the other games. It also ensured that I experienced the spaces over duration of time, one of the fundamental factors of understanding.

I played the games with differing degrees of depth. I spent the most time with *Grand Theft Auto IV*, *The Darkness*, *Ultimate Spider-Man*, and *Tony Hawk's Underground*, completing all four. I also spent a significant amount of time playing *Max Payne* and *Spider-Man* while my examinations of *Deus Ex* and *True Crime: New York City* were only as in depth as I felt necessary to draw observations. While playing I kept a notebook to document my experiences, impressions, and detail information from the game.

I also employed additional resources to aid in my examination of games. I used extra-textual information such as the instruction manuals provided with the game, websites that featured maps, walkthrough information, and screenshots. In addition, I found videos on YouTube were helpful for rewatching scenes or missions I had played or had missed because they were later in some of the games. Unlike literature, film, television, or music (which I had previous experience analyzing), events in games, once

passed, cannot be reviewed. While it is possible to reload a save-point, there is no simple rewind or pause button in games to aid in textual analysis. Though the videos I watched lack the experience of actually playing—controlling the action is integral to what makes a game unique—they were useful for recalling precise details.

Exploring the questions of this project required an interdisciplinary approach. As detailed in my literature review, I have used material from game studies, urban studies, architecture, and cultural studies to provide understanding of theories of city, the design and understanding of spaces, and the processes of space and place. As I do not privilege one school of thought in game studies over another, I drew on a range of books, essays, papers, and articles to think about the formal elements of games, player action, and the textual content of the games themselves.

### Notes on Play

As with all forms of textual analysis, play is a subjective experience. My experience with the games of this research might be very different from that of another player. I attempted to play the games both with the designer's intentions of goal progression in mind as well as in a non-linear explorative fashion. I chose to focus less on the 'sandbox' aspect of the games like *Grand Theft Auto IV* and *True Crime: New York City*, as "words like sandbox do not refer to structures but rather their use (Nitsche 171)." This study has focused on a specific use, which is the player's imaging of space through the guided activity of mission and level structure. Sandbox possibilities are not completely unrelated, of course. Where appropriate I have noted that the sandbox use of space is used to develop understanding. This implies that the games I have chosen can be categorized as designed experiences, but allows for relative levels of flexibility in play.

Not only is play subjective, imaging the city is also highly subjective. This paper is not an empirical study of the application of precise techniques, nor a content analysis producing quantitative results. Rather, it seeks to be a framework for looking at the spaces and places of video games that are open to multiple interpretations.

### Terminology

One difficulty with writing about video games is a lack of agreed-upon terminology. This can lead to obvious confusion. I would like to define a handful of the words I rely upon in my research.

*Space and Place*: I have begun with Yi-Fu Tuan's *Space and Place* (1977) for an overview of these terms. Space is understood as the three dimensional structure of the world which contains objects and general actions that have Cartesian relationships, while place is space transformed by shared and negotiated cultural understandings and specific action (Tuan 2001, 6).

*Gameplay*: 'Action', a term used by Alexander Galloway in *Gaming: Essays on Algorithmic Culture* to describe the basic interaction with a video game, refers to active participation by a player in enacting the software (game) that runs on the hardware (platform). 'Action' provides a tangible series of definitions for what I imply when I use the term gameplay. Galloway discusses four types of action: operator, machine, diagetic, and nondiagetic. Operator action is that performed by the player whereas machine is performed by the software and hardware. Diagetic action occurs within the game's world whereas nondiagetic action might refer to menus, cheats, or other processes related to the game which are outside of the "pretend world of character and story" (Galloway 2006, 8). In the context of this research, "action" describes the diagetic operator actions as defined

by control mechanisms. It is meant to refer to the range of actions a player can take—including, but are not limited to: moving a character's body and interacting with the environment, interacting with other characters, combat, manipulating the environment, and methods of achieving goals.

*Evaluative terms:* Throughout this research I evaluate the success of video game cities using terms like presence, engaging, and compelling. I mean these not to be the end-all be-all of a successful game, but because I have dealt with 3-dimensional game spaces on a subjective level, it is worth defining them. The social subject of most video games is someone interested in playing and engaging with the system. While there might be many styles of play, it can be assumed that players seek some sort of investment in game. The lived experience in games might well be described by the term presence, which is a mental phenomenon based on perception (Nitsche 2008, 203). Jonathan Steuer's often cited definition of presence in Virtual Reality refers to the perception of one's surroundings through sensory data which shapes the user's mental models of past experiences and current concerns (Steuer 1992). The player's body and camera movement in space is in part responsible for the feeling of presence (Nitsche 2008, 203-208). The body in space over time helps cultivate presence that produces a positive psychological effect (Ryan 2001, 72). This effect can make a place compelling, whether it be through interesting gameplay (action) mechanics, an intriguing system of rules, or an engaging environment.

*Mission:* Many of the games I played were based in open worlds: cities that could be explored in a non-linear fashion in which the player traverses the same course many times. This is a different method of progression design than the traditional level-based

design in which the goal is to get from one end of the area to the other. With this kind of design, sections of play are triggered by the player's interaction with the environment or other characters. The term mission is used to describe these isolated or linked incidents of goal-oriented play.

## Chapter 5: Overview of the Games

I will begin by providing an analysis of the spaces and places of the games I played for this research. Going through each game on its own, I provide a brief introduction to the game to help describe the context for those who have not played them. The most useful place to start when looking at depictions of New York City in games is the world and level design that arranges space. Additionally, size and scope of the game's world dictates the function of that space. The next step is to examine the action that is allowed in the space. Related to this are the use of exterior and interior spaces, the architecture and visual design of the physical spaces, and the objects that exist in the world. My three primary games—*Grand Theft Auto IV*, *The Darkness*, *Ultimate Spider-Man*—receive the most attention, while the others I looked—*Tony Hawk's Underground*, *Max Payne*, *True Crime: New York City*, *Spider-Man 2*, and *Deus Ex*—are written about briefly to provide points of comparison.

### Primary Games

#### Grand Theft Auto IV

*Grand Theft Auto IV* (2008) is the most recent entry in the *Grand Theft Auto* series. Set in Liberty City, a fictionalized representation of New York City, *GTA IV* tells the story of Niko Bellic, an Eastern European immigrant who has come to Liberty City at the behest of his cousin, who has promised the riches of the American Dream while offering Niko a chance to escape the wrong-doings of his previous life.

The *Grand Theft Auto* series is known for its translation of geographic places and cultural representations into playable game worlds (Bogost and Klainbaum 2006). However, whereas games like *San Andreas* and *Vice City* relied heavily on cultural referents from film, music, and television, Liberty City of *Grand Theft Auto IV* relies more heavily on representing places and locations of the real New York City. Relying on physical and architectural references has its drawbacks—players unfamiliar with New York will be unable to make connections with the world (Bogost and Klainbaum 2006). However, the sheer number of locations and landmarks represented works to lend credibility to the image of a coherent New York—even if the play doesn't recognize a place its mere inclusion validates its existence. Working within this issue, the game builds its own vision of New York City that is not strictly tied to topological knowledge. This is made possible by New York's prominent cultural heritage—rather than rely on a select few works to set the tone of the game, Rockstar was able to draw on the tremendous wealth of New York City's cultural grammar.



**Figure 8**

Liberty City was by far the largest city from my research [Figure 8]. It does not attempt to accurately recreate New York City, but rather integrates its representative

characteristics into a contracted space. The design of the island of Algonquin is not a street-for-street copy of Manhattan, yet it is arranged similarly and features all the major areas one might expect to find in a depiction of Manhattan. Because the game is designed primarily around automobile travel, such a large area can be used because traveling through the space is relatively quick. In order to distribute the experience of the many places of the game, the player will relocate their central hub of activity between the five areas.

Liberty City is vast in scope, with five distinct areas representing four of the five boroughs of New York City as well as a part of New Jersey. Niko begins in Broker (Brooklyn), and moves his way through Dukes (Queens) and Bohan (the Bronx) to Algonquin (Manhattan) and eventually Alderney (New Jersey). The naming conventions of Grand Theft Auto IV are important to note because they have real-world referents. "Dukes" is based on Queens (both British aristocratic titles), "Algonquin" and Manhattan are both Native American words, and "Alderney" and Jersey are both British Channel Islands. Other examples of referential naming include BOABO (Beneath the Offramp of the Algonquin Bridge Overpass) which pokes fun at the complicated acronym for Brooklyn's DUMBO (Down Under the Manhattan Bridge Overpass), Hove Beach replaces Brighton Beach, as there is a city in the UK named Brighton & Hove, The Meat Quarter replaces the Meatpacking District, and the Corona neighborhood in Queens is replaced with Cerveza Heights (another term used for a Mexican beer) (wikia n.d.).

Ulrich Gotz criticized game designers for beginning with relatively blank canvases and constructing the look of a space that's realistic without concerning themselves with what it means to build within the constraints of physical materials (Gotz



2007, 136). Liberty City was one of the few games in this research that felt as if it were constructed with physical building material rather than textured surfaces. This is in part due to the advanced technology of the current generation of video game systems—more storage capacity allows for more detail while higher computational speeds processes the enormous amounts of data. And while merely having the technology available does not imply that a designer will take advantage, Rockstar managed to construct buildings that felt as if they had weight and physicality. This differentiation is an important part of making the place of New York City. An upper-Broker brownstone felt different than a Manhattan steel skyscraper or an Alderney suburban home. Richard Bartle, writing of virtual spaces, stated that polygons represent surfaces that are implied to have volume (Bartle, *Making Places* 2007, 161). While creating a surface and giving it a texture is enough to imply volume, going beyond this is a more difficult task. Liberty City feels solid, weighty, and grounded.

Despite being the largest, Liberty City exhibits nearly as much attention to fine levels of detail as those games that take place in limited spaces. There is a torrent of architectural and cultural references to the real New York. It includes places both recognizable and obscure. There are versions of all the major buildings of Manhattan, recognizable infrastructure like bridges and the subway, parodies of visually prominent objects, representations of famous New York restaurants and stores, places like Coney Island and the World's Fair tower, and multitudes more. The city is also alive with pedestrians during the daytime, though obviously not as many that crowd the real streets of New York. Automobile traffic is also not as bad—a necessity of the player's fast and reckless travel.

*Grand Theft Auto IV* is not as adept at interior design. Liberty City logically contains the most interiors of the series, but access to these interiors is still limited. While certain places are available all the time—the bar, Internet café, stores, the bowling alley—private spaces are only accessible if the current mission requires it. While the interiors of places are well detailed, the player does not experience them for long enough periods to really establish a sense of place. Most interiors (excluding the safe-houses and recurring character locations) are experienced in passing and forgotten. This is understandable, as we don't wander into random houses and buildings during our normal routine, but there are times when it would be satisfying to find a new interior space. The game reinforces our access to space in the physical world. Beyond the private spaces of home and work, we are limited to the public places that satisfy our needs can only enter private spaces when invited.

Not only does the space feel like it has real volume, but it gives the impression that it was created over time rather than built from scratch. When I arrived in Liberty City, I did not feel that my experience of it was the first time it had been ventured through; I was diving into an evolving space—one that had existed before me and one that would continue on after I finished playing. I attribute this to the designers' attention to detail. Each building felt individually modeled and their facades specifically crafted. And yet, in spite of this, there was perhaps something too realistic about the distribution of the buildings in space that made them difficult to distinguish from one another. It was the opposite problem of every surface being given the same texture. There were many places in Liberty City that lacked the defining landmarks—the standout pieces of architecture—that I had used in previous *Grand Theft Auto* games to orient me to the

space. Without a guiding map I would easily get lost in the suburbs of Alderney or the slums of South Bohan. This problem should be a design consideration; realistic modeling also models the flaws of real space.

## The Darkness

*The Darkness*, published by Starbreeze Studios in 2007, is based on the comic book series of the same name. At the game's opening, the main character Jackie Estacado, a young mafia gangster who grew up in an orphanage, is about to turn 21. On the night of his 21st birthday, his "Uncle Paulie" orders the assassination of Jackie for reasons unknown to both Jackie and the player. During the course of the first half hour of the game, Jackie becomes possessed by a demon curse passed down through the males of his family called "the Darkness". The Darkness, wanting its host body to live, possesses Jackie and compels him to go after his would-be murderers and enemies.

The design of New York City in *The Darkness* is opposite that of *Grand Theft Auto*. Rather than present a sprawling city, *The Darkness* limits the player to a handful of small neighborhoods in Lower Manhattan to be traversed on foot [Figure 9]. It is more akin to the actual lived experience of a city-resident, in which most time is spent in familiar places. This is not the average lived experience being represented in the game, however. The game's protagonist is dark and troubled, and aside from his girlfriend's apartment, the places he feels most at home are the subway stations where he spent much of his youth. The two stations, Canal St. and Fulton St., lead to the streets of Jackie's neighborhoods [Figure 10]. The primary neighborhoods of the Lower East Side and Chinatown and buildings like the real Trinity Church and fictional St. Mary's Orphanage are accessible from the subway stations, while locations like City Hall, Gun Hill, the

Turkish Baths, and the Pier are accessible through underground service corridors and abandoned train tunnels.



Figure 9



Figure 10

The buildings around the player on the surface are tall and confining. The scale of the streets and buildings are relatively accurate. Interior space is significant because it extends the physical area of the game. A quarter of the way through *The Darkness*, the

main character gets drawn into a Hell that resembles a World War I battlefield, extending forever in every direction. This startling and frightening space reinforces the familiarity of the intimate neighborhood in which Jackie grew up and the player has adapted to in the first couple hours of the game. During the course of the game, goals are presented either through events triggered by the narrative or by accepting tasks from the non-player characters. The people in the space also change over time. Not all areas are available immediately to the player, but the majority of the space is visitable from the beginning.

The buildings of *The Darkness* are relatively nondescript, but this matches the kind of neighborhood being portrayed. There is not a lot of variation in the architecture nor are the exteriors of the building finely detailed, but what helps make this New York City a believable place is the consistent quality between exterior and interior spaces. Unlike *Grand Theft Auto*, the player seamlessly travels inside and outside, so in order for there to be fluid movement there cannot be a noticeable transition (like loading screen or change in quality or design). Many of the interior apartment spaces are run-down, emptied of personal possessions, and vandalized. Other interiors include a church, an orphanage, a warehouse, a meatpacking factory, and the abandoned tunnels of the subway.

The game has a dark tone that is established through its meshing of the genres of horror and mafia story, the dynamic of lit and darkened areas, and the mixing of the real and the fantastic. The Darkness, as its name alludes, is most powerful in darkened areas. The Darkness manifests itself in giant tentacles that come out of Jackie's back which give him augmented abilities such as increased body strength and the use of special dark powers like the "dark tentacles" which can be used to impale enemies or the "creeping

dark” tentacles that slide across the ground, allowing Jackie to attack enemies from a distance with an out-of-body weapon. These grotesque monstrous tentacles slither and hover over Jackie’s shoulders, which places them around the periphery of the screen in the first person point of view. Finding and making dark areas becomes a basic combat strategy. Most of the game takes place at night, so the player is taught to knock out streetlamps when outside and lamps and ceiling lighting while inside buildings to increase the strength of the Darkness powers. This reverses common expectations of the function of lighting in the city—light no longer means safety and nighttime is privileged over daytime. Unlike *Grand Theft Auto*, New York City of *The Darkness* is not a clockwork city, so passing in-game time does not affect the time of day.

### Ultimate Spider-Man



Figure 11

Manhattan and Queens are represented in the 2005 game *Ultimate Spider-Man*. Peter Parker lives and goes to school in Queens, but must travel into the city for his job as a photographer at the Daily Bugel. These spaces are scale versions of their real life

counterparts, but feature most of the landmarks one would expect to find. The area of Queens accessible by the player is only a small region of the borough—just large enough to suggest a sense of Peter Parker's home. Characterized by short brick buildings and small neighborhoods with two-story houses, Queens is not the most interesting space for Spider-Man to move through. Downtown Manhattan provides the more typical web-swinging experience and adds verticality to the sensation of movement. The entire city is open to the player at the beginning of the game.

The game has a cel-shaded art style reminiscent of the comic book series upon which the game is based, which means the textures of the world aren't highly detailed [Figure 11]. Instead, with all the "noise" removed, the environment's color and shape becomes an important component of the spatial design. The steel and glass skyscrapers of Manhattan are colored mostly blue, silver, and grey, but these colors are vibrant and bright. Buildings further away in the player's view are nothing but colored shapes, while the level of detail increases as the distance of shrinks. This allows for the game to have a large draw-distance without a startling contrast between the detailed and undetailed places. Landmarks are well represented in *Ultimate Spider-Man* and even shape some of the quests in the game. For example, a battle that takes place in Times Square is designed around the enemy's ability to absorb energy from all the bright lights and flashing displays—destroying the neons of this iconic district of Manhattan is the key to defeating the boss. Fifteen "Landmark Tokens"—part of which are New York City landmarks and part of which are Peter Parker landmarks—are scattered throughout the game for the player to collect. This illustrates the mixing of remediated New York Cities. New York City was imagined for the *Spider-Man* comic series, the comic series was reimagined to

exist in the alternate "*Ultimates*" universe, and the game remediates that world into a playable form.

## Secondary Games

### Tony Hawk's Underground

Rather than attempt to turn Times Square into a skatepark, *Tony Hawk's Underground* constructs a fictional Manhattan composed of real skating landmarks. Upon entering the level, some of these famous skating spots like the Veterans Memorial, the Brooklyn Banks, the pyramid ledges, and 78 Water St. are introduced. This introduction is important because the average player is not expected to be familiar with this specialized knowledge of skateboarding. The level, like others in the game, is not expansive. Instead of representing the space of New York City, *Tony Hawk's Underground* is a prime example of creating a new place that could very well be a real part of New York City [Figure 12].



Figure 12



The level architecture is arranged around a central core of buildings that form a square ring of roads and sidewalks that encircle the area. A handful of vehicles drive around the closed circuit of road to give the impression of traffic. The outer barriers of level are buildings on three sides and river on the fourth. The design of the skateboarding space in the *Tony Hawk* games is supposed to facilitate the linking of skateboarding moves, which is especially important for grinding (sliding the skateboard along a rail or edge) over long distances. Pedestrians, vendors with food carts, construction workers, police officers, and other skateboarders populate the skating area. Some of these pedestrians present the player with tasks, which are usually related to the area of the city in which they are standing. If the player is not undertaking a task, they are free to skate the city without penalty. Buildings include a university, office buildings, a music store, a couple of shops, and a McDonald's.

## **Max Payne**

*Max Payne's* aesthetic is heavily influenced by noir and detective fiction. Max Payne's voice in the cutscenes is that of a classic noir protagonist—quick-witted, fast-thinking, and even-headed. Chapters have names like “The Blood Veins of New York” and “The American Dream.” The game opens with cinematic of the New York City skyline from the water during a snowy winter day. Police cars and a helicopter move through the city to the scene of the crime. These initial moments of the game are among the few times the city is shown from a zoomed-out perspective. *Max Payne* is a linear experience of New York City—players are not free to roam the space, nor do they have any reason to revisit places they have been. Most of *Max Payne's* levels are based in

interior spaces and exteriors are primarily close-quarters and used for transitioning between buildings.

In order to create a cohesive world that does not get stale, *Max Payne* is tasked with focusing on characterizing the interiors as iconic New York City spaces [Figure 13]. Following the prologue, the player begins in the most often represented place in New York City games: a subway station. They will travel through a seedy motel, a dive bar, a noisy club, a liquor store and pawn shop, warehouses, rundown apartment buildings, rooftops, a shipping yard and freighter, office buildings and other locations familiar to the film genres of noir, crime drama, and action that *Max Payne* draws from. As a level-based game, *Max Payne* relies heavily on a labyrinth design. While there are some logic-maze puzzles, the player is generally always moving forward from one end of the stage to the next, winding through long corridors. This necessitates buildings and areas that are connected to each other over extended expanses of space. In some cases this produced unrealistic spaces whose depth did not match my expectations of physical architecture. However, the layouts of the buildings were internally consistent within the game and my mental models changed over time to understand this structure.



Figure 13

## True Crime: New York City

*True Crime: New York City* is the story of Marcus Reed, a gang member turned police officer in the New York City Police Department. Reed is a plain-clothes cop working to clean up the streets of the city, though the player chooses if they want Reed to act lawfully or unlawfully in his procedures. The player walks and drives the streets of an open-world Manhattan, accepting police dispatch requests for crimes in progress while all the while pursuing goals related to an overarching storyline.

*True Crime: New York City* is notable because its city is a relatively accurate street-for-street recreation of the real Manhattan. However, what would seem like a technical accomplishment is actually an example of the difficulties of translating our everyday world directly into game. One of the most glaring issues with the game is that despite this size, the actual events and play of the game do not necessitate such a large area. Most of the streets can be classified as filler, with very little to distinguish one block from the next. In our normal experiences in the physical world we don't mind repetition because we're not making use of the whole city at once—we make meaning in our lived area. It is possible to interpret this design as speaking to the procedural mechanisms of police work, in which the repetitive tasks of the job create little distinction between the place they are taking place.

By comparing the representations of Manhattan's spatial distribution in *True Crime: NYC* and *Grand Theft Auto IV*, we can see how missions should be designed to accommodate the grid that is New York City. For one, *GTA IV* has more linear missions, so the designers can pick starting and ending locations for travel based on the availability of roads. In *True Crime: NYC*, however, the police dispatcher does not care which

direction you are traveling when assigning you the side-missions. As a result, I found myself racing down one-way streets against traffic, hoping to make it to my destination on time. The traffic patterns and car control just are not up to handling this movement. Even with my sirens blaring I was constantly getting t-boned in intersections (which indicates traffic was only programmed to take into account those vehicles traveling in front of you).

*True Crime: New York City* attempts to make use of memorable landmarks as grounding elements. Some of these landmarks include the United Nations Building, the Chrysler Building, the Metropolitan Museum of Art, or the World Trade Center, and Rockefeller Center. Despite being depicted, the player never interacts with most of these in any meaningful way. In terms of the arrangement of districts, there is hardly any visual difference between neighborhoods—Washington Heights looks like Hell’s Kitchen. Though it includes many New York City landmarks, they only serve to highlight the disparity between the real place and the place of game action. The pedestrians take the form of only a few model types, meaning it’s possible to stand in a group of pedestrians who all share the same face though different clothes. Ultimately, the place felt like a city skinned to look like New York that didn’t exhibit a sense of place.

## **Spider-Man 2**

Released a year before *Ultimate Spider-Man*, which I have focused on more extensively in this research, *Spider-Man 2* is about the free exploration of the island of Manhattan. The series' use of the open-city format was first introduced in this game, which means it was experimenting with the mechanics of open-world gameplay. The game opens with a CGI sequence of Spider-Man swinging through the city, narrating the

games exposition, stating that New York City is "my home, my playground, my responsibility." In these three nouns we find three of the key elements of place in *Spider-Man 2*. Unlike *Ultimate Spider-Man*, which actually features Peter Parker's house as a location, *Spider-Man 2* implies that the entirety of Manhattan is where Spider-Man makes his home (creating a dynamic between Spider-Man and Peter Parker). 'Playground' is meant to represent the wandering architecture that Spider-Man is free to move through. 'Responsibility' represents those things that Spider-Man must do to protect his playground and home—the missions throughout the game that follow Spider-Man wherever he goes.



**Figure 14**

*Spider-Man 2*'s buildings are well detailed, differently shaped, and facilitate the needs of moving through space [Figure 14]. This provides differentiation in the environment in the way *True Crime: New York City*'s flat repeated textures did not. Manhattan's neighborhoods can be distinguished from one another through the buildings' colors and shapes. However, this is the level of granularity at which the game operates. Though spaces are distinguished from one another, they do not have their own sense of place. There are few memorable store-fronts—each emblazoned with a generic 'comic shop' sign—or streets. Landmarks within the game are recognizable on a large scale: the

Empire State Building, the New York Public Library, the Statue of Liberty, Central Park, Times Square, and even a Ground Zero memorial constructed for the game. These major references work at the scale of the gameplay, though. Spider-Man, swinging at high-speeds through the city and jumping from roof-to-roof has no reason to stop at the corner bodega. Peter Parker's declaration of "my home" in his opening narration is actually Spider-Man's home—a place which is not part home, part playground, part responsibility, but rather a place where all three are conflated, concurrent, and inextricable.

## Deus Ex

New York City is one out of a few of the locations of *Deus Ex* and is an example of game that's less about trying to represent the space of New York City than it uses New York City as an easy referent. There's very little about J.C. Denton's New York City that would distinguish it from other urban centers. The NYC portion of the game takes place in Liberty Island, Battery Park, and Hell's Kitchen. The game opens on the docks of Liberty Island with the decapitated head of The Statue of Liberty laying on the ground. Located here is the United Nations Anti-Terrorist Coalition, the organization J.C. Denton works for. The location is symbolic—a global police force situated under the symbol of goodwill and hospitality of one of the planet's most powerful cities [Figure 15].



Figure 15

The space of Liberty Island is mostly empty, though the player will travel inside the Statue of Liberty. Similarly, Battery Park is large open space where the level is more designed around underground passages and the subway platform than the surface space. Hell's Kitchen is generic city space but is interesting because it shares the characteristics of a number of games played for this research. It too features the standard New York City locations of the bar, the club, the rundown motel, the cold streets, the abandoned apartment building, and the major corporation's office building. Apart from its use of the Statue of Liberty as a symbolic landmark, *Deus Ex* could easily have been set in any city.

## Chapter 5: Themes

### Teaching Space and Place

#### Tutorials

Game tutorials are an integral part of understanding space. They teach movement, how to interact with the environment, what to do in the world, and even color the place itself. In order to discuss game tutorials, I have divided them into two categories: moving through space and explanation of place. Each of these is then further broken down into two tutorial types: explicit and implicit. I will begin with a description of these types and distinctions, each followed by an examination of how the tutorials contribute to place-making in the games I am researching.

While teaching movement and gameplay, the explicit tutorial teaches the player how to press buttons to perform actions. This can take different shapes, depending on the game. *Spider-Man 2*, for example, has a narrator that breaks the fourth wall—talking directly to the player as someone outside of the game while forcing them to accomplish a series of goals. *Grand Theft Auto IV*, on the other hand, displays text on screen as new concepts are introduced—the first time the player is supposed to steal a car, a note pops up explaining that the X button will steal the vehicle. *True Crime: New York City* uses a police training course to teach all concepts at once, setting the tutorial outside of the game's environment but still in the narrative diegetic world. *Max Payne* lies somewhere in the middle: its tutorial takes place in a deserted snowy street which matches with the game's setting, but it is outside of the story. *Spider-Man 2* is another example where the tutorial takes place in the actual space of the game but outside of the game's story. The *Spider-Man 2* tutorials are imperative to the construction of space—the player learns how



to swing between buildings to quickly traverse the space, to scale the sides of buildings to reach extreme heights, and how to jump from one building to the next. The player earns points in the game that they can spend on upgrading Spider-Man's abilities and tutorials are used to teach these abilities later in the game.

Implicit tutorials teach play through a variety of means. They can teach basic concepts by setting a player in a place where they are free to experiment with their controls. *Portal* (2007) is a strong example of a game where players learn by doing. Not only do they experiment with basic controls, the game is designed to be "an extended player training exercise" (Robin Walker, *Portal* Commentary). Using this technique, players can be directed to accomplish a simple task that will become a larger part of their toolset. In one such example from *Grand Theft Auto IV*, the player is told to sit in a parked car and look around for approaching enemies, which implicitly teaches them about the practice and value of the rotating camera in the game.

A recurring training strategy in the games I played was seen in early "chase" missions in games. Whether driving on the streets, swinging from one building to the next, or running through corridors, missions where the player has to follow or chase someone were used to quickly train the player to use their mechanic toolset dexterously. In both *Ultimate Spider-Man* and *Spider-Man 2*, the player was forced to chase a character from building to building so as to develop fluid movement in the city [Figure 16]. When the player takes on the role of Venom in *Ultimate Spider-Man*, the chase is reemployed to teach the player the differences between Spider-Man and Venom's style of movement. These not only teach the player how to move their character, but can be used to design guided paths for the player to familiarize themselves with.



Figure 16

### Depictions Versus Experiences of Place

Explicit depictions of place, often narrated or shown in montage, are a common trope carried over from literature and film. A game that opens with a narrator speaking directly about the city, characterizing it through verbal descriptions, is reminiscent of the film noir detective's voice-over. An explicit depiction can also take the form of a cinematic montage showing places and people (again a technique borrowed from film). *True Crime: New York City* opens with a car driving along the streets with cityscape vistas prominent in the background, snow flurries falling gently, and the protagonist's father narrating: "New York City. Manhattan Island. 25 square miles of crowds, concrete, crimes so cold they'd wither the soul and freeze the blood. Millions exist here, walking streets that may swallow them whole and spit out their bones." This technique is a holdover from a legacy medium; though an easy way to establish mood and tone, it lacks the experience of the player moving their body through space.

*Spider-Man 2* opens with a hybrid of explicit depiction and experiential imaging. The introductory cinematic positions the camera as if it was Spider-Man, flying between

the buildings of the city. It uses this as an opportunity for actor Tobey McGuire to voice-over the credits with some of the plot while emulating the experience of the space for the player. While this simulation of movement falls short when compared to actual player engagement, it is at least closer to the experience of the game than a series of static cityscapes or montage of landmarks that are often used as stand-ins for place.

*Max Payne's* noir influence makes use of the classic noir detective voice-over to describe the space. In between a chase sequence, the player jumps on top of a speeding subway car. During the cutscene, Max Payne narrates, "New York sped by on fast forward, dark rooftop water towers and a dead forest of antennas and chimneys, all a blur." The game uses these cutscene to reinforce the characteristics of the city work because they are based in a genre known for this action and supplement, not supplant, the characterization of space.

A better way to establish the identity of place in games is to reveal them to the subject through movement as they experience space. This does not mean that opening cinematics should be forbidden in games, but that they need to be complimented with experiential learning. Just as a tutorial can be designed to teach larger concepts of play, so too can a depiction of place be orchestrated through movement. *Grand Theft Auto IV* was the most successful at this. Though it opens with a montage of landmarks and cityscapes, when the player is given control of Niko they drive the car just a short ways from the docks to Roman's apartment (the save point to which the player will return repeatedly). The second mission involves driving Roman to a gambling den and hurrying him back, while the third mission sends the player to pickup Roman's secretary and her friend and drive them both home. The roundtrips require driving through a handful of

neighborhoods, revealing the differences in architecture between the low-income and high-rent areas. Each of these missions, when presented by Roman, involves specifically naming streets or neighborhoods to give them a sense of identity. This can be contrasted with the earlier games in the series, in which destinations were often only marked by a blip on the navigation radar instead of being named by the characters.

## Maps

Maps provided in-game are an integral part of how the player makes sense of a space. Maps help players understand space by establishing physical geographic relationships between places, by revealing possibilities of navigation, and by explicitly showing some of Kevin Lynch's city elements (districts, paths, landmarks, nodes). There are different forms the map can take. The pause-menu map, as seen in *Grand Theft Auto IV*, *Spider-Man 2*, *Ultimate Spider-Man*, and *True Crime: New York City*, can be browsed and zoomed while the game is paused. Pause-menu maps usually detail locations of interest, destinations, and the player position, but what does this information say about each of these city spaces?

### Pause-Menu Map

Both *GTA IV* and *True Crime: NYC* treat the district as their smallest level of granularity. While the *GTA IV* map can be zoomed, the *True Crime: NYC* map remains at the same scale. Though both games show the neighborhoods or districts on their map, the utility of doing so is more obvious in *True Crime*. Manhattan in *True Crime* is divided into police precincts that correspond to the actual precincts of the real New York City [Figure 17]. One of the uses of the map is to check the level of crime in each district.

Successfully completing dispatch missions reduces the crime-rate, which is shown on the map on a green-to-red scale. And while it might be a goal of the game to turn all precincts to green, the rigid divisions of the precinct reveals the relatively tenuous connection between crime and geographic location. Does arresting a perpetrator on one street really improve the relative crime-rate of somewhere ten streets away? If the game's modeling of this system seems flawed, it perhaps reveals the flaws of the actual practice of systematically dividing geographic regions and judging their overall level of crime.



Figure 17

When might a player refer to the *GTA IV* pause map? Liberty City is an expansive place and destinations, whether in some sort of mission or player-defined, are often on another island. This means that player cannot just aim their trajectory toward a destination marker on their radar map, as they might need to get on a freeway on-ramp to take one of Liberty City's many bridges. The map reveals the intricacies of the road system and the complexity of the transportation infrastructure. *True Crime: New York City* does not face the same difficulties because it is limited to the island of Manhattan, which is relatively well gridded. To help players move between locations, *Grand Theft Auto IV* features a bright yellow line of navigation on its maps. This line will appear

during a mission when a target location is marked or can be applied by the player if they manually set a waypoint on their map. The line finds the shortest possible distance between the player's location and destination and will update itself if the player finds themselves off-course. Some cars in the game also have audible turn-by-turn directions based on a diageitic GPS system to go along with the highlighted route.

The pause-menu maps of *Ultimate Spider-Man* and *Spider-Man 2* are very similar, as *Ultimate Spider-Man* came out of the same production studio a year after the film tie-in game. Buildings are the most important feature of the map. While the view of the map is top-down, the buildings are rendered in 3D to show their height. As buildings are the method of travel for Spider-Man, this mapping makes sense. The only time the player needs to be on the ground is when fighting enemies or rescuing citizens in distress. At all other times it is more convenient for Spider-Man to be between or on top of buildings. This is also shown on the map by its coloration of ground-level surfaces; the illustration makes no delineation between grass, sidewalk, or road.

What do the map icons and legends reveal about the place? I would like to divide the types of markers on the maps of these games into two categories: missions/goals and landmarks. Though these are closely related (often one in the same), the distinction is useful because of their utility. The maps of *Ultimate Spider-Man* and *Spider-Man 2* allow the player to turn on and off the map icons. This is crucial because of the sheer number of options available to the player at any given time. When viewing these maps, the high density of available missions has the propensity to turn into clutter. There is little that distinguishes one "race" mission from the next, and the maps do not provide any insight into these differences. This meant that only used the map to find unique locations like

story-missions or shops. In contrast, *Grand Theft Auto IV* usually has a few missions running concurrently, so the map is the best way to see what options are available.

The games I researched that did not take place in larger-scale open world environments did not have detailed world maps like those of *GTA IV*, the *Spider-Mans*, or *True Crime*. *Max Payne*, *The Darkness*, and *Tony Hawk's Underground* did not make use of either kind of map. The lack of map implies that there is nothing that would need to be referenced through a map—either that the world is small enough for players to easily find places or that movement is limited to a forward trajectory.

What can we take away from these observations on how the inclusion or exclusion of an overview map contributes to the understanding of space and the making of place? Maps can be useful means by which the geography of space can be comprehended at once and are useful when the relationship between spaces are an important part of gameplay. They are also good tools for marking relevant geographic locations: missions, destinations, the locations of objects, etc. However, it is easy to abuse a map when designing a game. In the case of *Spider-Man 2*, the map contained a flood of information that was less meaningful because of its abundance. If a player is constantly referring to the map to remember locations, the game has done a poor job at establishing the player's orientation and memory of physical locations in the game. Cosgrove criticized modern maps as merely images of locations of travel removed from place, and too often this happens in video games (Cosgrove 2006, 150). Maps should serve as a reference, not a crutch.

## Radar Map

To draw comparisons to the Liberty City of *Grand Theft Auto IV*, I looked at *Grand Theft Auto III*, which I had forgotten did not have a pause-map. Picking which mission to take next in *GTA III* required referring to the on-screen radar map. The contrast between *GTA III* and the subsequent games poses questions about how Rockstar designed spaces to be understood and navigated without a map in the series' first title. All games in the series come with paper fold-out maps in addition to the instruction booklet, and though there was little utility for these for the games that had in-game maps, it is an important part of visualizing the totality of the city *Grand Theft Auto III*. Without it, the player would have had to construct an image of the city themselves, but this image would mostly likely not be geographically accurate. This raises an interesting question: how important is geographic knowledge of the space in terms spatial comprehension?

How would the experience of *Grand Theft Auto IV* have changed if there was no in-game map like its predecessor? As author Denis Cosgrove noted, "practically, the confrontation with an unfamiliar city is typically mediated by the map: of transit routes, of streets, of tourist destinations. Urban experience in a new city is often a process of negotiating the divergence between cartographic and material space" (Cosgrove 2006, 148). But what kind of map is he referring to? On the one hand, the radar map illustrates transit routes and streets; the radar map is a technology of immediate reference. But outside of the familiar Google, Yahoo, or MapQuest map that people use to print directions to a place, how often do we look over the entirety of a map of a city? Is a newly arrived tourist to Times Square interested in Staten Island's geographical proximity to Manhattan? Because the *Grand Theft Auto* games have geographically widespread



missions and goals, the map caters needs of the player. The radar map addresses the more immediate needs of the player.

The radar map, which distinguishes itself from the pause-menu map, is an active mini-map used for real-time navigation. Usually positioned in a corner of the screen, it has become a regular tool for designers of large-world based games. It highlights game-event landmarks in the player's immediate surroundings, serves as a guide to target locations, and orients the player to paths of travel.

The radar map is a double-edged sword, however. While a useful reference, it can diminish the player's attention to their immediate surroundings. *Grand Theft Auto IV*, as the only game example with an actual navigation system that highlights the routes the players should take to reach a destination, illustrates the problems of the radar map. During the course of my play I often focused nearly exclusively on the mini-map to guide me, as opposed to using my sense of the space and previous experience traveling through the area. In doing so, I was more concerned with making the correct turn than taking in my surroundings. Constantly checking the radar map meant I was mentally removed from the actual three-dimensional space of the game, even if I was engaged with the goals presented.

*Ultimate Spider-Man's* radar, as a tool for indicating destination, was less intrusive because Spider-Man is able to travel in close to a direct line. While web-swinging between buildings, and double-jumping and web-zipping on top of buildings, the player as Spider-Man is able to traverse New York City quickly, using the architecture as opposed to being hindered by it. The player can give more attention to

changing landscape in this case, because they are using the mini-map for orientation rather than specific direction.

*Ultimate Spider-Man* and *Spider-Man 2* are also good examples of how the radar map handles altitude, which we often don't think about in city maps. Not all targets in these games are at the same height—one of Spider-Man's destinations might be at the front entrance of a building while another could be high atop another. The height of the target is shown on the radar map by the length of the marker on the map [Figure 18]. As Spider-Man, climbing and web-slinging up the side of a building, the player's market on the map grows in length, which means that two markers of equal length should be at the same elevation.



**Figure 18**

The markers on the radar map in *Grand Theft Auto* games are not as precise because there's not as great a range of height at which something can be located. If something is above the player, the "blip" is a triangle pointing up, if below the triangle points down. It does not account for the changing difference in elevation, only changing

once the player reaches the same plane. *True Crime: New York City* does not account for changes in elevation because all of its action takes place on the same plane.

## Moving Through Space

Spaces are experienced through movement, but not all movement takes the same form. Borden wrote, "these are bodies which actively do something, which have dynamic operation in the city... Actions are important not for their production of things, but for their production of meanings, subjections, relations, uses, and desire" (Borden, *Skateboarding* 2006, 12). Some games have a linear trajectory in which the player moves from place to place, unable to return to previous locations unless the game takes them back. Others lie on the opposite end of the spectrum, in which players are free to roam the world as they please. This distinction is similar to the categories Richard Bartle presents in his essay "Alice and Dorothy Play Together" about the design of virtual worlds. An Alice world, like *Alice in Wonderland*, encourages players to find their way through the space—the world, not the game, introduces goals (Bartle, *Alice and Dorothy Play Together* 2009). A Dorothy world, like *The Wizard of Oz*, sets the players down a guided road with an overarching goal and a series of intermittent tasks (Bartle, *Alice and Dorothy Play Together* 2009). The games I played for this research take on characteristics of these types of worlds, though the dynamic is clearly not as simple as Alice and Dorothy. Whereas both Alice and Dorothy traveled on foot, the games surveyed present a variety of transportation options. These options are coupled with design decisions: is the game world exploratory or experienced linearly, are locations revisitable, and what methods are used to restrict entrance to a space? I will also look at the design of mission structure and progression as a technique for revealing new spaces.

## Travel Options and Spatial Design

The method by which the player moves through the space is the first piece in understanding place-making. Depending on the type of game, the travel possibilities vary widely. *Max Payne*, *Deus Ex* and *The Darkness* are all based on foot travel. As a result, these games focus on smaller spaces: building interiors, narrow corridors, alleyways and rooftops, and intimate public spaces [Figure 19]. The geographical distance the player is expected to travel is shorter as well. Though the player of *Max Payne* will travel significantly more on foot than the average person, this effort is expending in a more labyrinthine series of buildings—in the door of the ground level at one building, up through each floor, out onto the roof, and again in from the top of next building spiraling down to the bottom floor. This structure implies city-space as highly interconnected. While playing through *The Darkness*, the player's foot travel in a limited space means they will return to the same familiar places time and time again. The experience of place in *The Darkness* is localized and personal; the city is defined by everyday lived experiences limited to the world of the main character.



Figure 19

Again, having looked at the earlier Liberty City to draw comparisons, *Grand Theft Autos III* and *IV* are mechanically very similar. The player can walk, run, jump (and later climb) while on foot, but as the titles suggest, the primary form of travel is in automobiles. *Grand Theft Auto III* makes the most use of vehicular missions as a hold-over mechanic from the first two games, which were 2-dimensional and top-down. In contrast, *Grand Theft Auto IV* often uses vehicles as a means of traveling from one place to another, at which point the player exits the vehicle and proceeds on foot. They can drive a wide range of vehicles from old-rundown to top-end sports cars, motorcycles and trucks, boats and helicopters. These are not just a means of getting from place to place, but are often integrated into the goals of the mission: transporting people, tracking someone down, vehicle races and chases. While *GTA III* takes place primarily outside on the streets, *GTA IV* makes use of more interiors, which is why commuting becomes a primary task. Despite their differences, both of the games lead the player to a similar sense of spatiality—the places in between are often blurred in the imagination because they are passed so quickly. As has become common in recent video games, traveling at high speeds in cars even produces a visual effect that literally blurs the world around the player and draws attention to the immediate concerns of the road.

*True Crime: New York City* will display the current street and the approaching cross-street on screen while the player is driving. This display, whose graphic looks like actual street signs, indicates whether the road is two-way or one-way. This is useful in areas that have a structured progression of streets (alphabetical or numeric) or major recognizable arteries, but are less helpful to players unfamiliar with the exact layout of

Manhattan in the unstructured areas. *Grand Theft Auto IV* also displays the current street name on screen, but because it is not prominently featured it is difficult to reference. Instead of learning street names while playing, I composed approximate visual mental models of locations based on landmarks, districts, and paths.

Another issue I had with *True Crime: New York City* was that the location of mission events seemed to be arbitrary, which made travel either too simple or too complex. As an example, while driving along in my unmarked cop car on the highway, the police dispatcher informed me of a robbery in progress a mile from my position. The problem, I realized, was that the geographic distance of the target location had nothing to do with the actual route I needed to travel to get there. I found myself driving for at least a minute in the opposite direction until I found a highway offramp, at which point I backtracked on the surface roads toward the target. By then, it was too late—the crime had been perpetrated and the assailants escaped. Unlike *Grand Theft Auto IV*, where I would have easily been able to drive off-road, I was limited by the same kinds of physical barriers that would prevent dangerous driving in the real world. The demands of the game were not matched to my mobility.

The subway of *True Crime: New York City* has a disorienting effect. Every subway station looks the same in the game; the only difference is the sign that indicates the stop name. Subway rides take as long as the disc loading of the next area. This, in addition to the technical bug which does not update the player's pause map until after they've exited the station to the surface, means the subway is merely a teleportation system void of spatial legibility and sense of place. This can be contrasted with *Grand Theft Auto IV*, which gives the player the option of experiencing the entire duration of the

train ride while cycling between different camera angles outside the train. This is even true of the underground rail lines. It should be noted that this experience of riding the train is quite opposite the everyday experience, in which, Jakobsson writes, the rider's attention is turned inward and the passing of the city goes unnoticed.

Though Niko is a driver in *GTA IV*, he is not a car owner. While early missions employ Niko's cousin's taxi as a consistent mode of transportation, the game eventually necessitates the titular action of grand theft auto. Though the player never technically owns a car, the phrase "possession is nine-tenths of the law" applies to a mechanism that allows the player to park their car in a designated spot in front of their safe house to retain ownership of it until it leaves that spot. This can be used for convenience sake or to keep hold of one of the game's nicer cars. But because the player does not retain one car (or progress through a series of cars) in the game, there is no experience of the car as a private personal place. In contrast, Marcus Reed in *True Crime* is a partial car owner: the player can requisition a police car from the station headquarters, buying newer and nicer cars over time. Because I was a car owner, I felt compelled to stay with my car even though I was able to steal (or commandeer) them on the city streets. I also felt dissonance when, after having abandoned the vehicle across town, it was available again in the police garage after returning to the station. My behavior and actions felt at odds with the rules that should have governed the city.

*Ultimate Spider-Man* and *Spider-Man 2* are interesting examples because they appear to be guided by the body like walking, but are closer in speed to vehicular travel. Spider-Man's web slinging is a fantastic form of travel. The motion of web swinging, with the swooping camera trailing behind Spider-Man's back, produced a unique

sensation of the body in movement. Swinging and web-zipping are also much faster modes of travel—I often moved at rates faster than the cars on the ground. Though I developed web-swinging proficiency over time, it is an action that at first required constant attention to my surroundings. The uniform shapes and consistent gridding of many of the game’s buildings facilitated the ease of movement. More difficult places of navigation might be described using an analogy of a person running on an indoor track versus a rugged mountain trail.

*Tony Hawk’s Underground*’s primary means of travel is on skateboard, although for the first time the player has the ability to get off their board and walk, jump, and climb on objects and structures. These new options matched evolving demands of the game series—which originally did not let the players travel the world freely between goal sessions. Because a moving skateboard is not the easiest thing to precisely control, being able to walk freely meant that players could more easily get around barriers and even stop to survey the world. The introduction of the climbing mechanic also meant that players could reach new heights, finding new places to skate atop seemingly inaccessible buildings.

*Max Payne* follows the classic video game structure of the level-based labyrinth. Spatial navigation is not a matter of finding ones way through a maze, nor revisiting the same area for multiple purposes, but is rather presented as a series of obstacles in a linear trajectory. As the player moves on foot through buildings, alleyways, rooftops, and other close quarters, the places are given individual characteristics to compliment the tone of the game. But because the player is always moving forward, everything is experienced in passing. This can be contrasted with *Deus Ex*, whose world takes on a similar feel, but



whose space presents more travel decisions. These decisions depend on how the player has chosen to play the game: a heavy weapons user might enter the front door guns blazing, while the hacker or lockpicker might search for a way around back to sneak in [Figure 20].



**Figure 20**

Instantaneous or automatic means of travel are present in various forms in these games. In *Grand Theft Auto*, for example, the player can hop in the back of a taxi and direct the driver to a destination. In doing so, the player can choose to sit and experience the full drive or can press a button to be instantaneously moved to the desired location. Riding on the subway is a feature of a number of the games I played. As the subway platform is a primary location in *The Darkness*, riding on the subway is a necessary means of moving between spaces. Once the player enters the subway car, a cut-scene of Jackie talking about his life plays to hide the loading time between areas.

If so inclined, the player can move through Manhattan on the subway in *True Crime: New York City*. Though the same subway platform model is used for each of the many stops, the signage updates to indicate the station's location. To ride the subway, the

player must enter the station, wait for a train, and enter the car. Upon doing so, the pause-menu map appears and the player can select any location on it. The train proceeds to take you to the nearest stop to your target location, though this can be confusing because the pause map doesn't update your location until after you exit the station. As a result, while experimenting with the subway I at first thought I was not moving around the map and believed I was incorrectly navigating the subway-destination map.

The level-based games, *Deus Ex* and *Max Payne*, used their chapter-like format to move the player around different parts of the world. The player enters an area, moves through it and completes its goals, the chapter closes, and they are brought to a new level. The player only walks within the space, not between the levels.

### Dispatch Missions

Dispatch missions are interstitial goals and activities activated by an outside force as the player moves through space. While swinging through Spider-Man's Manhattan, blips appear on the radar showing the location of crimes in progress or people in need. This work is a part of Spider-Man (and the player's) obligation. Examples of *Spider-Man* dispatch missions include beating up muggers, stopping bank robbers, saving people who are dangling from roof ledges, and carrying injured people to the hospital. While these activities illustrate the city as a place of constant tension, they can be repetitive and interrupt the current progression of the game. These interstitial goals also have no sense of situated place. A beat-up-bad-guys mission is equally as likely to occur in the financial district of Manhattan as it is the dodgier areas of Queens. Both *Spider-Man 2* and *Ultimate Spider-Man* use these dispatch missions as activities between the story missions and as a way for the player to earn points to power up and advance.

*True Crime: New York City* also relies on the dispatch because the main character is a police officer. While driving around the city the player gets requests to resolve situations and arrest criminals. These activities do not have the levity of Spider-Man's comic city, though. The player tracks down enraged drivers and violent criminals, resolves hostage situations and robberies in progress, and prosecutes murders and rapists. The overwhelming number of crimes characterizes the city as a dangerous place with real threats, and the large expanse of space in the city makes it impossible to resolve all issues. This can be interpreted as a rhetorical mechanic designed to criticize the difficulty police officers face in their daily experience of the city.

### **Mission Structure Revealing New Spaces**

Under the assumption that designer is guiding the experience of important portions of these games, we can observe mission structures' revealing new locations or creation of new uses for old locations. Not only do players map spaces geographically, but they also map them in terms of activity flow (the juxtaposition of accessible areas and pursuit of game goals) (Jakobsson STP 167). This concept was explained well by Kevin Lynch:

*"Intuitively, one could imagine that there might be a way of creating a whole pattern, a pattern that would only gradually be sensed and developed by sequential experiences, reversed and interrupted as they might be. Although felt as a whole, it would not need to be a highly unified pattern with a single center or an isolating boundary. The principal quality might be sequential continuity in which each part flows from the next — a sense of interconnectedness at any level or in any direction. There would be particular zones that for any one individual might be more intensely felt or organized, but the*

*region would be continuous, mentally traversable in any order. This possibility is a highly speculative one: no satisfactory concrete examples come to mind” (Lynch 1960, 115).*

There are various techniques designers can use to introduce new spaces to the player. One classic method—employed heavily in the *Grand Theft Auto* series—is through islands. Upon arriving to Liberty City, the character Niko asks his cousin to show him around the city. Cousin Roman responds that the bridges have been closed down due to the threat of a terrorist attack. This limits play to a confined area for a designated amount of time. As someone well versed in the series, I anxiously await the familiar mission that opens up the next island. Often, this transition is integrated into the task, in which the player moves into the new island as part of the mission. Another method used in *Grand Theft Auto IV* comes after the completion of an important series of events, at which point the character is directed to seek out somebody in one of the new areas. The anxious player (myself included) may yearn to wander the entirety of the space, but this technique allows the designers to guide the pacing of the experience. It also mirrors people's actual experience of space in real life; upon arriving in a new city we begin by exploring a small area and branching out—though in this case the game dictates which place is explored first.

The mission structure of *Grand Theft Auto* is important because it guides how the player interacts with and moves through the space. Players are free to move about the city until they decide to accept a mission from non-player characters (NPCs). In the beginning, Niko is doing tasks for his cousin, but as he meets new characters they present new missions the player can take. This means that players start off at a specific location at which they accept the mission, travel somewhere to accomplish a task, and return to

the location to get a new mission. Missions given by a single character are presented in a set order, but the player can do Missions A and B from character 1, Mission A from character 2, and then Mission C from character 1. This structure means activity in the game is directed or guided, but not linear.

*Tony Hawk's Underground* uses new goals to introduce new spaces the player was unaware of. For example, one of the first missions the player takes is to help a local student out whose stuff was stolen and dropped across the city. The purpose of this first mission is to make the player aware of the second level of play space that is above the street level. The player scales a building, grinds telephone wires, and performs vert tricks to reach greater heights. Another task the player must accomplish in the Manhattan area is to bribe the central building's security guards (by delivering peanuts to them on the skateboard). After doing this, the player is transported inside the building to see a vert ramp and rail heaven. From that point on the player may freely enter the building to skate.

By planning guided experiences through spaces, designers can surprise players with the transformation of familiar places. Goals in *Tony Hawk's Underground* often highlight places the player needs to skate, some of which are not apparent at first glance. In the Manhattan level, this includes a long tension wire that spans part of the harbor that needs to be grinded with a special trick. It also reveals that the player can grind the front bumpers of a series of parked police cars, reinforcing the common narrative of skaters versus authority figures. *The Darkness* also takes advantage of hidden spaces to reveal whole new areas. A single locked door in the subway station, once opened, introduces a whole new place of play. *Grand Theft Auto's* use of interiors also accomplishes the same

effect. Because most interiors are not available until a specific mission, the player might have driven past a building a hundred times without expecting a mission would later take place there (although a clever player might identify spaces that seemed to have been designed specifically for missions).

Missions can also be designed to reveal large expanses of spaces and vistas. One mission in *Spider-Man 2* asks the player to climb to the top of the Empire State Building to take photographs of the city. This mission comes early in the game and is not only used to train the player to climb the sides of tall buildings, but is used to highlight the expanse of the world from the highest altitude in the game. Niko's cousin Roman in *GTA IV* runs a taxicab stand that is positioned next to the river, which means that driving along the road toward it reveals the impressive Algonquin skyline in the distance. *Deus Ex* opens on the docks of Liberty Island, with the Statue of Liberty in view on the left side of the screen and the skyline of Manhattan off in the distance. This image helps establish *Deus Ex's* New York setting right away without much exposition.

## The Narrative Environment

The term narrative environment describes physical or virtual spaces used to tell or experience stories (Pearce, *Interactive* 1997, 329). They shape the meaning of space not through traditional oral storytelling, but rather through a person's interaction with that space. In characterizing the city, it was written that "New York's emergent stories are inscribed in the wrinkles of its weatherworn edifices" (Pearce, *STP* 2007, 201). Many choices go into designing narrative environments: architecture, visual design, paths of movement, and objects in the space. Video games must account for the use of space in regards to their gameplay choices. Are the stories of Spider-Man told on the ground? Or are they rather told where the player spends their time web swinging around the city? In looking at the design of narrative environments in these games, I have explored how public and private spaces, recurring locations, metaphorical architecture, and evocative narrative elements contribute to the understanding of the game world as a coherent place.

### Public and Private

Thinking about spaces as public and private reveals fundamental elements that guide game design. Public spaces are often the result of the medium of the game's desire or need to adventure out into the unfamiliar world. These public spaces are often the result of a driving force in games: the desire or need to adventure out into the unfamiliar world. Public spaces are open to adventure, danger, and the unknown, whereas personal private spaces in general are familiar and safe. In her 1961 tome *The Death and Life of Great American Cities*, Jane Jacobs wrote about the sidewalk as an active place that must be guarded to sustain the pedestrian dynamics of the city. Erving Goffman's *Behavior in Public Places* provided a study of personal behavior in public spaces that also contribute

to social order (Goffman 1963). Public spaces become safe when there are forces that maintain social order; private space become unsafe when they are invaded when we enter unknown places.

Games play into these dynamics to craft tensions and opportunities. We can see this in play in games of all genres. Players sneak into top-secret laboratories, try to escape from monster-infested dungeons, and venture deep into unknown lands. They also take refuge in private spaces, often protecting them from invaders. A trope of the role-playing game genre is for guards to protect the gates of the town or genre, not only keeping the evils of the world out, forbidding the player from venturing into the wild before they are ready. Considering these dynamics and that "private space is distinct from, but always connected with, public space" (Lefebvre 1992, 166), we can see the importance of public and private city spaces.

I would like to illustrate three examples of this dynamic at play as a part of the narrative environment. The first is the generally public space of *Tony Hawk's Underground*. The second is the violation of private space in *Max Payne*. Lastly, *Grand Theft Auto IV* is an example of the player as the violator of public space.

The Manhattan of *Tony Hawk's Underground* is nearly all public space. Borden chronicled the history of skateboarding in terms of public and private places: from the city streets and the drained pools of California backyards, to the fabricated skateparks and reappropriated public architecture, the place of skateboarding is always in flux (Borden, *Skateboarding* 2006, 108). This creates opportunities in the Tony Hawk games much the same as it does in the physical world. The player rides on every piece of architecture



available—storefronts, staircase railings, the roofs of buildings, the sidewalk and street, and even telephone and power lines [Figure 21]. Some missions involve impressing pedestrians through the transformation of public property into spectacle. Others involve escaping from security guards or police designated to protect public space from intruders like yourself. The narrative of the game is not just about an up-and-coming skater trying to make it big, but also, as Iacovoni observed, the act of skating transforms spaces public and private into personal places dedicated to the player’s use.



**Figure 21**

*Max Payne* opens with a highly evocative scene. In a playable flashback sequence, the player, as Max Payne, comes home to their apartment calling out to their wife as the fireplace crackles. The apartment is cozy—hardwood floors and area rugs provide contrast to the usual concrete and pavement traversed in most games. Immediately this scene is disrupted, as the player catches a glimpse of hanging paintings turned on their side and a large letter V and syringe spray-painted on the wall. As the player makes their way through the house the tranquility of a familiar apartment is violently severed—a series of cinematic cuts show blood on the wall and the screaming

of a woman and child are heard in the background. The player regains control over their movement, killing the men who have perpetrated the crime. But it is too late. Again a series of cinematic cuts show a nursery, a pile of baby blocks, and then the murdered body of Max Payne's child. After another shootout we see his slain wife on the bed. This opening, which shows the private protected space we most value violently ravaged gives the player motivation for the rest of the game. Here we see evocative narrative environments and elements at play. The elements are the murdered family, the spray-painted logo, and the escaping criminals. The environment is the normally safe private place—the furnished well-loved house—turned on its head both visually and through gameplay action.

There is no danger in Niko Bellic from *Grand Theft Auto IV* walking the streets of the Bronx at 4 in the morning. The player needs not worry about being mugged or assaulted. There is little threat of pedestrians becoming enemies (sometimes they will fight back if you punch them, but mostly they keep to themselves). On the one hand, the narrative of *Grand Theft Auto IV* is Niko as victim of circumstance just trying to get by in a strange place. On the other hand, the design of the world tells the story of Niko as a public menace. The gameplay of GTA IV is selfish and the world accommodates this. Ignoring for a moment the wanted system which determines police pursuit of the player, they are free to steal cars, kill pedestrians, run red lights, smash into other vehicles, drive anywhere their vehicle will prohibit, possess a range of weapons, and generally pose a threat to every resident of Liberty City. Public space becomes threatening in *Grand Theft Auto IV* when missions are engaged because it leaves the player vulnerable. A massive outdoor gunfight might have enemies spread all over the place trying to kill the player,

while one false move in front of a police officer forces the player to focus both on the goals of the mission and evading the pursuing police who will throw them off-course or end the mission. Liberty City tells a very different story about the use of space than our normal experience—it is a world where social norms are designed to be broken.

### **Metaphorical Architecture**

Architecture can be imbued with metaphorical connotations. By structuring, organizing, and enabling space, architecture represents experiences. George Lakoff illustrated the relationship between metaphors and body experience—typified by up is good, down is bad (Lakoff and Johnson 1980, 14). Marie-Laure Ryan discussed metaphors at work when children play, in which an object comes to represent an imaginative concept (tree stumps as bears) (Ryan 2001, 107). Video games take advantage of the power of metaphor to create meaningful places.

During one of *The Darkness*'s repeated loading scenes while Jackie is riding the subway, he describes the infrastructure: “When I was a kid, I used to look at the New York subway maps, and pretend it was a big old plate of spaghetti. All the lines were noodles, and the stations were huge meatballs. Heh, I told that to Uncle Paulie once, and he smacked me inna back of my head.” Here Jackie has given the structure of the subway system a metaphor related to his Italian heritage. It is an image that takes our assumptions of the subway as a well gridded course and reveals it as a tangled mess that represents the interconnected lives of people and places.

The small neighborhoods of *The Darkness* are designed to represent the intimacy of Jackie's personal world. Sending the player all over the city to accomplish tasks would

externalize Jackie's problems, whereas the local space represents Jackie's battle on a personal emotional level. It should be noted that the player does leave the space and enter a Hell-like battlefield during two sections of the game, but these expansive/directionless spaces sharply contrast with the intimate city experience. The winding corridors of *Max Payne* are realizations of Payne's journey into the depths of crime and corruption. The arrangement of navigational choices in *Deus Ex* do not only represent styles of play, but are tied into the philosophical choices in the game (Nitsche 2008, 44).

The bridge that connects Manhattan and Queens in *Ultimate Spider-Man* represents a transitional space between home life and work life. Peter Parker lives and goes to school in Queens, but has a job at the Daily Bugle in downtown Manhattan. The bridge is a unique piece of architecture in the game because it represents one space where Spider-Man does not have the freedom to move all over the landscape. Instead, the player must swing from the suspension poles or under the bridge to get from one island to the next. It is a rare example of constrained activity for Spider-Man and highlights the transitional space.

Kevin Lynch wrote, "the image of the Manhattan skyline may stand for vitality, power, decadence, mystery, congestion, greatness, or what you will, but in each case that sharp picture crystallizes and reinforces the meaning." (Lynch 1960, 9) This skyline stands strongly across the river from your starting location in *Grand Theft Auto IV*. The island of Algonquin is always within sight from the shores of Broker and its buildings represent the possibility of social and financial improvement. The bridges to Algonquin are not merely architectural features, but represent opportunities for new gameplay and for the character's narrative trajectory [Figure 22].



Figure 22

## Recurring Locations

### *Home Base*

One environment featured in a number of the games was the residence of the character whose utility, is, what we might call in play, “home base.” This place can be imbued with heavy narrative associations because of its familiarity. *Grand Theft Auto IV*, *Max Payne*, *Deus Ex*, and *The Darkness*, all contain some sort of apartment. Having detailed Max Payne’s home previously, I will focus on the other three games.

*Grand Theft Auto IV* uses what are known in the series as safehouses: home locations to which the player returns throughout the game. In *Grand Theft Auto III*, the same house was merely used as a save point—a one bedroom hole-in-the-wall apartment that the player did not actually enter. *Grand Theft Auto: Vice City* introduced a navigable safehouse in which the player could actually move around while *San Andreas* added more detail. The safehouse of *Grand Theft Auto IV* is actually not much different in concept except that the player climbs into bed and falls asleep to save their game (a

common trope from all video game genres). The player's safehouse in *GTA IV* changes over time, though previous safehouses (besides the first, which burns to the ground during the story) remain available for use [Figure 23]. While the importance of having a place to save the game was diminished because of the inclusion of an auto-save feature, having a place to return reinforces certain concepts in the narrative.



**Figure 23**

The repetition of this act throughout the course of a game was an easy way to establish a familiar place, but the safehouses in *GTA IV* provide little incentive for return visits. As such, I feel it was a squandered opportunity. While playing the game I realized that part of the reason I had trouble identifying with Liberty City at the beginning of the game was that I never felt like I was in one area long enough to get to know it. My strongest associations in both Vice City and San Andreas were my starting safehouse, but I had little attachment to Roman's apartment in Bohan. However, this serves to highlight an interesting distinction between my experiences with *Grand Theft Auto: San Andreas* and *Grand Theft Auto IV*: I connected more with my later apartments in *Grand Theft Auto*

*IV* because I had developed a sense of place over time while playing, improving my ability to identify with Liberty City.

The apartments in *Grand Theft Auto IV* reflect the progression of the character from poor immigrant to relatively affluent personality embedded among the corrupt individuals of the city. The first apartment the player encounters, which is owned by Niko's cousin Roman in Broker, reflects the tension the promise of a better life and the harsh reality that the American Dream is a difficult endeavor. It is a mismatched one-room apartment in a run down part of town. Dirty dishes are piled on the counter, bikini posters line the wall, and the bed is an unkempt folding couch. When Niko gets his own apartment in South Bohan it is hardly any better. While a little larger, it is still messy with many of the same characteristics of Roman's apartment. Returning to this location repeatedly to save the game reinforces Niko's social standing. The third location is the result of a choice the player makes: whether to kill one character or another. If they choose to kill Playboy X, they are awarded his penthouse in the north of Algonquin (Manhattan). This penthouse is a major change from the rundown apartments the player saw earlier in the game. It has a nice kitchen, a flatscreen TV in the livingroom, a pool table, a separate bedroom, and even an outdoor rooftop patio. While the functionality of the location does not change (it still is only used for saving the game and changing the player's clothes) it reinforces the changing fortune of Niko. If the player does not kill Playboy X, their only Alderney safehouse will be the Middle Park (Central Park) apartment purchased by Roman that looks much like the Penthouse. In either case, the environment of the safehouse changes in the middle of the game to show the rise of the character. However, this trajectory is negated by the final safehouse in Alderney. Given

to Niko by mafia member so as to keep Niko near to the crime family's territory, the mediocre apartment lacks the opulence of the Alogonquin apartments, showing that wealth is relative and that the player is subservient to the affluent mob. Although these locations have similar utility in terms of gameplay, they use their visual depiction to reinforce concepts in *Grand Theft Auto IV*'s storyline.

J.C. Denton's apartment in *Deus Ex*, which he shares with his brother, is represented as a transitional place between Denton's previous life and the new activities that have him in the middle of political turmoil. Unsure of how to feel about either side of the conflict, Denton is told by his brother to return to the apartment to fetch information. While there, soldiers looking for Denton raid the room and he must escape or fight. The excursion proves that familiar places are no longer safe and Denton must remain on his guard.

In *The Darkness*, the player never visits Jackie's apartment. Presumably, in the narrative, this is because the mafia thugs out to murder him would be looking for him at his house. But the player also gets the sense that Jackie doesn't spend much time at his apartment anyway—and even if he does he considers it more of a shelter than a home. The tension between public and private spaces is illustrated in Jackie's reaction to his girlfriend moving into a new apartment, which happens at the same time he becomes possessed by the Darkness. Despite his girlfriend's excitement, there seems to be something impermanent about the new apartment; the warmth in the scene comes not from the ownership of space but from their proximity as a couple [Figure 24]. During this scene in the apartment, Jackie's girlfriend asks him to sit with her on the couch and watch a movie. She turns on the television and begins to watch *To Kill a Mockingbird*. As they



are sitting there the player realizes that they can actually watch the whole movie if they so desire. The use of real world media forges a bond that ties the game world to the player's world. TVs in the game also show other videos including movies like *The Man With The Golden Arm* and *His Girl Friday*, television shows like *Flash Gordon* and *The Three Stooges*, and a handful of *Popeye* cartoons and music videos. Even if they are unfamiliar with some of the media on the televisions, it is apparent that they are meant to evoke a narrative environment connected to our own.



Figure 24

### ***The Subway***

The subway has two functions in games. The first, as discussed earlier, is a mode of transportation. The second is a place and space where game action takes place. The games I played used a variety of methods of representing the space: as an established cultural setting identifiable with New York, as a place whose visual design merely color its utility, as a classic video game dungeon, and as a labyrinthine corridor.

*The Darkness* made the richest use of the subway as a narrative environment. As mentioned previously, the world of *The Darkness* is accessed by two subway stops. These two stops—Canal Street and Fulton Street—lead to a handful of above ground neighborhoods, which are part of the life of Jackie Estacado and are each limited in scale. Because it is nighttime during the bulk of the game, the Canal and Fulton Street subway stations are not bustling hubs of commuters but rather home to an interesting group of characters. Jackie talks with some familiar faces and also meets a group of breakdancers, a crazy tourist lady, a few homeless people, a street performer, and countless others. These characters provide color to the environment and actually make the subway stops feel more alive than the darkened city streets. They are also non-threatening, which is coupled with the game mechanics' restriction that the player cannot engage Darkness powers while inside the subway stations.

Loading scenes between the subway stations feature videos of Jackie lit by a spotlight but surrounded by blackness—reminiscent of a confessional or police interrogation—telling an unidentified audience about his memories growing up. A number of these are stories of the subway and his fondness for it. After leaving the orphanage, it seems Jackie found the subway to be a home even though he had other places to live. This is counter-intuitive because public places like subway stations are generally viewed as Non-Places where the inhabitants are in “a state of perpetual transit” (Ryan 2001, 261). Yet, Jackie is in a state of perpetual transit, so his temporal experiences parallel those of the subway station and relatively align him with the spatial embodiment of the subway.

In *True Crime: New York City* every subway station looks the same. The only difference is the sign that indicates the station's name. The player is not expected to spend any time in the stations, which are designed for transportation utility only. This can be compared with *Grand Theft Auto IV*, which allows the player to ride the subway while coloring the stations with pedestrians and appropriate architectural designs with real New York City referents. Functionally, they are much the same as *True Crime*, yet because the subway is such a strong part of New York City's public image, the attention to detail is necessary for crafting a coherent narrative environment.

The subway in both *Max Payne* and *Deus Ex* serve not as transportation but the structural shape for guided movement. In *Deus Ex*, the subway not only represents a familiar space iconic of New York City, but it also simulates the video game convention of the dungeon. It uses some of the structural conventions of dungeon space as adventure and conflict. In earlier video games a dungeon is generally a location indicated by some entry point on a map that needs not represent the geography of the space once entered. However, in three-dimensional space the dungeon has real volume that needs to at least be perceived as fitting in the physical space it occupies. In *Deus Ex*, the player can enter the subway platform from a choice of entrances depending on their style of play (guns blazing through the main staircase or sneaking around back while shooting enemies from the airducts), and once they have cleared the area they return to the surface report their success. As I have described before, the space of *Max Payne* is a much more linear corridor-based trajectory. The subways platforms and tunnels are used to traverse space, while the train itself serves as a battering ram for *Max Payne* to get into the next area. The game largely relies on the service areas and offices, a part of the subway system not

experienced by regular riders. These are shown to be a handful of rooms deep and contain the equipment used in operating the subway that needs to be activated by the player to progress. This experience is quite opposite that of the normal expectations of the subway, in which there is no effort expended in a largely automatic process.

### **Restaurants/Bars/Diners**

One location that has been imagined in every form of entertainment media is the local New York eating or drinking establishment. For brevity's sake, these will all be referred to as restaurants in this discussion. The small restaurant of New York City is used as an institution; the restaurant is not a place of anonymity, but a destination for regulars. While they might not technically be third places to the player/character, their existence implies this. *The Darkness*, which is as much a game about the mafia as it is about evil super powers, has the players defending themselves inside a neighborhood Italian restaurant called the Olive Corner as mafia thugs assault the building from the outside. Also using the mafia genre trope, *Grand Theft Auto III*'s Italian crime family runs a restaurant out of which they conduct their illegal business. A level in *Max Payne* features a sequence where Payne goes to visit the restaurant of the mob boss he is warring with to make amends, but once deep inside the building the place goes up in flames and the player must flee. A mission in *Grand Theft Auto IV* requires that the player make an assault on a Korean restaurant, while *Deus Ex* sends the player into the heart of a dingy bar to get information. In all of these examples the private space of the restaurant, which invokes a sense of belonging or exclusion, is being violated either by those trying to harm the player or by the player themselves.

*Grand Theft Auto IV* introduced a non-violent game mechanic in the form of social missions. In these events the player would either receive a phone call or place a phone call to one of the many characters that had befriended Niko to participate in a social activity. These included grabbing drinks, playing a round of darts or bowling, visiting a strip club or a comedy club, or going out to eat. Developing friendships through these actions was rewarded by favors (taxi rides, weaponry, extra side-missions) made available to the player by the other characters. Characters also had preferences of activities they enjoyed—don't take your girlfriend to the strip club, don't take your rich friend to a dive restaurant, and don't take an alcoholic to a bar. These locations exhibited the traits close to that of real Third Places, although the socialization was with friends and not members of the community.

### **Landmarks**

The Statue of Liberty plays a symbolic role in a number of these games. With a sense of irony, *Grand Theft Auto IV*'s the tale of an immigrant's experience comes full circle to the symbol of America's open arms and opportunity. Under the thundering clouds of a dark night, the final mission of the game concludes with a shootout at the base of the Statue of Happiness; the camera takes away control from the player and pans up to show the monument standing strongly. The land of opportunity has turned into a land of violence and tragedy. *Spider-Man 2*, on the other hand, uses the Statue of Liberty as a symbol which must be protected. The villain Mysterio threatens to destroy Lady Liberty, so Spider-Man must make his way to the island to stop the UFO invasion. Liberty Island, previously unreachable by the player, now becomes accessible as Spider-Man web swings across the harbor using the floating robots as grappling hooks. He must defeat the

contraption constructed by Mysterio to protect one of New York City's most prominent landmark. Once the mission is completed, the cutscene reveals Spider-Man perched atop one of the points of the statue's crown, looking back at the island of Manhattan he must protect. It is one of the few moments in the game where the player is not situated inside the city. *Ultimate Spider-Man* has no way for the player to reach the island, which means collecting the landmark token for it is a matter of finding a spot at the edge of the harbor from which to view it. As mentioned earlier, *Deus Ex* opens with the image of a headless Statue of Liberty—a symbol of not only unstable government, but also the xenophobia felt toward people like the character JC Denton who are cyborgs.

Carol Duncan wrote about the museum as place of ritual (Duncan CCR 73), which is turned upside down in games like *GTA IV* where the sanctity of formal place is disturbed in a gunfire shoot-out. In that mission, the player goes to the Libertonian, Liberty City's version of the Museum of Modern Art. When the deal goes down badly, the artwork in the museum becomes nothing more than cover for the player. On a class field trip to the museum in *Ultimate Spider-Man*, Peter Parker's Spider Senses go crazy, indicating the presence of danger. He races outside and a battle ensues on top of the museum between he and Venom. These sequences force us to violate norms of social decorum demonstrated in museums.

*True Crime: New York City* chose to set its police headquarters in the middle of Times Square. This was advantageous on their part for a number of reasons. In terms of spatial exploration, it is easy to get on a major road and is located fairly centrally on the map. In terms of the narrative environment, though, it has strong evocative connotations as a cross-cultural metonymic representation of New York. *True Crime, Grand Theft*

*Auto IV*, *Ultimate Spider-Man*, and *Spider-Man 2* all had significant events located in their versions of Times Square. Spider-Man's fight with Electro in *Ultimate Spider-Man*, for example, was based on the villain's ability to draw electrical energy from the neon signs that plaster Times Square. The player had to smash all of the advertisements, signs, and bright lights to weaken the enemy. Not only was the environment highly evocative of implied Manhattan traits, but it also let the player destroy it as a cultural icon.

The narrative environment distinguishes places from one another, establishes context, draws on our expectations, and compliments spaces designed for gameplay. Close attention to the narrative environment is essential for the transformation of space to place.

## Chapter 6: Conclusions

### Successful Techniques

I have worked to identify the design techniques used to help players understand the cities of these fictional game worlds and forge meaningful bonds with the places depicted. In terms of spatial navigation, designers should be aware of the learning processes of players. Moving through space is dependent upon a range of possible actions and presenting all of these at once can be overwhelming and confusion. Instead of dropping the player in the middle of the action and expecting them to have full comprehension of the world, the experience of space can be learned in a series of scaffolding tutorials. These tutorials describe not only how the player can move their character, but teach how spaces are arranged and their expected uses. This applies to both expansive open world cities as well as specifically chosen component spaces.

Scope—in terms of physical size and the choices of what to represent—contributes greatly to the success of a place. Thought it might seem impressive, a big city that represents real world geography street-for-street is just an empty world unless it exhibits architecturally differentiated characteristics, compelling gameplay, and ways of transforming space into place. A single interesting street can be just as imaginative as a fully-fleshed out world. Designers should consider the way players divide, categorize, and construct mental models of spaces based on use over time.

Related to these mental models are the expectations the player has of how their control in-game is fitted to goals in space. Not only should they not be asked perform tasks the world cannot accommodate, but the design of the space should facilitate what



they are doing. This results in the transformation of space into the meaningful place of action. This meaningful place of action is complimented by a world that projects another level of meaning back at the player. This level represents an environment that exhibits strong characteristics, creating meaning by suggesting a coherent narrative and experiential structure.

More importantly than specific design recommendations, I have sought to prove there is a lot of potential for game designers to craft compelling places using frameworks from urban studies and cultural studies. By experimenting with these fields we can find methods and concepts that translate well to the digital environment. It also forces us to recognize the differences in the game and physical world.

## Other Cities

When mentioning the topic of this research, people have asked if I was looking at non New York cities as well. I chose to focus on New York City games to have a point of comparison across similar environments, but this research need not be limited to New York. It is not necessarily limited to just representational cities either. I have looked for some fundamental themes that could be applied to cities of many types, but also recognize that different designs have different demands. The use of a city in a role-playing game, massively multiplayer online game, or puzzle game could vary greatly from the games of this project, but I have tried to establish a framework for starting to analyze game worlds.

## Additional Areas of Inquiry

Psychogeography, the effect of the environment on people's behaviors and emotions, directly or indirectly influenced many of the writers whose works informed this research. While I did not focus on it specifically, the discipline of psychogeography presents a range of opportunities for analysis, especially in the visualization of experienced space as maps like Guy Debord's *Guide psychogéographique de Paris*. Debord's remapping of space cues another field applicable to the study of space: topology. Topology affords a bond between mathematics and geography, which is realized in video games as code and rule sets that can alter a space. Also related to this study, the encoding and decoding of space, and geometry and geography is the field of space syntax, which examines the relationship between architecture, buildings, space, and use (Hillier 2007).

My methodology led me to focus on the player experience of space, but I did identify one of the points in Lefebvre's triad as largely related to the designer's side of the game construction. Representations of space, as I noted, refer to the manner by which social and cultural understandings of space guide the conception and function of that space (Lefebvre 1992, 38). The realization of these understandings is executed in games by code. This code can determine underlying procedures, simulations, physics, visual appearance, rules, goals, and a multitude of other design elements. These elements are determined socially, culturally, and technologically. What does it mean when a game about New York City is made in a studio in Edinburgh, Scotland? How are the designers making decisions about how to model pedestrian movement? What technical resources do they have at hand to bring these spaces to life? This last question is tied to Platform

Studies, which looks at hardware and software design's effect on the works produced (Monfort and Bogost 2009).

Another area I chose to save for further inquiry is the effect of sound design in space and place. Sound is intimately integrated into what we usually consider a highly visual medium, and its execution produces a significant range of results (Whalen 2004). Games like *Grand Theft Auto IV*, *Tony Hawk's Underground*, and *True Crime: New York City* featured a deep catalogue of licensed music, while *The Darkness* and *Deus Ex* relied on original atmospheric soundtracks. The combination of music, sound effects, and voice produce soundscapes that help create the world (Nitsche 2008, 141).

## Extensions and Applications

While working on this project it was impossible not to imagine possible applications for my observations put into practice. The first of these, the concept of a single city space as a platform for many games, was in part realized when Rockstar North released *The Lost and Damned*. This game, downloadable on Xbox Live, took the Liberty City established in *Grand Theft Auto IV* and told the story of another character whose path crossed with the main *GTA IV* protagonist Niko. This had been done before by Rockstar, who produced *Grand Theft Auto Liberty City Stories* and *Vice City Stories*, but each of those made temporal shifts so that the world could be modified and updated.

While much of the same gameplay remains in tact in *The Lost and Damned*, the use of the space was changed through the game's reliance on motorcycles. Because the main character belongs to a motorcycle gang, the treatment of movement through the space is focused on the clustering of bikers riding together and the interaction of the characters while riding. Though Niko in *GTA IV* often had passengers to interact with while driving,

the physical act remained a solitary activity. The game's environment is also geared toward a motorcycle aesthetic, which reinforces the additional content's new narrative while not significantly altering the environment. *The Lost and Damned* has demonstrated the utility of reusing a game space, the player's bond with that place, and their existing knowledge of spatial navigation, while developing new mechanics and uses.

Our conception of the game city as a platform need not be limited to this kind of similar use, though. My research has focused on the way game spaces are crafted to fit gameplay mechanics and environmental expectations, but it is possible to imagine employing a range of techniques such that the city could be designed to accommodate different styles of play. It is my hopes that this project has indicated that multiple-use spaces are not just an amalgam of architectures (roads to drive on, buildings to swing from, railings to skateboard on) but are created through the careful crafting of a world that must negotiate many considerations.

In my discussion of maps I analyzed their utility for understanding the layout and distribution of space, but they still exhibit many deficiencies when it comes to place. Even when fitted to the needs of spatial navigation, the maps of these games were impersonal tools. The significance of maps to place-making has largely been ignored in games. We can experiment with maps that are altered through the use of space, rearranging themselves like Debord's map of Paris, or that are drawn based on player perception and produce maps like those of the earliest cartographers. Maps provide opportunities for us to develop and reinforce concepts of place, and the affordance of a digital medium like games allows us to manipulate and modify them.

Finally, the same processes of manipulation can apply to the game worlds themselves. While procedurally generated spaces are not new, they demonstrate remarkable potential that has yet been unlocked on a large scale. Our image of a space is developed through use over time. With this concept in mind, we can envision game cities that are procedurally altered, constructed, and deconstructed during the course of play. Imagine a store front of a city street that only materializes if the player stops to spend time in that area, a stretch of road whose surroundings are physically blurred because the player consistently speeds through it, a city whose space collapses around a landmark, or a homeless woman on a subway platform who disappears because the player has ignored her.

The city is an exciting place with boundless potential in game design. Both representational and fantastic cities have been depicted in countless games and have grown and evolved. It is my hope that this research complements the range of hard work that has gone into the scaffolding study of game spaces. In writing this I have realized the many opportunities afforded by the study of video game cities. But perhaps most importantly, I hope the questions raised in this research invite and provoke personal responses to video game spaces. As Lefebvre wrote, “social space is a social product,” and society is ever changing.

# Bibliography

## Works Cited and Referenced

- Bachelard, Gaston. *The Poetics of Space*. Boston, Massachusetts: Beacon Press, 1994.
- Bartle, Richard. "Alice and Dorothy Play Together." Essex, 2009.
- Bartle, Richard. "Making Places." In *Space Time Play*, edited by Friedrich von Borries, Steffen P. Walz and Matthias Bottger, 158-163. Basel: Birkhauser, 2007.
- Bjork, Staffan, and Jussi Holopainen. "Games and Design Patterns." In *The Game Design Reader*, 410-437. Cambridge: MIT Press, 2006.
- Bogost, Ian, and Dan Klainbaum. "Experiencing Place in Los Santos and Vice City." In *The Culture and Meaning of Grand Theft Auto*, edited by Nathan Garrelts, 162-176. McFarland Press, 2006.
- Borden, Iain. *Skateboarding, Space and the City*. New York: Berg, 2006.
- Borden, Iain. "Tactics for a Playful City." In *Space Time Play*, edited by Friedrich von Borries, Steffen P. Walz and Matthias Bottger, 332-334. Basel: Birkhauser, 2007.
- Bukatman, Scott. *Blade Runner*. London: BFI Publishing, 2002.
- Cosgrove, Denis. "Carto-City." In *Else/Where: Mapping New Cartographies of Networks and Territories*, by Janet Abrams and Peter Hall, 148-165. Minneapolis: University of Minnesota Press, 2006.
- de Certeau, Michel. *The Practice of Everyday Life*. Translated by Steven Rendall. Berkeley: University of California Press, 1988.
- Dimendberg. *Film Noir and the Spaces of Modernity*. Cambridge, Massachusetts: Harvard University Press, 2004.
- Ducheneaut, N., R. J. Moore, and E. Nickell. "Designing for sociability in Massively Multiplayer Games: An examination of the "third places" of SWG." Edited by J.H. Smith and M. Sicart. *Proceedings of the Other Players Conference*, Copenhagen, 2004.
- Duncan, Carol. "The Art Museum as Ritual." In *The City Cultures Reader*, edited by Malcolm Miles, Tim Hall and Iain Borden, 73-81. London: Routledge, 2004.
- Fernandez-Vara, Clara. "Labyrinth and Maze." In *Space Time Play*, edited by Friedrich von Borries, Steffen P. Walz and Matthias Bottger, 74-77. Basel: Birkhauser, 2007.
- Galloway, Alexander R. *Gaming: Essays on Algorithmic Cultur*. Minneapolis: University of Minnesota Press, 2006.

- Goffman, Erving. *Behavior in Public Places*. Free Press, 1963.
- Gotz, Ulrich. "Load and Support." In *Space Time Play*, edited by Friedrich von Borries, Steffen P. Walz and Matthias Bottger, 134-137. Basel: Birkhauser, 2007.
- Grand Theft Wikia*. [http://gta.wikia.com/wiki/Main\\_Page](http://gta.wikia.com/wiki/Main_Page) (accessed February 2008).
- Hall, Stuart. "Introduction." In *Paper Voices*. 1975.
- Hillier, Bill. *Space is the Machine*. Electronic Edition. London: Space Syntax, 2007.
- Iacovoni, Alberto. *Game Zone: Playgrounds Between Virtual Scenarios and Reality*. Translated by Gail McDowell. Switzerland: Birkhauser, 2004.
- Jakobsson, Mikael. "Activity Flow Architecture." In *Space Time Play*, edited by Friedrich von Borries, Steffen P. Walz and Matthias Bottger. Basel: Birkhauser, 2007.
- Jenkins, Henry. "Game Design as Narrative Architecture." In *Rules of Play*, by Katie Salen and Eric Zimmerman, 670-689. Cambridge, Massachusetts: MIT Press, 2006.
- Jenkins, Henry. "Narrative Spaces." In *Space Time Play*, edited by Friedrich von Borries, Steffen P. Walz and Matthias Bottger, 56-60. Basel: Birkhauser, 2007.
- Klien, Norman M. *The Vatican to Vegas: A History of Special Effects*. New York, New York: The New York Press, 2004.
- Kuttler, Dorte. "Tony Hawk's American Wasteland: New Functions of Architecture." In *Space Time Play*, edited by Friedrich von Borries, Steffen P. Walz and Matthias Bottger, 124-125. Basel: Birkhauser, 2007.
- Lakoff, George, and Mark Johnson. *Metaphors We Live By*. Chicago: University of Chicago Press, 1980.
- Lefebvre, Henri. *The Production of Space*. Translated by Donald Nicholson-Smith. Cambridge: Blackwell Publishers, 1992.
- Lynch, Kevin. *The Image of the City*. Cambridge, Massachusetts: MIT Press, 1960.
- McMahan, Alison. "Immersion, Engagement, and Presence." In *The Video Game Theory Reader*, edited by Mark J.P. Wolf and Bernard Perron, 67-86. New York: Routledge, 2003.
- Miles, Malcolm, Tim Hall, and Iain Borden. In *The City Cultures Reader*, edited by Malcolm Miles, Tim Hall and Iain Borden. Routledge, 2004.
- Monfort, Nick, and Ian Bogost. *Racing the Beam: The Atari Video Computer System*. Cambridge: MIT Press, 2009.

- Mumford, Lewis. *The City in History*. New York: Harcourt Brace Jovanovich, Inc., 1961.
- Mumford, Lewis. "What is a City?" In *The City Cultures Reader*, edited by Malcolm Miles, Tim Hall and Iain Borden, 28-32. London: Routledge, 2004.
- Munby, Jonathan. *Public Enemies, Public Heroes*. Chicago: University of Chicago Press, 1999.
- Naremore, James. *More Than Night: Film Noir in its Contexts*. Berkeley: University of California Press, 1998.
- Nitsche, Michael. *Video Game Spaces*. Cambridge, Massachusetts: MIT Press, 2008.
- Oldenburg, Ray. *The Great Good Place*. New York: Marlowe & Company, 1999.
- Pearce, Celia. "Narrative Environments." In *Space Time Play*, edited by Friedrich von Borries, Steffen P. Walz and Matthias Bottger, 200-205. Basel: Birkhauser, 2007.
- Pearce, Celia. "Story as Play Space: Narrative in Games." In *Game On*, edited by Lucien King, 112-119. New York, New York: Universe Publishing, 2002.
- . *The Interactive Book*. MacMillan, 1997.
- Ryan, Marie-Laure. *Narrative as Virtual Reality*. Baltimore: Johns Hopkins University Press, 2001.
- Sadler, Simon. *The Situationist City*. Cambridge, Massachusetts: MIT Press, 1998.
- Salen, Katie, and Eric Zimmerman. "'Game Spaces'." In *Rules of Play*, by Katie Salen and Eric Zimmerman, 65-70. Cambridge, Massachusetts: MIT Press, 2006.
- Sheller, Mimi, and John Urry. "The City and the Car." In *The City Cultures Reader*, edited by Malcolm Miles, Tim Hall and Iain Borden, 202-219. London: Routledge, 2004.
- Simmel, Georg. "The Metropolis and Mental Life." In *The City Cultures Reader*, edited by Malcolm Miles, Tim Hall and Iain Borden. London: Routledge, 2004.
- Steuer, Jonathan. "Defining Virtual Reality: Dimensions Determining Telepresence." *Journal of Communication* 42, no. 4 (1992): 73-93.
- Telotte, J.P. *Voices in the Dark: The Narrative Patterns of Film Noir*. Urbana: University of Illinois Press, 1989.
- Tuan, Yi-Fu. *Space and Place: The Perspective of Experience*. Minneapolis: University of Minnesota Press, 2001.
- Wark, McKenzie. "Atopia (On Vice City)." In *Space Time Play*, edited by Friedrich von Borries, Steffen P. Walz and Matthias Bottger, 452-455. Basel: Birkhauser, 2007.



Whalen, Zach. "Play Along - An Approach to Videogame Music." *Game Studies*. 2004.  
<http://www.gamestudies.org/0401/whalen/>.

Wolf, Mark J.P. "Space in the Video Game." By Mark J.P. Wolf, 51-76. Austin:  
University of Texas Press, 2001.

Zukin, Sharon. *The Cultures of Cities*. Cambridge, Massachusetts: Blackwell Publishing,  
1995.

## **Games Played**

*The Darkness*. Starbreeze Studios, 2K Games. 2007

*Deus Ex*. Ion Storm Inc., Eidos Interactive. 2000

*Grand Theft Auto III*. Rockstar North, Rockstar Games. 2001

*Grand Theft Auto IV*. Rockstar North, Rockstar Games. 2008

*Max Payne*. Remedy Entertainment, 3D Realms. 2001

*Spider-Man 2*. Treyarch, Activision. 2004

*Tony Hawk's Underground*. Neversoft Entertainment, Activision. 2003

*True Crime: New York City*. Luxoflux, Activision. 2005

*Ultimate Spider-Man*. Treyarch, Activision. 2005