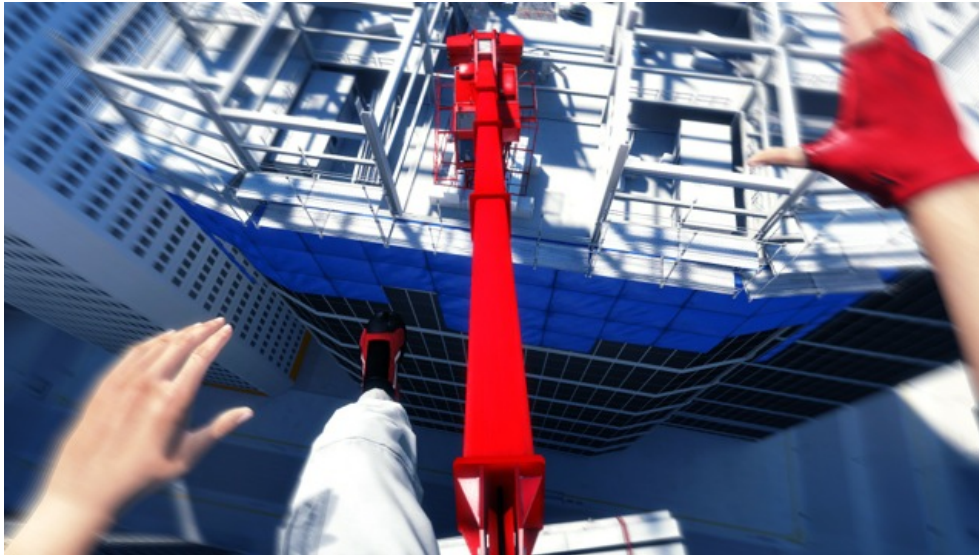


Moving Through Videogame Cities

By Bobby Schweizer

Three-dimensional videogame cities are neither static environments nor stationary views; rather, they are experienced through motion, action, and play. A player's movement, and the experience produced from that interaction with space, is one of the primary characteristics that should be considered when analyzing the videogame city. Emerging from urban philosophy that centers on the description of cities based on their use by people, players' interactions with the videogame city are the product of traversal and navigation (driving, climbing, flying) in conjunction with action¹ mechanics (shooting, talking, collecting, hiding). As architectural scholar Steen Eiler Rasmussen writes, "it is not enough to see architecture; you must experience it."² Rasmussen uses experience as a general design sense, not referring to any particular phenomenological truth but rather to perception through use. As Kevin Lynch recognizes, the "moving elements in a city, and in particular the people and their activities, are as important as the stationary physical parts."³ And our experience of a new place is not developed at a glance, but rather through durations of time in the space.⁴ The motility of the player's in-game body—the mechanics by which they are able to move through space—is the primary lens through which the structures of these mediated city spaces should be interpreted. This exploration of popular videogame city motilities demonstrates the significance of movement to the experience of designed spaces.



From the first-person viewpoint the player navigates their way fluidly through urban space. *Mirror's Edge* (DICE, 2009).

Architectural historian Edmund Bacon opens his seminal text *Design of Cities* with an emphasis on the primacy of spatial experience.⁵ Space connects human bodies to larger systems as our perceptions of the world deepen.⁶ The *experiential* is not only our phenomenological understanding or the narratives we construct about the city, but rather our situation-in and perception-of the urban. Michel De Certeau has also levied criticism against attempts at creating a totalizing viewpoint of the city, instead encouraging scholars to think about "walking in the city," as a reaffirmation of the long dominant urban experience. Mediated forms of the city provide insight into how mobilities operate and how videogames, in particular, create worlds that model how the city can be consumed as bodies in motion. Motility is the first property of mobility that sociologist John Urry uses to describe the structures of our modern built environment.⁷ Media scholar Eric Gordon references Deleuze's belief that the cinema's greatest power was not its ability to tell a story or represent an object, but that by "extracting from vehicles or moving bodies the movement which is their common substance..." it could depict "the mobility which is their essence." This essence of mobility "came to define modern life," writes Gordon.⁸ Unlike photography, which Gordon describes as being able to represent a space, film was able to represent change and motion over time.⁹ Not only did this extend to the subjects in the frame (the street corner animated by bustling residents on their way to work) but also to the camera's ability to move through space (the film camera's lens simulating the viewer's eye).¹⁰ In part, they are manifestations of our desire to conquer our environment, playfully breaking the boundaries which not only partition space but "provide structure to social relations [that] demarcate areas where people can perform different roles..."¹¹ Play in the physical city, according to Quentin Stevens, often takes place in special areas apart from everyday life.¹² Videogames, alternatively, can take mundane places and create new everyday lives that involve tracking down mobsters in a city park, nighttime street-racing for pink slips, following an assassination target stealthily through an alleyway, and combo-ing a series of rail grinds on inline skates. These are not merely four views of the same city, they are four entirely different urban worlds.

Mediascape is sadly no longer available online.

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Nazi occupied Paris becomes a city about moving around without attracting attention. Climbing buildings and sneaking through the streets are the motilities of resistance. *The Saboteur* (Pandemic, 2009).

Motility affects expectations of the organization of in-game activities: racing across town to break up a drug deal, climbing a building to get a view of the area, skateboard grinding a telephone wire, parachuting onto the roof of a moving subway car. It enables (or constrains) where the player can go and what they can do. Game designers often use space to guide the experience of important portions of games¹³ such that the organization of where activities take place significantly impacts the perception of space. Not only do players map spaces geographically, but more importantly, they map them in terms of activity flow (the juxtaposition of accessible areas and pursuit of game goals).¹⁴ Kevin Lynch explains the urban experience similarly, identifying the “pattern of a whole” as problematic:

“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.”¹⁵

Instead, Lynch poses hierarchy, dominant elements, and networks of sequences as the principle spatial constituents.¹⁶ Just as the architecture and arrangement of the space around us in the physical world influences movement, so too does the guiding hand of the game designer. The experience of the videogame city, then, is not an image of the whole but rather a series of movements through space. These games are not merely virtual worlds, but games with goals and direction that influence the player’s trajectory. Michael Nitsche observes that unlimited freedom of movement is not necessarily desirable, citing Tinsley Galyean’s discussion of narrative guidance that described tracks in game design as guided flow—a river that carries you in one direction downstream while providing freedom of lateral movement.¹⁷ If you provide some freedom of choice while giving trajectory, restriction can be a meaningful part of the experience.¹⁸ Georges Bataille, too, writes that space in games exists as trajectory.¹⁹ Player motility, as a product of the bodies (human and inhuman) that are inhabited in games, has the most significant effect on perceptions and interpretations of the videogame city.

Motilities

Motility refers to the player’s interaction with a space as embodied by movement mechanics. The player of *Grand Theft Auto IV* (Rockstar North, 2008) can control a pedestrian, an automobile, a helicopter, and a speedboat while the player of *Burnout Paradise* (Criterion Games, 2008) takes on a variety of cars. As a result, GTA’s Liberty City needs to accommodate all these kinds of motilities while *Burnout’s* Paradise City’s design needs focus on only one. GTA’s Niko Bellic needs to be able to enter buildings, plummet recklessly from off-ramps as a driving shortcut, and have enough access points from the water to the land in case the player jumps out of a moving boat. He can walk slowly or run quickly, he can climb up short ledges and ladders but cannot survive a multi-story fall, he can get into a car and can be run over by cars. The player in *Burnout Paradise*, meanwhile, needs wide streets and sweeping, rounded corners to accommodate the high speeds of the turbocharged sport cars. The production of the urban image is a complex process that involves the particular type of movement across the space. The bleakness of Batman’s *Arkham City* (Rocksteady Studios, 2011) or the unsettling sterility of the rooftops in *Mirror’s Edge’s* (DICE, 2007) merely provide color—instead, it’s the Caped Crusader’s Batline tether and gliding cape in *Arkham City* and Jade’s quick feet and long jump in *Mirror’s Edge* that actually characterize the player’s experience of the respective cities. Studying the practice of skateboarding, Iain Borden observes that “[a]ctions are important not for their production of things, but for their production of meanings, subjects, relations, uses, and desire.”²⁰ *Skateboarding, Space, and the City* is about the position of the marginalized skateboarder in constructing their space of interaction. 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...”²¹ By positioning players in a variety of bodies with different motilities, videogames allow us to explore urban space in imaginative ways.

Walking

The pedestrian vantage point is the typical motility of perception addressed in urban studies. Walter Benjamin took up Baudelaire’s *flâneur*, the city-dweller who experienced the sights and sounds of Paris with both rapt attention and an aloofness that ran counter to the forces of modern capitalism. Michel de Certeau’s chapter on “Walking in the City” from *The Practice of Everyday Life* perhaps most famously urges that the true meaning of the city is not as it appears from above, as an architectural form, but how it is experienced on the streets. 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.²² First, the “alethic” modality relates to the mood and intent of the movement.²³ Is the pedestrian taking the most direct route from one place to the next? Does their choice of route represent the multitude of possible spaces? And how are they negotiating the forces that are acting upon them? Secondly, “epistemic” modalities are concerned with understanding the space and these aforementioned possibilities. Lastly, “deontic” modalities refer to permitted, forbidden, or optional uses of space. Because these modalities deal with rules and choices,

they map well to understanding the videogame city.

Walking (and by extension jogging or running) is a motility shared by many games in which a player embodies a bipedal human. *The Darkness* (Starbreeze Studios, 2007) is primarily an on-foot game in which the city is constructed to a realistic scale that supports walking. This scale is experienced in the game by the width of the streets and sidewalks, which appear to be proportionate to the player, as well as the height the buildings and the size of things like doors. The more typical pedestrian movement also means the game has a system of transit in place (the New York City subway) to facilitate traversal of greater distances. In regards to the mobility afforded by the walking body, *The Darkness* also takes advantage of hidden spaces to reveal whole new areas. A single locked door in the subway station, once opened, can introduce a new place of play previously inaccessible.

Though not a game explicitly about cities, *Call of Duty: Modern Warfare 2* (Infinity Ward, 2009) illustrates another way in which urban environments are traversed on foot. The Rio de Janeiro favela that the player weaves through in pursuit of arms dealer Alejandro Rojas is used to convey the unexpected encounters that emerge from the limited visibility of densely packed buildings. Frances Hodgson writes about the "encounterability" certain spaces and paths afford: "it focuses on an investigation of the relationship between competencies and practices of individuals' path-making, the processes involved in path-making and negotiating encounters and the structures and geographers of encounters in the context in walking."²⁴ The favela is an unfamiliar space to most. These slums grow piecemeal when cheaply constructed houses are essentially built on top of each other to house destitute citizens in the mountainous outskirts of the city. Ignoring the social issues of the favela, game developers Infinity Ward turned the architecture into a city space to support fast-paced gunplay. The tight spaces meant being able to not only hide enemy militia around corners and in buildings, but also on the rooftops that form the favela's many layers. Eyal Weizman, in his essay "Lethal Theory," uncovers the ways in which dense urban architecture creates its own paths of encounterability.²⁵ In April 2002, units of the Israeli Defense Force in Nablus created what was described by Brigadier General Aviv Kokhavi, as "inverse geometry," that reconceived of the city not as streets and roads but as new paths created by destroying interior walls, ceilings, and floors to move between buildings without ever stepping foot in public space.²⁶ The "Takedown" mission of *Modern Warfare 2* is constructed with a similar militaristic sensibility—the strategy of moving on foot through and between buildings as a form of cover demonstrates the construction techniques used in favela slums. In the mission, the player is asked to recall a game strategy that has been internalized through years of militaristic play and externalized through the game-over consequences of deviating from the optimal path. As Hodgson writes of environmental barriers, boundaries and bereft spaces: "we read the environment, its form, its fabric, its history, the way it is being used to make decisions about the paths we want to make."²⁷ This is both true of real and mediated spaces.



Ducking between the city's densely connected buildings while under heavy gun fire. *Call of Duty: Modern Warfare 2* (Infinity Ward, 2009).

Max Payne (Remedy Entertainment, 2001), a game in which the player travels on foot, follows the classic video game structure of the level-based labyrinth. Scholars who have written about the arrangement of game space commonly refer to this kind of labyrinth or maze in their work. 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.²⁸ In the two-dimensional screen of cinema, the labyrinth is turned into the locations of action such as car chases, shootouts, and the linear arrangement of obstacles.²⁹ They are spaces with a single exit and single resolution. While some games follow this path, others employ a different arrangement. 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.³⁰

There are two views on the effect of the labyrinth as a structure of the city. One, identified by Baudelaire and Barthes, is the nightmare of the solitary maze from which we desperately seek escape.³¹ But on the other hand, Kevin Lynch believed we find value in the mystery, labyrinth, and surprise of the city.³² In his study of play spaces (physical and virtual) Alberto Iacovoni declared that we purposefully allow ourselves to get lost as a means of mental disorientation, making a game out of reorienting.³³ Navigating the maze familiarizes us with our surroundings as we learn to interpret the scene.³⁴ Spatial navigation is not a matter of finding one's 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. In *Max Payne*, the player moves on foot through buildings, alleyways, rooftops, and other close quarters, and these places are given individual characteristics to complement the tone of the game. Because the player is always moving forward, each part of the world is experienced in short duration. 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, producing an image of urban components but not the city as a whole.

While *Assassin's Creed* (Ubisoft Montreal, 2008) is often thought of as a game primarily about the rooftop acrobatics of parkour, it is as much about being forced to walk. The primary state of movement in the game is slow and methodical. Holding the analog stick forward on the controller doesn't cause the player to run but rather to walk quickly; running and climbing requires one of the controller trigger buttons be held down at the same time. Walking reflects the goal of stealthy movement: blend in with the environment (both the people and the space). Few other games force the player to move this slowly. Often, walking is used in *Assassin's Creed* as a means of trailing a subject, following them so they will reveal some information or waiting until they're alone to kill them where nobody will see. While deftly jumping between rooftops and scaling walls creates a city where typical boundaries

are no longer applicable, the prosaic act of walking normally subverts the player's exceptionalism. The player, in these cases, experiences the same streets as the wandering crowds of A.I. characters.



The player navigates their way through the sea of pedestrians. *Assassin's Creed II* (Ubisoft Montreal, 2009).

As *Assassin's Creed* illustrates, many games that have other forms of motility also include walking. The pedestrian world of *Grand Theft Auto: Vice City* (Rockstar North, 2002) is engaged when a car cannot access an area (the interior of buildings, narrow alleyways, rooftops), during gunplay, when objects need to be collected, or when moving between vehicles. When in a vehicle, the player is afforded a certain amount of protection by both the metal frame and the speed of the car, but Tommy Vercetti's body is rendered fragile when out in the open. For *Spider-Man* in a game like *Ultimate Spider-Man* (Treyarch, 2005), walking is again seen as a kind of vulnerability. Why walk when you can web-swing? *Tony Hawk's Underground* (Neversoft, 2003), for the first time in the series, used dismounting the skateboard and walking as a way of redirecting the usual forward momentum of riding to move between spaces and climb vertically.

Personal Vehicle

Sheller and Urry reinforce a criticism levied against de Certeau's focus on the pedestrian body: cities, especially American cities, remain rooted in automobile transportation and too often sociologists ignore the car in favor of walking.³⁵ They use the term "automobility" to describe the culture and practice of driving, and the resulting way of structuring space.³⁶ Because cars demand a lot of space, the landscape is dedicated to them. *Grand Theft Auto III* (DMA Design, 2001) and *IV* present similar modes of interacting with the New York City inspired space. 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—chasing other cars, driving characters around, picking up and making deliveries—as a holdover design 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 rundown station wagons to top-end sports cars, motorcycles, 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. The city of *GTA III* is almost entirely about the public space of the streets while *GTA IV* creates a city that suggests the thousands of 3D architectural models might have interiors. Despite their differences, both games produce a similar sense of spatiality—the places in between goals are often blurred in the imagination because they are passed quickly on the road.

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. Navigation becomes a matter of distancing oneself from the details of the world, recognizing landmarks or by following signage produced by the game's user interface. Nigel Taylor writes about this effect in the physical world:

"First, for people travelling on the road, and especially for those driving motor vehicles, the aesthetic experience of the modern city has become one characterized by signs as much as spaces. Secondly, people's experience of observing and moving amongst motor vehicles is an essentially depersonalized experience because (understandably) people typically observe moving motor vehicles primarily as inanimate objects and only secondarily as objects containing other people."³⁷

Sheller and Urry also write about the automobile'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. The vehicle produces a landscape not of buildings, which pass by quickly, but rather of corridor-like transit ways.³⁸ From inside the car, the roof overhead produces an artificial ceiling that conceals the height of urban architecture. Additionally, in order to drive safely in the city, attention is focused on the movement of other vehicles and traffic regulations. Videogame city architecture operates by a similar set of principles. It is common to disregard speed limits and drive in the opposite lane in order to move through the space quickly, and the consequences of crashing are usually minimal. The commonly used third-person point-of-view expands the visibility of the player beyond the interior of the car, though their attention still needs to be fixed on the road. These examples highlight the way transportation modes affect the experience of space and that non-pedestrian modes need to be considered individually.

True Crime: New York City (Luxoflux, 2005), which recreates Manhattan street for street, features a user-interface display at the top of the screen showing the current street and the approaching cross-street 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. This information makes it seem like the player should expect to learn an overwhelming number of street names, but in practice it encourages the development of mental models of locations based on landmarks, districts, paths, or (more often) reliance on the game's GPS-like map system. The names of things in these games—be they street or neighborhood—are largely inconsequential for understanding how the city works.

True Crime: New York City relies on the dispatch missions—interstitial goals and activities triggered by an outside force, as the player moves through space, that take place outside of the narrative missions—to occupy the player’s time. Dispatch missions are common to open-world games because they can populate the world with procedurally generated activities.³⁹ While driving around the city the player receives requests over the radio to respond to situations and arrest criminals. The player tracks down enraged drivers, subdues violent criminals, resolves hostage situations, and prevents robberies in progress. Significantly, the city’s structure and player’s motility affects their ability to respond to these requests. Because the game attempts to recreate realistic behavior and a realistic setting, it does not have the kinds of shortcuts built into the terrain often found in games of the genre. So, when a call comes over the radio about a robbery in progress at quite a distance in the opposite direction, the player cannot quickly drive the wrong way down a one-way street, cut through a yard, and jump their car onto a highway on-ramp. The demands of the game are not always matched to its mobilities, and can either be interpreted as a mark of bad design or, more favorably, procedural rhetoric⁴⁰ that demonstrates the difficulty of police navigating the city.

Games in which the player is only a vehicle—racing games like *Midnight Club Los Angeles* (Rockstar San Deigo, 2008), *Burnout Paradise*, *Driver: San Francisco* (Ubisoft Reflections, 2011)—can concentrate on the design of road paths meant to be zoomed through without worrying about the interplay of other kinds of movement. Paradise City is an entirely fictitious space, which allowed the developers at Criterion Games to build a city meant specifically for racing. Los Angeles and San Francisco, on the other hand, are adaptations of their real counter-parts that make adjustments to well-known streets that can support a kind of vehicular movement to which they are unaccustomed. Mitchell Schwarzer describes this perspective of space in *Zoomscape: Architecture in Motion and Media*. A zoomscape is an area of transformed architectural perception brought about by industrial technologies of motion and media.⁴¹ The freeway (or the long straight stretches of road that provide the video game equivalent) become zoomscapes of “linear expositions” as Appleyard, Lynch, and Myer describe in *View from the Road*.⁴² The anonymous buildings along the paths of these racing cities often only draw attention when they serve as (or are based on known) landmarks. When the player is embodied as a car and is moving quickly with these motilities, the image of the city cannot be fixed. Instead, the character of the city is developed through stretches of road and the repeated traversal of a single path.

Skateboarding

As Iain Borden writes in his history of the skateboarder and their body’s relation to space, the first skateboarders who surf-skated were concerned with “surface horizontality and its gentle curvature” and were “seeking to experience through the moving body the expansive stretch of tarmac in all directions.”⁴³ Having most often started as surfers, these skateboarders looked for spaces in the urban and suburban environment that mirrored the roll of the ocean.⁴⁴ Their eyes turned to the many empty pools of Los Angeles in the 1970s, developing “an empathy and engagement with the surface of the pool wall.”⁴⁵ The practice of skateboarding was first and foremost the art of found space and the delight of the body in motion. But the subcultures of the sport, the developments of new tricks, and improvements in equipment meant it could appropriate the urban environment, and in the 1980s street skating became the dominant form. Skateboarding as an urban practice is a kind of critique of the city.⁴⁶ As skateboarding legend Stacy Peralta describes it, “Skaters can exist on the essentials of what is out there [...] For urban skaters, the city is the hardware on their trip.”⁴⁷

Rather than attempt to modify Times Square to support vertical tricks and rail slides, *Tony Hawk’s Underground* constructs a fictional Manhattan composed of real skating landmarks arranged around a central core of buildings. Instead of representing the actual 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, and that also facilitate the linking of skateboarding moves. It has both elements of the purpose-built skatepark, which is intimately linked with the body-space of the skater,⁴⁸ and the architecture of urban space that presents “a plethora of buildings, social relations, [and] times and spaces.”⁴⁹ The appropriation of urban space in skateboarding is about presence and resistance, highlighting the spaces and architectural forms that are forgotten or ignored by the everyday city-dweller.⁵⁰ *Tony Hawk’s Underground* strikes a balance between structures designed to support the body in continuous motion and the significance of adapting non-playful urban spaces.

The skateboarding body travels perpetually forward because the design of the board does not facilitate sudden changes in direction. Kick-pushing the board can increase one’s speed, though in videogame physics the player’s body moves as though gravity and friction were mere guidelines. Grinding involves sliding the board either perpendicular or parallel to a narrow surface of some kind, often a railing or ledge. Through its impossible momentum, the extreme skateboarding videogame creates a space that can be dominated by the skateboard in motion. Surfaces for grinding are conveniently positioned in proximity to link together tricks, while vertical ramps almost always lead the player back into architecture on which they can do tricks.

Tony Hawk’s Underground also highlights the density of city space by using new goals to introduce spaces of which the player was unaware. For example, one of the first missions the player takes on is to help a local student whose belongings were 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 above the street level. The player uses the skateboarding body to scale a building, grind telephone wires, and perform 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. After doing this, the player is transported inside the building to see a vert ramp and rail heaven—a skatepark hidden inside an office building. From that point on, the player may freely enter the building to skate. This demonstrates that the city is full of opportunities for more intricate and extreme skateboarding.

By planning guided experiences through spaces, designers can surprise players with the transformation of familiar places. Goals in *Tony Hawk’s Underground*—like a collectible positioned up high—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’ antagonism to authority figures.

While the primary means of travel in *Tony Hawk* is a skateboard, *Underground* was the first in the series in which the player could dismount their board to walk, jump, and climb on objects. 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, precisely position themselves for a trick, 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.

Another extreme sports game, *Aggressive Inline* (Z-Axis Ltd., 2002), draws on the same design patterns as the *Tony Hawk* series. Fitting players with inline skates creates subtle—if perhaps only illusory—variations in motility. When skateboarding, both wheel trucks are parallel to each other. The board can roll left and right across its length, slightly changing the direction the wheels face to enact a turning motion. Inline skating, on the other hand, gives each leg more freedom to determine direction and force. A sharper turn can be made using one foot while balancing body weight on the other, making it easier to change momentum and lateral movement. As a result, the city skated through in *Aggressive Inline* features more tightly placed architectural features such as the concrete-surrounded tree planters that separate the road running through the city level. In form, however, the *Aggressive Inline* and *Tony Hawk* cities are nearly identical. Architectural features such as ledges and railings are laid out in such a way that the body in motion flows from one to the next, chaining moves to score combination points. *Aggressive Inline* also features impossibly smooth and rigid surfaces: the player transfers from a rooftop to grind a power line strung across the road. These spaces creatively adapt skateboarding practices to a world increasingly hostile to skaters. Anti-skating guards—pieces of metal affixed to common skating surfaces like benches and railings to prevent grinding—have dramatically altered the skater’s landscape.⁵¹ As Nick Riggle writes, “[t]o the extent that architects acknowledge the presence of skaters, it’s largely indirectly by trying to prevent them from

using the spaces they create. This results in, among other things, hideous architectural alterations intended to prevent skating.”⁵² Videogames cities are worlds that re-enable skateboarding mobilities.



An amalgam of San Francisco's landmarks and notable architecture, repurposed for downhill jamming on skis. Jonny Moseley's Mad Trix (3DO, 2001).

Skateboarding may be a familiar urban motility, but Winter Olympian *Jonny Moseley's Mad Trix* (3DO, 2001) again reconceives space by turning a number of real-world locations into ski slopes. The first of these game levels is prompted by the question in the game's opening video, "what if it snowed in San Francisco. This transformation of the city has some merit based on the geography of the peninsula that has some relatively steep inclines like Telegraph Hill, Nob Hill, and Russian Hill. Unlike other motilities, skiing is enabled by gravity and requires this sort of down hill course. But in order for the player to do tricks on ramps and rails, the city had to be taken apart and rearranged in a city which only gestures at being San Francisco. The player skis under freeway overpasses on impossibly wide streets, past representative housing facades, and winds up on the Golden Gate Bridge. Recreating the city could have given the developers a chance to have the player ski on and past notable landmarks, but what is evident in the final product is that the most significant aspect of the game's city was merely the spectacle of using it for downhill freestyle jamming. Here, the kind of freedom of movement expressed through skateboarding is contained by the rigid structure of skiing's reliance on gravity. San Francisco is no longer an open navigable space but rather a series of runs pre-determined by geography.

Aerial

While videogame characters often engage in super human activities—making impossible jumps, soaking up bullets in a gunfight, flying helicopters with no prior training—some characters have superpowers that drastically affect their motility. Superhero games based on comic book characters often give the player some aerial motility. Spider-Man web-swings between buildings, Batman glides, and Superman and Iron Man fly. Other characters like the Spider-Man villain Venom or Cole MacGrath from the PlayStation 3 game *inFamous* (Sucker Punch, 2009) possess the ability to scale vertical surfaces quickly. From these powers emerge perspectives on the city that widely diverge from the grounded viewpoint of the pedestrian, car, skateboarder, or skier. As Scott Bukatman identifies, the superhero reveals how "the city offers room to move."⁵³ Bukatman directly references de Certeau's "Walking in the City" to describe Spiderman's lack of place as a "trespasser" who is "making his own path across the spaces controlled by others."⁵⁴

Spider-Man 2 (Treyarch, 2004) and *Ultimate Spider-Man* (Treyarch, 2005) provide two similar examples of the body traveling through open-world cities. Spider-Man's motilities emerge from 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, produces a unique sensation of the body in motion. "Superman's magisterial gaze and Batman's profound urban knowledge were revised by Spiderman's more improvisational, sensational style."⁵⁵ To swing, the player directs Spider-Man's web shooters at the general direction of a building to attach to it and begins the swinging motion. Forward progression while web-swinging is enacted by shooting the web at an adjacent building drawing on the momentum of the current swing. While the physics of the swing do not always perfectly align to the player's intentions, the movement is consistent enough such that the player can reliably traverse the city. Much like its real counterpart, Spider-Man's Manhattan is largely orthogonal. By necessity of traversal, the geometries the web can attach to need to be uniform or else the player loses momentum or becomes stuck. Buildings in both of the *Spider-Man* games are composed of simple geometries and textures because the rate of speed at which the player is moving requires they be loaded from the hardware's memory quickly.



The player swings through the streets of New York City on the way to the next mission. *Ultimate Spider-Man* (Treyarch, 2005).

Spider-Man can also web-zip, a technique in which the player shoots a line of web straight ahead and pulls themselves quickly toward that point. This can be used on the surface level street to move faster, on the tops of roofs to help jump from one to the next, or on the sides of buildings as the player scales them vertically. Swinging and web-zipping are fast modes of movement: the player can travel at rates faster than the cars on the ground. These skills also re-orient the perspective of the player a city-dweller. Moving between two points along the streets of Manhattan requires making multiple turns, but Spider-Man's body is capable of ascending to the rooftops where he can follow a more direct route in which buildings are no longer barriers. The player learns a new language for traversing the city that extends from Spider-Man's motility, occupying familiar space in a new way.

Scott Bukatman criticizes the *Spider-Man* movies (on which *Spider-Man 2* game was based) for depicting a superhero body that demonstrates finesse without corporeal grounding. In musical films, Bukatman writes, there is a transformation between scenes in which the performer occupies a normal body and an expressive choreographed body.⁵⁶ Critically he observes, "after Tobey Maguire pulls Spider-Man's mask over his face, the figure onscreen literally ceases to be Tobey Maguire."⁵⁷ The computer-animated body detaches itself from our body's reality, which "has the unfortunate effect of severing the connection between the inexpressive body and the liberated, expressive one."⁵⁸ In contrast, the videogame—by embodying the player as a character like Spider-Man—reconnects the fantastic motion of the computer-generated image to the input of the player through the game controller.

While Spider-Man's web-swinging and web-zipping produces primarily lateral movement between buildings, the playable character of Venom in *Ultimate Spider-Man*, is primarily vertically oriented. He is able to leap to extraordinary heights and run up the sides of walls, pulling himself along with a whip-like extension of his suit. Though they occupy the same physical space, the city, as experienced by Spider-Man and Venom, are quite different. Spider-Man moves best between buildings, web-swinging his way to the next mission marker or trying to reach a group of thugs mugging a woman. When restricted to the streets, Venom's heavy body moves slowly while walking but bounds aggressively as he jumps great distances. Venom does violence to the city through his movement: the ground roars and shakes as he lands and the buildings produce a sound of glass being crunched under the strength of his limbs. The contrast between the deft acrobatics of Spider-Man and the violent, catapulting Venom illustrates how the good and evil sides of this comic book New York City exist.

The titular city in *Batman Arkham City* is portrayed as an island with a series of districts surrounding a restricted area. In the fiction of the game, the Gotham government repurposed the island to house the inmates of the overcrowded prison and Arkham Asylum, giving it a history that explains its different sites and previous uses. Most significantly, it differs from the structure of the previous Batman game *Arkham Asylum* (Rocksteady Studios, 2009) in its open-world structure. Whereas Batman used his gadgets and skills to reach new areas in *Arkham Asylum*, the grapple gun, Batline launcher, and gliding cape are used to traverse great distances in *Batman Arkham City*. Arkham's architecture is full of flourishes jutting out from the sides of buildings that provide grapple points for the player's tools. The grapple gun receives an upgrade in this game that boosts Batman's speed, allowing the player to slingshot into the air so that they may glide a greater distance. If *Spider-Man's* New York is about uniformity, Batman's Arkham is about disorder. The arrangement of the city reflects the chaos of giving prisoners space to roam, and it is only Batman's traversal and maneuverability that can restore order.

Both the *Spider-Man* and *Batman* games feature dispatch missions like those of *True Crime: New York City*. 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's (and the player's) obligation. 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 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. *Arkham City* also uses them both these reasons, while adding a narrative conceit of restoring order to territories.

More so than *Batman Arkham City*, *Gravity Rush* (Project Siren, 2012) is about flying through the city. The protagonist Kat is imbued with the power to change the direction of gravity's pull on her body. At the press of a button the player can cause Kat to float in the air, aiming a reticle at the direction they want as the source of gravity. Kat will go flying at a wall and the camera reorients itself to treat the side of a building as if the player were the ground. In order to provide more obstacles in this reoriented worldview, the architecture of the city of Hekseville uses complex geometries for all sides of its buildings. It also means that narrow corridors make it more difficult to enact gravity shifting and can provide challenges for the player, as demonstrated by a foot chase through an alleyway or combat sequences in enclosed spaces. Additionally, what makes Hekseville unique from most other game cities is that it is floating in the air as a series of districts connected by bridges and transportation infrastructure and held up by massive supports that vanish into the distance below. The player can jump off the edge of one district and reorient gravity to be upside down, traversing the sewer pipes that empty out into the vastness below and the beams that hold the city together. Kat's gravity altering motility enables a city that has depth and verticality with areas for residents that live below the streets but around the periphery of each district.

These soaring bodies are far removed from our experiences of the city. We have few methods of experiencing urban verticality outside of buildings; "flying squirrel" wingsuits gliders, urban base jumpers, and the extreme building-climber "Spider Man" Dan

Goodwin are among the few who have reoriented the city as an aerial endeavor. Videogames provide for fantastic forms of superhuman motility that changes the speed, scale, and height of the urban experience.

Climbing/Parkour

Mirror's Edge (DICE, 2010) The *Assassin's Creed* game series, *The Saboteur* (Pandemic, 2009), and *Mark Ecko's Getting Up: Contents Under Pressure* (Atari, 2006), represent examples of traversing across building geometries as a primary motility mechanic. Its movement is more grounded in reality than the superhero soaring through the air or the car racing through the streets, and yet it is a form of movement out of the grasp of most people. In this category, players traverse the world on top of and through built structures. It is a playful motility that reappropriates space similarly to skateboarding. Parkour, specifically, is an athletic activity in which the practitioner, on foot, treats the built environment as an obstacle. While running, walls, ledges, stairs, gaps, and gates are climbed, vaulted, and jumped between to demonstrate athleticism, balance, and control of the body. Typically, parkour is non-competitive and has no goals except to get between two points. As games have adapted the practice, it has been framed in terms of chasing, sneaking, and avoidance.

The city portrayed in *Mirror's Edge* exists in an Orwellian state and the player-protagonist Jade is a courier who free runs the rooftops of the city to deliver messages and packages. The stark whiteness of the city's exterior architecture has two effects. First, it conveys a sense of uneasy sterility, as if there is grime lurking under the polished surface. But more importantly, the objects that fill this space stand out visually. Beams suspended across two buildings illuminate the path by glowing with color, walls to be vaulted are bright orange, jump ramps stand out from a distance, and the exit door shines bright red. The experience of running through the city is at once improvisational and highly scripted. There is most often a single path (or slight variations of an optimal path) to take which may be obvious or obscured. Yet because the player inhabits a body with extraordinary physical talents it feels as if an effort has been made to find the proper path. Additionally, because the player must activate this body through controller input and movement, the experience of the city is about reading and interpreting the contours of the architecture.

Unlike *Mirror's Edge*, the parkour feats of the *Assassin's Creed* series are largely accomplished automatically by control mechanics that assist deft movement. The player holds down a button and Altaïr, or Ezio, or Connor (depending on the installment) performs tricks with ease. The same input controls scaling walls, leaping between rooftops, and swinging between bars. While the player is always on the outside of the physical structures of the city, it is as if they are able to run through them. The game has a system in place that takes care of the mechanics of the jump—where to jump to, how to land, where to move next. The player's acrobatic body proceeds through space much like the earlier reference to Eyal Weizman and weaponized penetrable architecture—proceeding through the space as if there were no physical barriers. Most often, the rooftops of these games are used for quick traversal of the space to counter the inefficiencies of the winding streets and paths of early cities like Jerusalem, Damascus, and Florence. An assassin should be able to move quickly without being seen and roofs are often unguarded. As such, these cities are designed with more points to jump to, ledges to cling to, and points on walls on which to hold. Ubisoft took inspiration from the densely packed buildings and crowded streets of early city settlements and created a range of urban environments that act as parkour playgrounds.

Climbing to specified vantage points around the city also lets the player create an image of the environment. The game indicates that from the top of these towers, church steeples, and guardposts the player is able to take in the surrounding view. Players then "synchronize" with the space and the area around them is filled in on their map. This process runs contrary to de Certeau's criticisms that it is not atop the World Trade Center that New York reveals itself but on its sidewalks and streets.⁵⁹ While perching precariously and synchronizing with the surroundings may not reveal much about the culture or people, from a mapping standpoint it is reasonable to assume that surveying a space creates an image of the geography and architecture. While the average person may be able to take the stairs or an elevator to enjoy the vistas of tall buildings, it's the acrobatic parkour mobilities of the *Assassin's Creed* protagonists that turn every ledge into a stepping-stone and every wall into a ladder.



Trane scales elevated subway girders to tag a surface with high visibility. *Mark Ecko's Getting Up: Contents Under Pressure* (Atari, 2006).

The year before *Assassin's Creed* was released, *Mark Ecko's Getting Up: Contents Under Pressure* made climbing a primary game mechanic. It is about the character of Trane who must sneak around the city's heights to paint graffiti in protest of an oppressive government. Mediating the practice and culture of graffiti writing, the game makes Trane an able-bodied young individual capable of climbing buildings and reaching precarious heights to paint inaccessible, and therefore impressive, places. Here, the freedom of movement enabled by the strong human body is equally as important to the construction of space as the act of resistance through art.

Another game based on climbing motility is *The Saboteur*. Set in Nazi-occupied Paris, the player takes on the role of a member of the French Resistance, spending much of the game sneaking around to avoid being spotted, detained, or killed by the soldiers that inhabit the city. Like the polygonal *Grand Theft Auto* games and others similar to those, *The Saboteur* makes use of multiple motilities including walking/running on the ground and driving. It also uses climbing buildings and moving along the rooftops as a form of defiance. Moving along the streets in the game means submitting to the rules of the Nazi guards: do not loiter, engage in suspicious behavior, trespass Nazi property, or brandish weapons. Thus, motility in these two cities exists simultaneously in the same space: one of which operates according to the mechanics governed by the Resistance, the other by the laws of the Nazi

occupation.

Each of these four examples use climbing on buildings and parkour-like athleticism as a means of avoidance and escape. Scaling walls and moving across rooftops is a way of transcending the rules that dictate accepted means of traversal; in all cases the player's actions are implied to be rightful, though illegal. They represent a form of defiance sited in the athletic body as a tool that enables mobility.

Non-Motile Mobilities

That being said, it is important to note that the player-character's body is not the sole means of enacting movement around the city. Many games use automated forms of travel, as "warp devices"⁶⁰—be they embedded in the world, like a subway ride, or a loading screen that moves from one scene to the next. These are non-motile in that the player is not controlling the body in motion, but they're related in that they are ways the player can traverse space.

The first two examples look at the ways that games cut together disjointed spaces. In Westwood Studio's *Blade Runner* (1997) adventure game, the player is moved between different (mostly static) scenes. The places in the city are not geographically connected and, as a result, the texture of the city must be formed narratively and visually. But even though the player is not in control of their trajectory, it is fitting for them to be embodied as the detective Ray McCoy—an archetype of the crime and film noir characters who often move through space in a similar fashion. In *Shin Megami Tensei: Devil Survivor* (Atlus, 2009), the player takes on the role of a team of kids trapped in a Tokyo quarantine zone who must use demons to battle with other demons. Tokyo is represented through a menu on the bottom screen and a map on the top. The menu allows the player to select from a list of places to travel (such as Shibuya, Akihabara, Shinjuku Train Station), but going to a place does not mean being embedded in a game world. Rather, unless there is a battle to be had at that place, each space is merely a text description that is displayed after choosing a secondary action option, like "Look around" and "Listen to people here." Like *Blade Runner*, the city is treated as a series of vignettes that reveal little about the construction of space. The world might present itself as Tokyo but because the player isn't moving their self, the actual Tokyo-ness of the space remains elusive.

Turning back to automated forms of travel that are grounded in game bodies, it is an unusual circumstance to have something else move the player in a game where they are normally in control. In *Grand Theft Auto IV*, the player can hop in the back of a taxi and direct the driver to a destination, choosing to either sit and experience the full drive or skip instantaneously to the desired location. Some cabbies will converse with Niko Bellic, while others just let the radio play. Sitting in the back seat, the player, in a first person perspective, can move their head around to look out the windows or over the front seats across the hood. Unlike other vehicles, which require concentration on the road, this provides an opportunity for the player to take in the sights of the city. While not meaningful in terms of the specific use of these traveled spaces, observation helps form a cohesive image of the city and its elements.



Niko Bellic takes the subway while the player cycles through camera views. *Grand Theft Auto IV*

Grand Theft Auto III and *IV*, *The Darkness*, and *True Crime: New York City* employ the subway as an actual transportation system. If so inclined, the player can move through Manhattan on the subway in *True Crime: New York City*. The same subway platform model is used for each of the many stops but 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 subway of *True Crime: New York City* has a disorienting effect that diminishes the legibility of the city. Every subway station looks the same in the game because 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 a technical glitch that doesn't 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.

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. This experience of riding the train is quite the opposite to everyday experience, in which the rider's attention is turned inward and the passing of the city goes unnoticed. 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 rotating series of cut-scenes of the protagonist Jackie Estacado talking about his upbringing and memories of the subway play, hiding the loading time between areas. The subway moves the player between the neighborhoods not connected by the surface streets, giving them more access than their pedestrian motility would allow.

The Urban Experience

Cities are complex in that there are many ways to interpret their form. As Lewis Mumford notes in the opening of *The City in History*, "no single definition will apply to all its manifestations and no single description will cover all its transformations, from the embryonic social nucleus to the complex forms of its maturity and the corporeal disintegration of its old age."⁶¹ Traditionally it has been considered as an architectural object whose character lies in the arrangement of streets, styles of buildings, and in its geography. But as James Donald describes:

"The *living* space of the city exists as representation and projection and experience as much as it exists as bricks and mortar or concrete and steel. That is why rebuilding the living city means taking account of this other sense of space."⁶²

When a videogame constructs a living city it abstracts much of the form that other architecture-centric disciplines consider. The videogame city can represent and project processes and aesthetics in a polygonal space, but the player's experience is a direct result of what they can do in the game. What they do, in turn, is largely dependent upon the body they inhabit. Michel de Certeau believed that walking was the primary interpretive mode of the city resident, but games demonstrate that this can be generalized to any embodiment that interacts with the world.

*Please note that all videos were captured by the author.

Endnotes

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