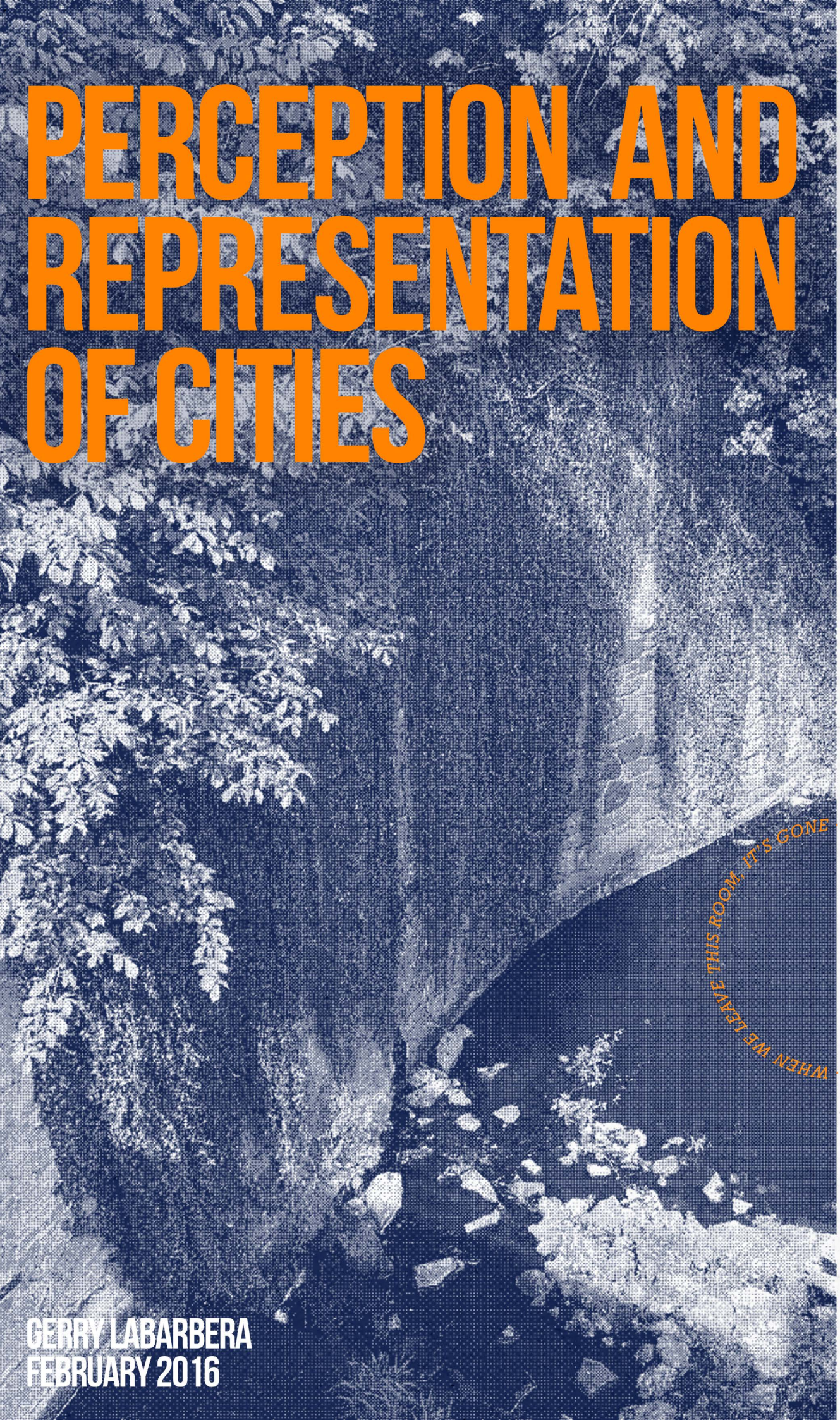
PERCEPTION AND REPRESENTATION OF CITIES



GERRY LABARBERA
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GERALD J LABARBERA
Prague College
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1 The Physical City

When a person thinks about a city that they have been to, or live in, they mentally summon an entirely subjective opinion about the place. They activate a group of generalized memories that have been marinated by time and emotions in their mind. A sort of visualization also accompanies these thoughts; an individual perspective of how the city looks and feels based on their own experiences. To understand why groups of people have such varying interpretations of a given city, one must consider what different individuals are experiencing within the boundaries of that environment. These internalized opinions are not only shaped by the occurrences one might face in any length of time, such as meeting residents of the city, eating street food, or having a drink at a local pub, but also by the physical shape and urban structures of the city that surrounds the person. The overall perception of a city is formed by the combination of a city's physical and social structures.

As long as human civilization has existed, there have been purposefully placed structures to centralize, shelter, and protect intentional or spontaneous communities. Fast-forward through thousands of years of development, this practice becomes a specific field called urban planning, and it is an important factor in the evolution of a society. The term urban planning is used to describe the planned physical structuring, organization, and layout of cities for the purpose of successful inhabitation, and when practiced as a career, "a dynamic profession that works to improve the welfare of people and their communities by creating more convenient, equitable, healthful, efficient, and attractive places for present and future generations" (American Planning Association, 2015). While tribal settlements, villages, and other types of human habitats were conceived organically during the Paleolithic period, research has proven that settlement planning has existed since the earliest indication of organized human activity. The process has been evident since the 3rd millennium BC, as it can be observed in Minoan, Mesopotamian, and Egyptian civilizations. There has even been suggestion of grid-pattern street layouts from that time, while residential sewage systems have been found in archaeological digs around the Indus Valley, proving that ancient societies had some level of understanding of public health and sanitation, as well (Angelakis and Rose, 2014). When examining major moments in the history of organized civilizations, one will notice an evolution from the focus on defense and territory, to luxury and celebration of identity and built culture. While looking further into the developmental goals of a fixed society, whether they are intentional or not, one may observe key factors of specific eras through built city structures and their purposes. City remnants of certain eras suggest a focus on large walls built to keep intruders out, while selections from other eras may indicate a focus on layouts of streets with the intention of making policing easier, and daily civilian life more efficient.

The Romans had a notable method of consolidation in their city-planning routine that was aimed towards military defense and civil convenience, including an organized separation of class which was thought to be common sense. The general format of their cities included a centrally located forum and city services area, surrounded by grids of streets, leading to a defensive wall on the outer perimeter (Ellis, 1992). They had diagonal streets across the grid to shorten travel times and create more convenience and movement within the grid. The residents of these cities had a strong sense of safety within their walls, whilst knowing that what they possessed was at the top of societal development at the time. The best example of urban planning in the Hellenistic period is Alexandria, masterminded by Dinocrates who had been commissioned by Alexander the Great. Alexandria was extremely influential in developing the Roman's distinguished style in city planning (Marchettini et al., 2014).

With the increasing number of cities rising in Europe throughout this period, agricultural industries grew steadily in conjunction. "The population of Western Europe increased rapidly and the utilized agricultural area grew with it. The agricultural areas of existing villages were extended and new villages and towns were created in uncultivated areas as cores for new reclamations" (Bartlett, 1994).

By looking at examples of cities during the Renaissance era of Europe, we can gather what types of threats they were protecting themselves from, and the aspects of society they were celebrating as well. "In Renaissance Italy, artists and designers joined in the broader humanistic assertion that society could and should be shaped by human ideals. Hemmed in by the tangled, narrow medieval streets around them, they became fascinated with ideal cities, imagining serene and unpopulated spaces, out of time and out of any real place" (Grant, 2012) Many Vitruvian inspired city plans were discovered from this time period proving true to this sentiment (fig. 1). An example of an intricate city set up would be the Florence Star Shape, which was constructed with the purpose of resisting long distance attacks such as cannon fire (fig. 2). In this type of plan, radial streets would extend from the center, which would usually house the heart of any military, spiritual, and community establishments (Giedion, 1941). This was near the end of the era when cities were being designed as major hubs with a focus on defensive militarized structures and layouts. The foundation that held these cities together was the powerful government based on religion and culture. Agriculture during the renaissance witnessed vast improvements with innovations such as cross plowing which created more food, less fallowing so time became plentiful, and even hydraulic machinery used to optimize soil conditions (Brown, 2009).

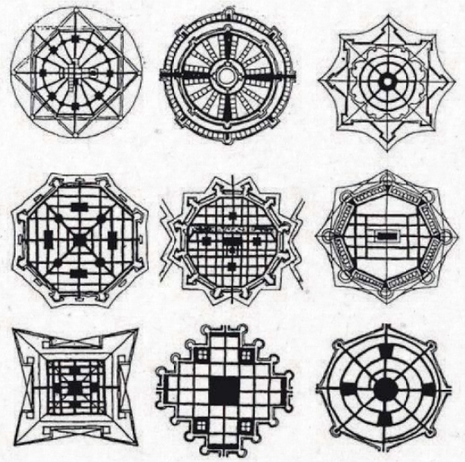

fig 1. Ideal Vitruvian Cities (Kuilman, 2013). Examples of ideal city plans in the Renaissance era. Seemingly more decorative and designed rather than functional, we see some of these shapes in Renaissance age cities.

fig 2. Palmanova from above (Art Travel, 2014). A real life example of the Florence Star Shape city plan, structured to withstand canon fire, with an emphasis on a centralized military and religious community.

Through the analysis of Enlightenment-era cities in Europe, it is evident that the desired presentation of a city had changed from the previously sought strong and intimidating fort, to fruitful and culturally rich community. In this period, there were ambitious reconstructions of cities to show off culture and riches of the given nation. Examples include Lisbon, catalyzed by a 1755 earthquake, and Paris starting in 1852, where major renovations allowed for more sanitary conditions, better aesthetics, military movement, and policing through the city (Girouard, 1985). One would think that living in these capital cities where the respective nation is pouring money into art, culture, and architecture, would feel quite special, although it is important to remember that the quality of life was much worse for a lot of the population and the class differences were great and marginalization was quite simply a social norm.

After riding through periods of evolving technological, mechanical, and social innovation, urban planning and development production thrived in the modern era. The industrial revolution pushed countries into a state of transition from rural and fragmented dwellings separated from centralized cities, towards large areas concentrated with populations working people. There are many movements that rose out of this period, stemming from factors such as overpopulation and space utilization, quality of life for working folks, and even environmental sustainability.

The Garden City movement was enacted in the attempt to decentralize the working environments within the city centers, and to create new and better-quality living space for factory workers through creating settlements. Ebenezer Howard was the father of this movement (Howard and Osborn, 1965). According to Howard, an ideal Garden city would house 32 thousand people on land of about 6 thousand acres. There would be easily accessible open communal spaces, public parks, and radial boulevards extending from the center of the garden city. “Linked by railroads and canals and separated by a permanent greenbelt, the Garden Cities would offer the best of both town and country life to their 32,000 residents, including employment in factories and workshops, affordable rents and abundant open space” (Grant, 2012). Howard envisioned a cluster of garden cities as satellites per central city of 50 thousand people (fig. 3).

The first attempt at creating a Garden City was in the United Kingdom, in a plan made for a town called Letchworth, built in 1899. America had the same movement, and in response to cars in the early 1900s, neighborhoods started to pop up, as seen in Radburn, New Jersey, which some consider to be the first reactionary town during the introductory period of cars (fig. 4). The aims of the Garden City Movement was to allow better living conditions for a large number of people who wouldn’t have had the opportunity in a city or otherwise, which shows how people in these planning positions were already taking into consideration on how structuring and placement affects populations of people. The profession of urban planner as we know today did not truly exist until after courses for the degree began at University of Liverpool in 1909 (Encyclopaedia Britannica, 2015).

fig 3. Group of Slumless Smokeless Cities (Howard, 1947) A diagram depicting Howard’s ideal structuring and layout of Garden Cities, including detailed numbers for an ideal execution.

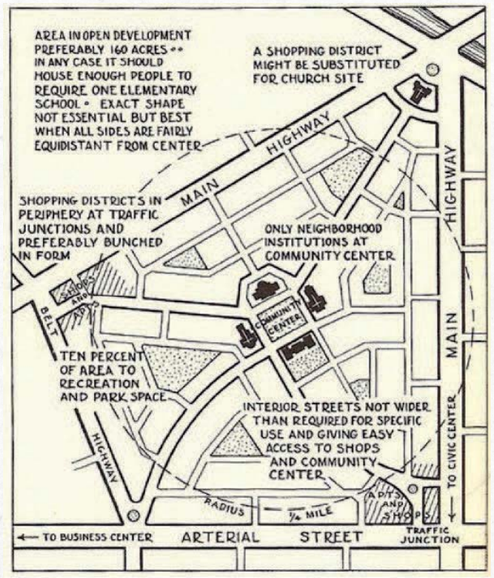

fig 4. Neighborhood Unit (Perry, 1929) A diagram of a neighborhood plan, stemming from Howard’s Garden City concept, on how cars could be introduced into the urban / suburban setting focusing on communal, space, and population.

The following era in the evolution of the urban planning industry is known as modernism, which had a great deal of influence on the early to mid-20th century. A few important names that help to define this period include the French-Swiss architect, Le Corbusier, and his two most famous city schemes, the Contemporary City and the Radiant City. In 1922, Le Corbusier created plans for the Contemporary City, which would be famous for it’s involvement of sixty-story skyscrapers, central transportation hubs, and it’s ability to house 3 million people. He planned for his idea to be materialized in the North districts of Paris in the 1930’s, but to no avail. The Radiant City was another influential plan concocted by Le Corbusier, which was a somewhat reformed version of The Contemporary City, as he had abandoned some of the class stratification from the earlier plan. Housing in The Radiant City was to be assigned based on family size and not economic class (Encyclopaedia Britannica, 2016). The ingenious compartmentalized city plan allowed for sectors dedicated for living, transport, business, etc.

“The Radiant City and the modernist vision it encapsulated had a powerful impact on the planning and building of cities in the 20th century. Its promise of light, air and open space directly addressed the prevailing concerns about crowded urban slums, and its separation and rationalization of both land use and traffic promised to protect people from the threats of pollution and automobiles” (Grant, 2012).
Some of his plans and ideas were used as inspiration for public housing projects in both the UK and the USA. Not only were his ideas inspirational, but they also became internationally known as his students went on to plan cities such as Brasilia, Bazil, and Zlín, Czech Republic.

There is an aspect of living in the modern world that urban planners focus on today much more than they had in the past, and it is the continuously alarming matter of sustainability. With issues such as pollution, global warming, natural resources, and renewable resources in the headlines almost daily, it is understandable that planners are addressing these matters in their designs. To address the environmental issues, planners must think of ways to limit car usage, conduct less garbage and waste out of designate waste carriers and zones, less energy usage, etc. (ASLA, 2016) These types of measures may annoy or pose as an inconvenience to some residents of a given city, but most populations recognize the change is for the greater good and are proud of their cities for such innovation.

2 The Living City

While examining planned cities of the past and imagining the daily lives, thoughts, and perceptions of the residents, one must also consider those cities in which planning processes had been absent during construction. An example being Gurgaon, India, where there had been no planning, and is essentially an island that is extremely privatized by companies, while only being 15 minutes away from New Delhi. Most of the city services and management is dealt with by the US government through the corporations located there, with no official public transport or sewage services besides the hired crews, and the absence of a local Indian government due to distrust of the corrupt. While seemingly exciting, there are quite a few complaints about the crowd control, the lack of public transport and properly maintained infrastructure, the dangers of the suburban local population, and most importantly, the cold and lifeless sentiment surrounding the lack of community (Goodyear, 2011).

An important facet of the anatomy of an urban city is the demographics, or the details of the human life within the physical boundaries of the city. There are a few aspects of human populations that highly affect social landscape and atmosphere of neighborhoods within a city. The most easily recognizable pieces are ethnicities, religions, socioeconomic statuses, education, and more. These factors not only define aspects of neighborhoods within a city, but also can be quite limiting to some diverse populations of people, compared to the majority norm. A paramount time to research the patterns of population movement in, out, and within cities is during periods of industrialization and modernization within a given country, as the movement is often driven by economic factors.

A term used within the field to describe the increase of people moving into cities is called urbanization, but in some cases can also be referred to as 'rural flight.' Rural flight occurs after industrialization of agricultural processes, in which the size of the rural labor market is decreased, which goes hand in hand with the development of a society in terms of increased technology, fewer jobs in the rural area due to the mechanization, and the movement labor demands from agriculture to other more current industries within the cities (Bianco, 2015).

With the rise in population in a city, demand for products, services, and especially land rises as well. Due to the rising price of land, people are shifted to different areas of town depending on their socioeconomic status (Madrigal, 2014). Race and religious factors can separate these groups even further, and through these long subconscious processes, the neighborhoods of a city are born.

There are many reasons why a diverse city could be split into various neighborhoods defined by ethnicity, religion, or other cultural factors. Whether it is a matter of heritage-rich locations based on the history of the town's settlement, or a sense of rejection from a majority of the city from diverse ethnic populations, separate neighborhoods are formed. While there are specific offices and officials that are dedicated to creating and maintaining a sense of community within all neighborhoods, it is common for some populations to be unintentionally left behind if those offices aren't trained in or aware of specifics, but this is a very unfortunate occurrence, as people feel marginalized and can change the direction of growth in a given community.

"The role of propinquity in social interaction is discussed along with the role of neighborhood as a status symbol…Residential segregation is also a means, through its role in circumscribing contacts, by which the continuation of the stratification system is ensured in the next generation. In conclusion, it is noted that the isolation of racial minorities in the disadvantaged parts of the city poses a danger to social stability" (Morgan, 1984).

Governments try to bring life back into their city centers with strategically planned museums, performing arts centers, and art districts to bring populations together. What starts to happen as society progresses and recognizes the need for a cultural understanding of all populations is that governments, planning committees, and policy makers are addressing the diversity through cultural activities, parades, fairs, and other events that spread knowledge and understanding and bring variation and excitement to the otherwise isolated streets (Grodach and Loukaitou-Sideris, 2007).

As countries become more developed, aspects within the country allow for better quality of life. We can witness this in an event called suburbanization, in which factors such as better infrastructure may allow people to move out of the center of cities and live in homes on bought property. The United States had a very large suburbanization movement after World War II, when military families were getting support from the government to build new lives. This movement increased even further during the 50's when highways were built, and cars became more affordable.

One interesting thing to note about this large exodus would be the overwhelming difference between the actions of heterosexual families, versus the members of the queer community. Many historians familiar with the LGBTQ history of the United States recognize World War II, more so it's ending, as a catalyst for much of the freedom and acceptance queer culture experiences today. The war had taken much of the population of the country and disrupted the norms of daily life, putting both men and women into highly gender-segregated jobs and living quarters. Match the new living arrangements with the highly emotional times of a country being at war, many of the people displaced began to experiment emotionally and physically with their same-gendered support systems. After the war was finished, those who felt as though they needed to explore their queerness and could also afford to choose their own arrangements without causing any unwanted attention,

chose to live in the central urban communities of cities upon return to normalcy. This allowed them the freedom to live as they had learned to love. These concentrations of LGBT identity within cities started to take root and an underground culture was born and strengthened, changing the mental landscape even further, with the addition of the traditionally deviant experiences (Bronski, 2015).

While development, communal growth, and familial luxury are important parts of suburbanization, they are not the only ones. Unfortunately, negative factors such as racism can contribute to the abandonment of cities. An example of this would be in the United States after World War I, much earlier than the migration due to city-suburb connectivity, when the first “Great Migration,” occurred, and around a million African Americans moved from the south, to the northern cities (fig. 5). The interpretation of the new arriving population of minorities in the cities became one of fear, as people contemplated whether the large cities were now dangerous and increasingly apt to crime (Dodson and Diouf, 2016). Major white populations left the cities in an attempt to find peaceful, quiet homes where families could raise children safely, in a movement which urban planners and researchers call “white flight,” and have attributed these moments of suburbanization in the past to contemporary environmental racism in societies today (Pulido, 2000). The educated minorities were able to get good jobs, which made changing class a possibility. Because of this fact, not only were white laborers afraid of job competition, but the added populations of educated people made everyone apprehensive about their employment status. At the same time, housing was becoming scarce as well, with minorities and immigrants fighting for even the worst of available housing. Through the years, movements happened and laws were passed that eventually institutionalized the racism, limiting money going to certain neighborhoods and city sections, mostly inhabited by minorities (Dodson and Diouf, 2016). Overtime, these neighborhoods and housing projects became isolated, as were the populations within (fig. 6,7). It is understandable why the inhabitants of these neighborhoods perceived a distinct separation from the rest of the city, because it is the reality of the situation due to marginalization, and the physical and social disconnect from the majority population over decades.

The last key to the puzzle of structural urban planning leading to the mess that is demographic trends and movement within cities, is the act of gentrification. Gentrification is the process of turning dilapidated neighborhoods into more presentable versions of themselves, through renovation, and most notably, pushing everyone besides the target audience out. One can observe the beginning of a gentrification process with an appealing group arriving in poor and inexpensive areas -- people such as artists, students, and others that improve the perceived social landscape. As the given neighborhood seems more marketable to those who value such a lively but cheap atmosphere, the demand for housing increases, and developers wait until they can sell the atmosphere to the mainstream public, with a hefty price tag on it. Not only are residential aspects affected, but small businesses are replaced by nationalized, or even globalized companies (Renn, 2013). Once this happens, poor families often leave the areas due to rising prices and generally feeling out of place amongst the vast amount of newcomers.

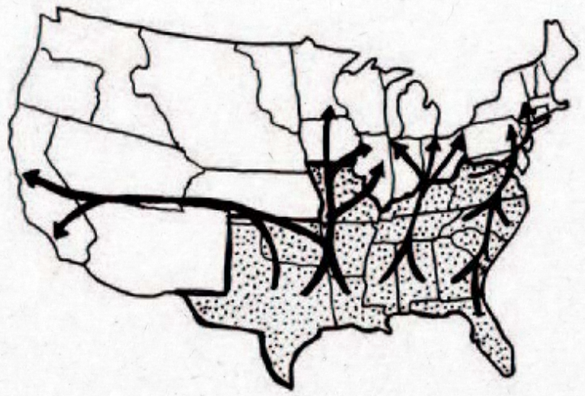

fig. 5 The Great Migration (BLD, 2016)

fig 6. Public Swimming Pool - White Only (1931) Exclusivity in the mid 1900’s was obviously a very strong factor in segregating people not only physically, but mentally, emotionally, philosophically, more ways than one can count.

fig 7. Student Protesters of Brown vs School Board (AP, 1954) White students protesting the civil rights movement in desegregating schools. The unwelcoming messages were loud and clear.

3 The Perceived City

The lengthy evolution process of civilizations growing from tribal villages into functioning urban masses is a feat in and of itself, while the ever-improving conditions and fight for equality among populations remains active, though it is important to recognize the effect on the human lives within these movements. The interaction between the physical structuring of a city as well as the movement patterns of the people, are what truly shape the experience one will have in a given environment. The resonating perception that one has when thinking about a city is not imagined, but a cognitive factor of the mind and is actually used in the planning field through scientific research and social theorization. Multiple theories created by researchers and planners alike link together in relevance to form the idea of the perceived city as being something automatic and unplanned, but perfect for aiding the process of expansion and creation of new social environments. The perceived city is something that each individual participates in creating, as every person traverses, experiences, and adds to the atmosphere in different ways.

People often live their daily lives within their cities thinking that the buildings and structures that surround them are just parts of a large concrete container in which they inhabit. While it's true that people use their surroundings to live in the city physically, they may not realize how much the urban environment influences them mentally and emotionally. In the 1940's, Kurt Lewin toyed with a concept about social and physical surroundings creating a force field within which people live their lives. He came to call this force field a lifespace. This was the beginning of the idea that people and structures interact with each other to create an over all experiential atmosphere, in which they build their own realities. Lewin described a lifepace as '...dynamic and changes over time, across spaces, and with experience; as such, people change over time as well. In effect, people and space are connected and co-produce one another rather than exist as distinct, autonomous entities" (Lewin, 1943). He also theorized that one's personality, motives, and general demeanor were shaped by their fully developed lifespace. Consequently, scientists and theories have emerged over time that inadvertently agree with his assertion of co-production of physical space and a person's individual experience.

When discussing how a person will react the social and physical aspects of an area, one must consider the interaction of the individual's personal space with the area in question, and others. Robert Sommer, a psychologist, had the idea that personal space is the psychological comfort zone in the immediate area surrounding a person, and hypothesized that this personal space changes shapes and sizing depending on location and situation. Studies involved intruding peoples' spaces, resulting in Sommer theorizing that psychological and social needs are involved with human spatial interactions. (Gieseking and Mangold, 2014) Researching this idea, Sommer's experimentation proved his hypothesis correct in that emotion based on surroundings changed a person's level or size of comfort bubble, thus, altering the reactions that people have to a given location.

An essential theory that demonstrates the relevance of the perceptive city is a process of urban discovery called derivé. Guy Debord aimed to challenge conventional patterns of exploration, using unplanned drifts through the city based on misreading maps and responding mostly to psychological cues such as mood and feelings– calling this process of internally directed navigation psychogeography. Debord was a member of an international group of creatives and artists called the Situationist International, and they sought to redefine modern architecture and city planning. "The city, they argued, was constituted from the bottom up by the experiences of individuals. They cultivated resistance to the soullessness of the modern city through play, serendipity and aimless but open wandering" (Grant, 2012). The Situationist International was primarily focused on Debord's psychogeography concept in their early years.

When examining these various theories working with the same similar concept, one may begin to understand how urban setting is something created by interaction. The environment is something that people participate in creating and defining. Depending on where someone is, their comfort zone adapts, resulting in the personal sense about an area. Walking aimlessly through a city allows for these reactions to happen within people differently. Successful urban planning allows for people who are navigating a city use their personal comfort level, adapting to ambiance of an environment, to steer them through a city on their own individual path correspondingly. Taking into account that spatial knowledge exists; the question of how people maintain their own city perceptions arises.

In order to understand these theories, it is important to visualize them. The process human beings use to think about space and the ways in which they act upon those thoughts in daily behavior is

called cognitive mapping (Tolman, 1948). Researchers Stanley Milgram and Denise Jodelet asked participants to make hand drawn maps, which they termed mental maps in an attempt to assemble the perceived mapping that Parisian residents have of Paris. They were to draw the city from memory, which allowed researchers to examine ways that people traverse the city, where their central hubs were, and what they found important enough to draw. This work reveals how these maps steer our actions, and illuminates how we received and process information. It is a confirmation that perception of an urban environment can be defined as the interpretation of surroundings based on a mixture of sensory response, involvement, and memory. "Knowledge of the spatial environment, the way in which we visualize and symbolize it, is a consequence of our experience in it and with it" (Downs and Stea, 1973). Mental maps can be used to build cities with the average resident in mind, but also to help understand the demographic, and mental reaction the structure will have.

Using cognitive mapping techniques and mental maps in the urban planning industry is an essential way to help planners build an efficient city. Planner Kevin Lynch focused on the physical surroundings and highlights of a city; ones which were interpreted and remembered by the residents and allowed them to navigate efficiently according to their daily lives. Based on 3 main US cities, Lynch created 5 key characteristics of urban environments: paths, nodes, landmarks, edges, and districts (Gieseking and Mangold, 2014). By asking residents to draw maps of their cities from memory, while using his key, Lynch was able to use the mental maps to gain both qualitative and quantitative data (fig. 8). The main reasoning for his research was for planners to be able to design cities that cater to the residents' experience and to recalibrate a given cities legibility. Through all of these processes and crosses between social science and quantitative data mapping, we can learn, in reverse, about the affects of social and physical city structures and their affects on daily life.

"These maps can be described as subjective understandings of spatial reality, which are determined by the individual's position, perspective, and range of movement. They represent the world as it appears to the respective observer. A cognitive map helps the human to get his bearings in his spatial environment. It "reflects the world as some person believes it to be; it need not be correct. In fact, distortions are highly likely" (Downs and Stea, 1977).

Certain minority ethnicities have been proven to have a less broad mental map of the city due to their centralized experiences in their specific neighborhoods and lifespace, while majority populations seem to have much larger roam over the city, and thus, a larger and more accurate mental map. "Such territory looks larger and better explored in the drawings of children from a socially advantaged area, who picture a dense network of after-school "enrichment" activities and friends' homes. In contrast, children, mostly migrant, from a socially disadvantaged area depict rather few places for spending time after school, one of the most important of them being a free-access youth club." (Den-Besten, 2010) Children have been a fantastic population to obtain maps from and compare to each other, as was done in Boston during 1967 with three minority youths (fig. 9). Another factor that may determine the accessibility one may have to a larger lifespace is gender. Although improving, gender bias remains true and limiting depending on the culture of a given population, and location of the lifespace in question (Orleans, 1971).

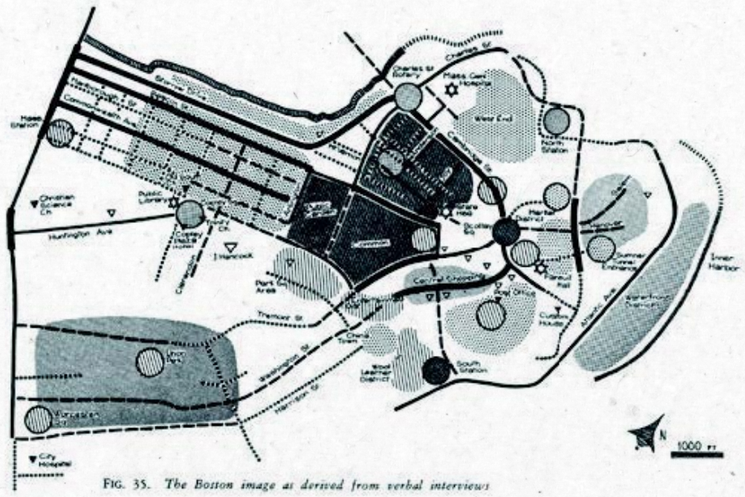

fig 8. The Image of the City (Kevin Lynch, 1960)An example of Kevin Lynch's mapping technique including his key of paths, landmarsks, districts, edges, and nodes. Lynch would obtain important information using the key in his map requests with residents.

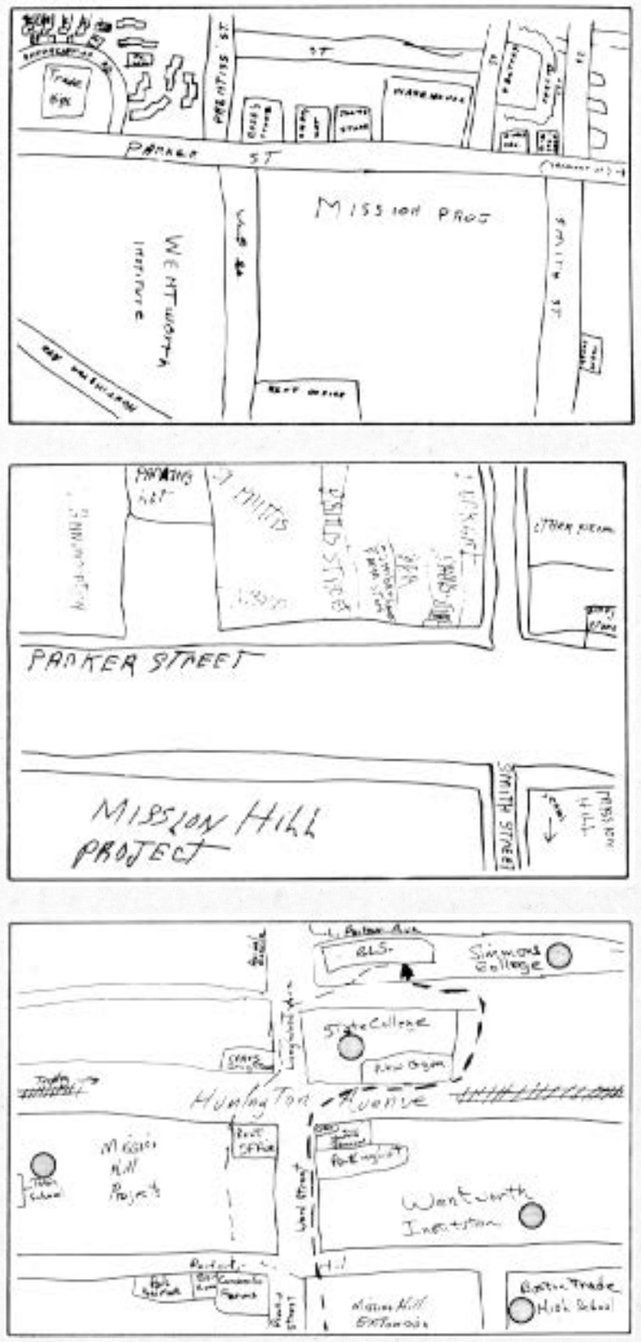

fig 9. Mission Hill Mapping (Ladd, 1967) Mind maps of non-white children living in the same boston neighborhood during the late 1960's. Comparing the maps, one may realize how much of a different experience was had by each child.

An interesting way to examine a contemporary narrative of cities based on the interpretations of youthful residents is through the Judgmental Map's Internet presence. In a humorous way, people upload these maps displaying the most straightforward stereotypes of each neighborhood according to how city residents interpret their experiences within them (fig. 10, 11). Based on the success of this collection and the many maps being produced, people are finding humor in the extremely brutal honesty, or judgments, made in these maps. A thought-provoking comparison to make with the judgmental maps of today, are the unintentional-judgmental maps of yesteryear. Charles Booth took an early look into social cartography while examining the inhabitants of London. He nonchalantly categorizes the classes of the neighborhoods, with similar color-coding for similar classes, and upon studying the map, one may understand his findings rather easily (fig. 12). While reflecting on the physical and demographic features of cities and how they affect populations, it is impossible to ignore some of the language being used to describe specific residents of the city. Judgmental maps on the internet represent some neighborhoods as "you will die if you go here" "retired senators with trophy wives" or "guns and drugs" the language is something easily identifiable as satire, while in Booths maps, entire populations are called crooks, and can be identified by savage lifestyles and habits, and those were the popular opinion of the time. "The lowest class, which consists of some occasional labourers, street sellers, loafers, criminals and semi-criminals. Their life is the life of savages, with vicissitudes of extreme hardship and their only luxury is drink" (Charles Booth Online Archive, 2016). Whether it is the intentional humor on the judgmental maps or the institutionalized classism within Booth's map, they are useful to look at to see the unofficial names and labels of the areas in comparison with natural environmental factors as well as landmarks and centers of the given cities. Whether a city's neighborhoods are distributed between monuments, parks, or four-lane streets, it is impossible to ignore the affects that a number of structures have on separation of demographics and populations.

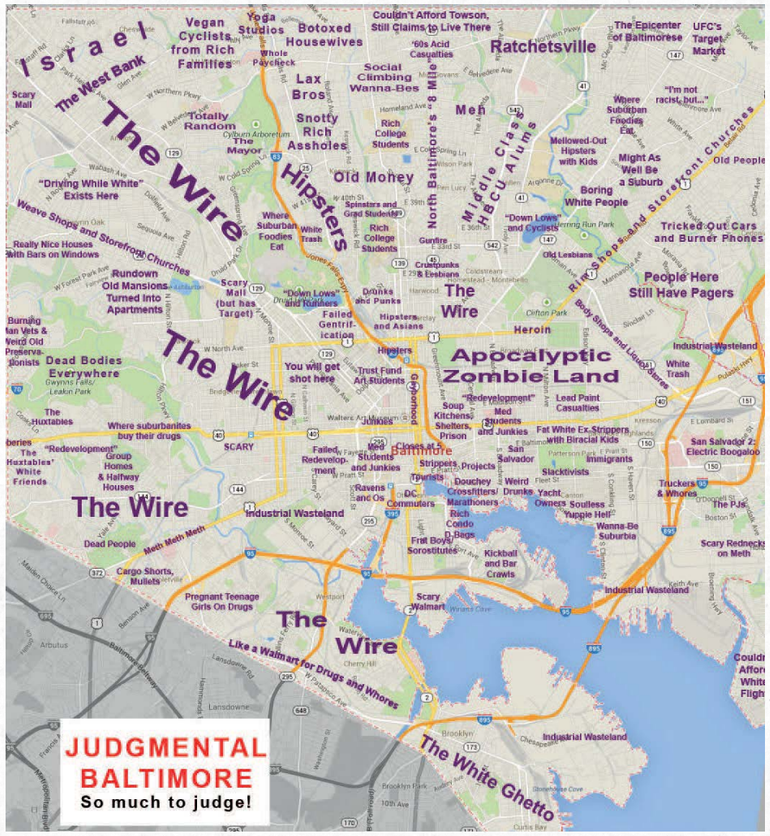

fig 10. Judgmental Map of Baltimore (Judgmental Maps, 2013). A look at the class stratification of Charm City through the lens of residents.

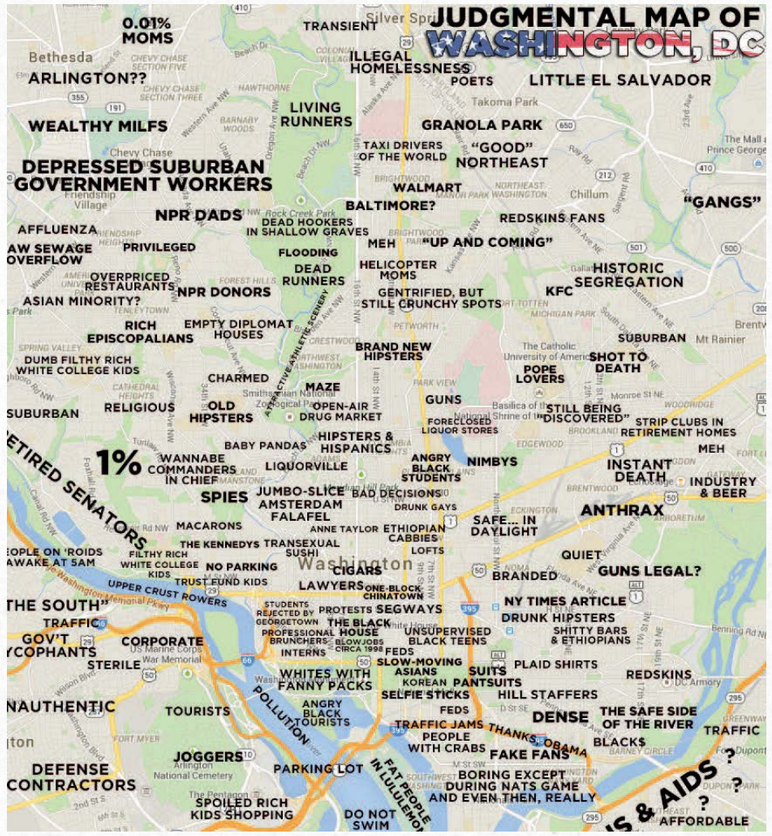

fig 11. Judgmental Map of Washington, DC, (Judgmental Maps, 2015). The nations capital has neighborhoods at both ends of social and economic status.

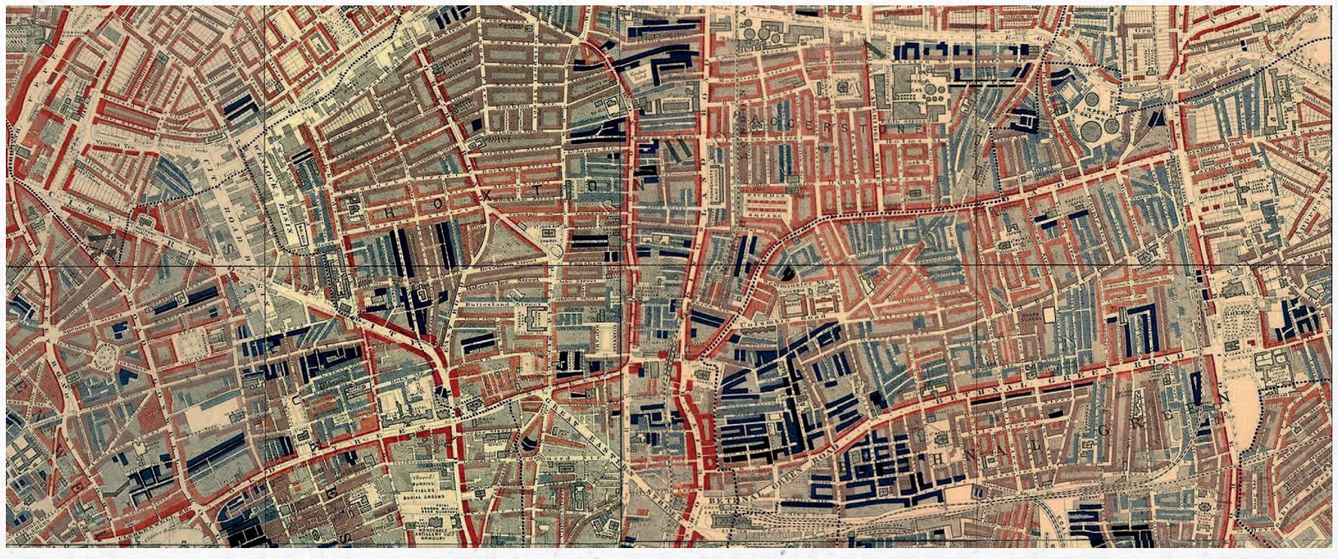

fig 12. Descriptive map of London Poverty (Charles Booth, 1889). An excerpt of his most famous map, and of his now cringe-worthy social mapping vocabulary, with the black streets being home to what he describes as a savage population.

An excellent way in which one can witness the perception of cities validated through visual representation is the unsolicited art works that arise from a pop-cultural background. As people learn about themselves and their cities, some find ways to represent their interpretations through artwork. Through art, the viewer is at the hand of the artist's interpretive style, so it may be difficult to decipher, but still valuable as visual cues lead to meaning within the context of the given perception and the environment to which it refers.

Whether an artist who has depicted an urban setting means to invoke any aspect of science in their work, the piece itself becomes a mental map of sorts. An artist that pulls from both architecture and engineering is the collagist and sculptor Stephen Talasnik. "Talasnik is particularly interested in the process of invention… he seeks to pay homage to the history of building and transportation. Primarily intrigued with structures defying gravity, he invents, through drawing and sculpture, engineering infused with curiosity for the otherworldly" (Marlborough Gallery, 2016). Talasnik's work is reminiscent of mechanical blueprints, but at the same time, streets and city structures. His sculptures vary from animalistic machinery pieces, to three-dimensional versions of his collages. In essence, his work mimics his outspoken interest in urban co-existence (fig. 13). Other artists have found vast other media to promote their ideas of city structure and perception. One architect turned famous quilt-artist named Valerie Goodwin has a portfolio of quilts that portray abstract urban landscapes (fig. 14). Goodwin describes that the physical world around her, and the architecture of the urban environment is the inspiration for her use of color, lines, geometrical relationships, patterns and ordering principles, with a heavy emphasis on density (Goodwin, 2016). Artist Eszter Bornemisza makes similar pieces from Hungary, invoking the same themes of urban perception (Yde, 2016).

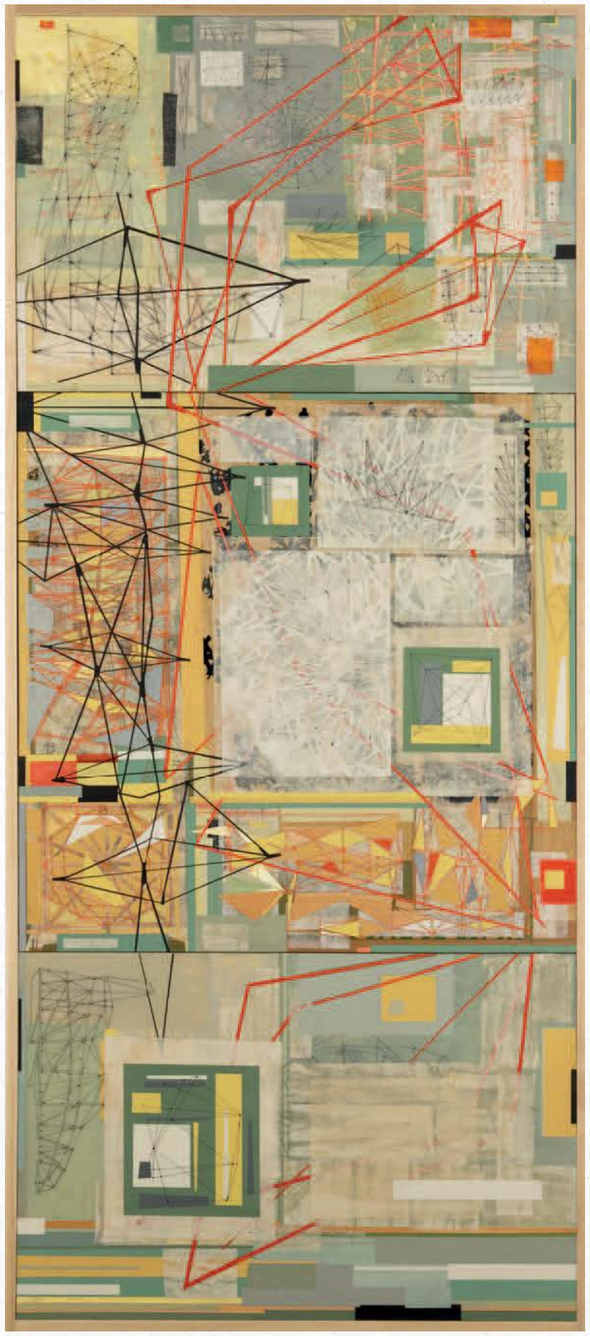

fig 13. Red Tower (Stephen Talasnik, 2009) An acrylic collage piece staying true to Talasnik's professed interest in architecture, engineering, urban perception, and gravity.

fig 14. City Grid III (Goodwin, 2007) One of Valerie Goodwins most famous quilts, an exceptional example of her vibrant and bold color vs line usage in her absraction of urban space.

While cognitive mapping and mental maps remain strong in the urban planning field for research purposes, one may find very similar visual information through unintentional versions of the very same phenomenon. Examined alongside the scientific method of cognitive mapping, certain visuals can be instrumental in discovering a way to keep a consistently updated public perception of a given city, allowing those outside of contained cognitive mapping studies to brainstorm on the given city's issues. One art project, which stands out in terms of the presentation of qualitative information, is that of Mapping Manhattan (Popova, 2016). Harvard freshman Becky Cooper prepared the project after her first year of university in 2008 when she constructed the blank Manhattan maps in a fluke accident at her internship. This pushed her to start thinking about what constitutes a map, and after doing some research, she decided that an individual decides what is important enough to map for themselves, mostly based on their emotions and experiences. Thus, the project started and Cooper collected more than 300 personalized emotion maps, including examples from big names such as Yoko Ono and Neil deGrasse Tyson. Visual representation coupled with the topic of the given person's urban and social landscape, unsolicited cognitive maps are made (fig. 15). With the illustrations of Manhattan explaining personal interpretations of space and the emotions evoked within those spaces, there is a great deal of data representing emotion, consciousness, and even ethnic identity available.

Personal interpretation and perception of a city is caused by experiencing the physical and social structures that are working behind the curtain, reacting with human consciousness on a number of levels. By looking through the physical evolution of urban planning practices, examining the demographic trends and movement of people through time, and finally the visual representations of people's memories and experiences compared to theories of environmental psychology or psychogeography, one is able to connect with the idea in terms of the concluding internal reaction. These visual representations, coming in the form of visual art, mental maps, Internet memes, and more, provide ample data involving the accessibility, relevance, and ambiance of an urban environment.

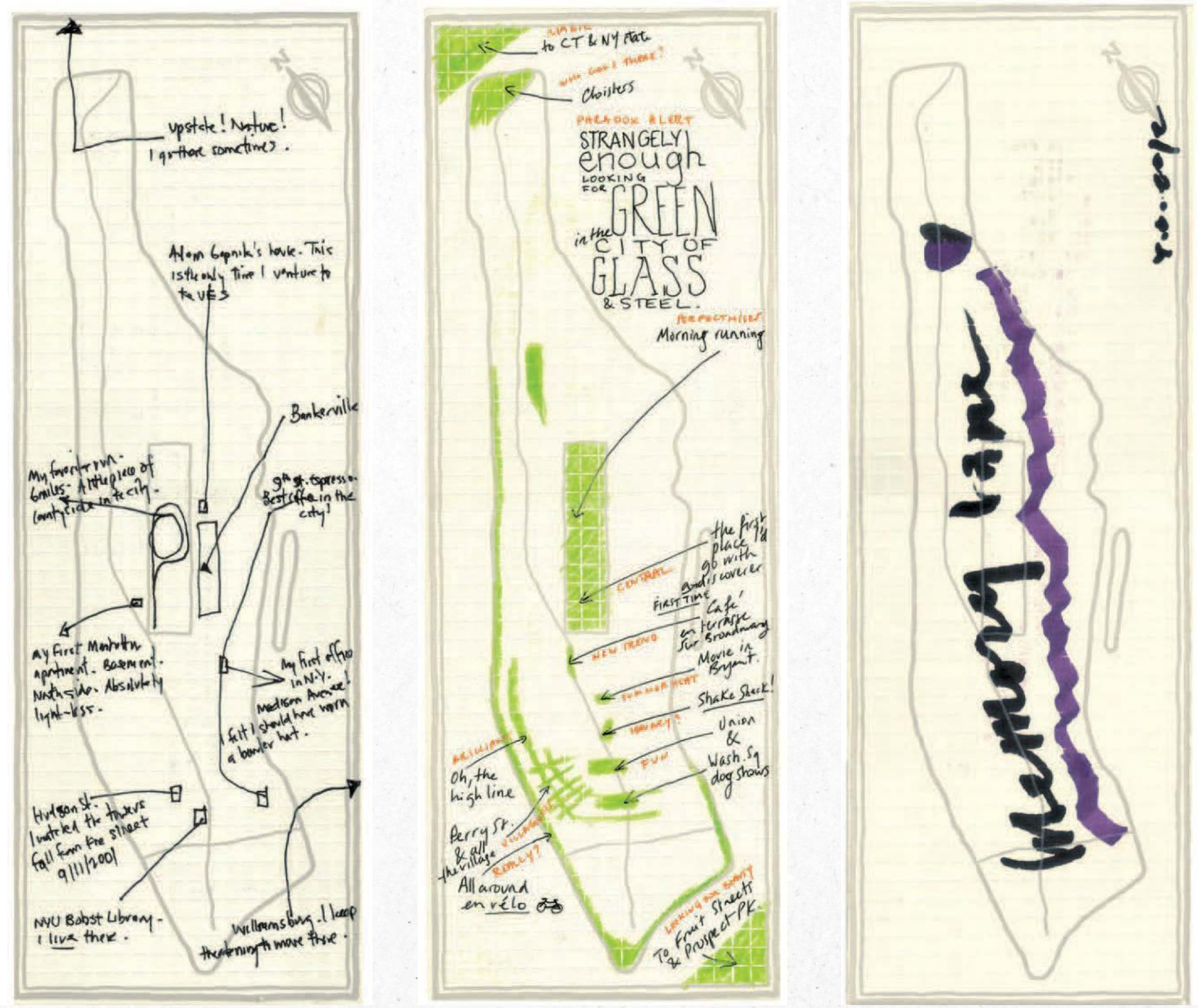

fig 15. Maps of Manhattan, (Becky Cooper, 2013). Three examples of manhattan maps outlining the experience of different individuals, the last being completed by Yoko Ono.

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