Teleportation: The Possible Leap

by
Amirhesam Monshi

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Master of Architecture

AUTHOR'S DECLARATION

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

ABSTRACT

This thesis tells a story, inviting its audience into a parallel world, existing somewhere in my imagination, where human teleportation becomes real and gradually becomes the most prevalent method of transportation. Throughout our speculative travels we will witness the philosophical, social, political, environmental, and architectural implications of this fantastical technology.

Following the tradition of speculative (or visionary) architecture, this thesis seeks to produce criticism of and question the current condition of matters through the speculation of a possible future. To this end, it utilizes teleportation as an exaggerated metaphor for existing or emerging technologies in order to magnify their impacts on our notion of things, environments, as well as our behavioral motifs in both individual and social scale.

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I would first like to thank my supervisor, Terri Boake for her continued support, advice and encouragement and the very interesting and insightful conversations that we had in our meetings. She consistently allowed this project to be my own work, but with her great knowledge and experience in architecture and her love for pop culture she steered me in the right direction in my many moments of doubt.

Secondly, I would like to thank Tracey Winton, my Committee member, for her support and guidance throughout the project and her openness to my provocative chosen topic since the beginning of the process, when less people were willing to take it seriously.

I would also like to thank Sonja Schweiger, my very talented and kind friend who patiently helped me with editing my thesis.

Finally, I would like to thank my parents and my beautiful sisters, Mahta and Mahsa who were always there for me, teleporting to me from miles away through my phone screen, whenever I needed them.

DEDICATION

To my mom and dad: who have always believed my craziest stories.

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When Exploring Subjectivity Becomes an Objective

If not for one not very serious conversation about teleportation between a friend while we were killing time waiting for our order, this relatively odd topic would never have become the focus of my thesis. Since that particular conversation, the question continued to occupy my mind: how would the realization of teleportation technology impact the world and the lives of humans?

I had occasionally read novels in the magical realism genre - a sub genre of speculative fiction- and had enjoyed reading historical epics prior to starting this project. However, for some unknown reason, I had never been a big fan of the science fiction genre, which made choosing the topic of teleportation a big challenge for me. I should confess that not only was I not a fan but I was also, secretly, a critic of bringing fiction or speculation to architecture and science. The importance of working on something unreal while there have always been more than enough practical objectives and unsolved problems whose resolution could make a real difference in the world had always been a mystery to me.

To my surprise, I started to work on this topic with a passion the source of which I could not understand, given my attitude towards speculation in architecture. I did not know the reason behind my fascination with depicting a world introduced to teleportation, and was not able to answer a critical question I was constantly asked at the beginning of my journey: what was the importance of choosing something as fictional as teleportation as the primary theme of an architectural thesis? The only answer I could come up with then, was "because I want to"; an extreme subjectivity which, ironically, later became one of the embedded objectives in my project.

Not very long after starting my thesis, and while enjoying the excuse I had found for spending so much time reading western architectural theories, I found subjectivity to be the missing piece of the puzzle of "architecture as a form of art": a form of art whose trendy, well-intended objectives such as sustainability and social housing I had spent eight years getting familiar with. In contrast, I found visionary architecture to be a powerful means of finding myself beyond the label of "architecture student." Instead, I discovered a human who possessed very human characteristics, among which the dislike for the process and its stress and anxiety, and a comfort in the endpoint with its termination of uncertainty, stood out to me. This is as a characteristic which has remained constant even as this project nears its final touches, and likely explains my fascination for teleportation, as it eliminates the process and renders the destination instantly available.

The thought of skipping to point B largely drove the exploration within the final product of my thesis, a graphic novel. Through the creation of its stories and images, I began to truly believe that teleportation could be a self-reflective tool through which I could access the deeper layers of my character, and that a greater knowledge of self and the cherishing of my small human idiosyncrasies could make me a better architect. However, no matter how much my desire to challenge myself, my personal enjoyment of the exploration of architectural theories and getting to know myself through this topic meant to me, I also found that none of this felt like enough, not for me nor for my fellow students and professors, to justify a focus on teleportation for a master of architecture thesis.

Gradually, through my study of the history of speculative art and architecture, I began to realize that the effects that so called "paper architecture" seemed to have on society and technology gave the genre a new gravity and a visionary purpose in my eyes. In this first section of the book, this history of speculation, and in general, the role of dreaming and imagination in art and architecture are explored in order to pinpoint the objectives which the works of this particular genre hopes to (and often does) achieve, among them: preparation for the future, the proposal of utopias, the inspiration of new technology, the demystification of the sacred an the production of important criticism of the present or imminent world. Through the work that allowed me to uncover these ambitions, I was also able to find and share a new understanding of the importance of my own personal speculative work.

PART ONE
SPECULATION

Function of Fiction in Art

Every human imagines. Every human dreams. Only few have been able to share these dreams and the fruits of their imaginations with others. Artists in particular have always had better tools to communicate their dreams, and have done it in different forms throughout human history. Despite our corporeal existence, there have never been limits to the human imagination, and this capability has allowed us to freely travel in time and space without physically moving anywhere at all.

> *"No system of inquisition can control one's fantasies. They can throw you in jail, but you still have the ability to live your sentence outside the prison without anyone holding you there. Through the imagination, you can pass over the insurmountable walls without leaving any trace of yourself."*[1]
> Abbas Kiarostami

In dreaming, we travel to places real and unreal. We see or even touch things that do not exist and live in times that are not today. There are innumerable examples in literature, painting, theatre, film, architecture, and other forms of art of this type of time and space travel; artists attempting to represent their recollections of real or imagined places in the past, or their unprecedented visions of the future.

The ancient fantastical work of *The Epic of Gilgamesh* might be the earliest remaining product of human imagination in the form of literature. Some consider it and others like it the grandfathers of what we today call the science fiction genre.[2] *One Thousand and One Nights* and the *Persian Shahnameh* (or Book of Kings in English) which I grew up hearing and reading stories from, are other examples of this kind. Similar to their aforementioned predecessor, they paint pictures of imaginative lands and superhumans possessing extraordinary powers and abilities. Some of those supposed superpowers have since come into existence through the advancement of tools and technology developed by consecutive generations. The opening lesson we may learn from them is that dreaming may be the first step in the process of achieving.

From time immemorial, the inner human desire for a better life has led many storytellers to turn their imaginations towards perfect lands, or, in general terms, utopias. A long time before the word 'Utopia' was coined by Thomas More in 1516, they were being imagined by our ancestors. This tradition has been preserved to this day, and I believe it will continue to be practiced by future generations.[3]

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1   Kiarostami, Abbas. "Interview Cannes 1997." Interview. Accessed May 2, 2019. https://www.youtube.com/watch?v=F9l_KD96E_M.

2   "Mind The Gap: Forgotten History of Science Fiction." Castaliahouse.com. January 05, 2017. Accessed May 14, 2019. http://www.castaliahouse.com/mind-the-gap-forgotten-history-of-science-fiction/.

3   Hodgkinson, Tom. "How Utopia Shaped the World." Bbc.com. October 6, 2016. Accessed May 1, 2019. http://www.bbc.

Utopias (according to the general opinion) are imagined worlds with perfect laws, governments, and social conditions.[4] For example, in *The Republic*, written somewhere around 380 BC which is believed to be the oldest survived utopia, Plato suggested a perfect social and political organization. Centuries later, in the middle ages, *The Land of Cockaigne* was another memorable utopia. Described in the Kildare poems (compiled around 1330) and illustrated by Pieter Brueghel, 1567. Cockaigne was an imaginary land of perfect enjoyment, justice, and effortlessness.[5]

In 1516, Sit Thomas More described a fictional island called Utopia, in which the laws, structure of government and society were set in drastic contrast to those of his actual environment. In his story, he utilized the stark comparison between the strange island and his home country, England, to address the political and social issues which he was not content with in the real world. These comparisons were embedded within the conversations between the characters of his story. Utopia vividly points to the visionary objective behind imagining utopias: criticism. Within these worlds, behind the pretty window dressing of their perfection, hide fundamental questions about real social and political conditions.[6]

Figure 1: The Land of Cockaigne by Pieter Bruegel

com/culture/story/20160920-how-utopia-shaped-the-world.

4   "Utopia." Merriam-Webster. Accessed July 14, 2019. https://www.merriam-webster.com/dictionary/utopia.

5   Burbage, Megan. "The History of Dystopia - Megan Burbage." Medium. September 14, 2017. Accessed February 24, 2019. https://medium.com/@meganxburbage/history-philosophy-and-politics-of-dystopia-a528acecb822.

6   Paul, Martin, Eve. "The Critique of Utopia." Eve.gd. February 26, 2016. Accessed August 18, 2019. https://eve.gd/2016/02/26/the-critique-of-utopia/.

In the nineteenth century the world was introduced to another version of utopias by a new wave of novelists and writers, such as Mary Shelley, Jules Verne, H. G. Wells, and Hugo Gernsback, who were influenced by the ongoing industrial revolution. Witnessing the impact of technological advancements on the lives of individuals and societies, they built an interest in predicting the future of technology, and with it, the future of civilization. Often critical of this future that was influenced by the new technologies they saw, the writers of this time created anti-utopias, where prosperity and beauty were missing from the lives of humans, called dystopias.[7] These pessimistic perspectives towards emerging technologies and their social implications redefined utopias and confined them to unreal places or no-places (as the original etymology of the word suggests), giving birth to the modern notion of the science fiction genre. In addition to criticism, however, they also correctly predicted many new future technologies in their commentaries. H. G. Wells, for example, envisioned the advent of aircraft, tanks, space travel, nuclear weapons and satellite television in his novels, decades prior to their existence.[8]

Even if the speculative images artists painted lacked scientific precision, they should be considered valuable for the aspirational role they played, and continue to play. We may wonder how art, and particularly the science fiction genre, has been more successful in prophesying the future of technology than science. One reason may be the artist's more flexible constraints as opposed to the limiting box of logic surrounding scientists.[9] Another may be that the intention of this genre is not only to predict the future, but to suggest different possibilities from which we, the viewing public, can decide the more desirable one to pursue.[10] In this way, artists can influence the direction of technology: putting ideas in the minds of their contemporary, or succeeding, scientists and engineers. Therefore, sometimes the aspirational nature of art allows the mechanism to be reversed, and technology eventually imitates the predictions of artists.[11]

7   Burbage, Megan. "The History of Dystopia - Megan Burbage." Medium. September 14, 2017. Accessed February 24, 2019. https://medium.com/@meganxburbage/history-philosophy-and-politics-of-dystopia-a528acecb822.

8   Hodgkinson, Tom. "How Utopia Shaped the World." Bbc.com. October 6, 2016. Accessed May 1, 2019. http://www.bbc.com/culture/story/20160920-how-utopia-shaped-the-world.

9   Asimov, Isaac. Interview. Bbc.com. January 10, 2018. Accessed July 15, 2019. https://www.bbc.com/ideas/videos/are-artists-or-scientists-better-at-future-predict/p05tdr6n.

10   Berkson, Zach. "What Is The Purpose of Science Fiction Stories?: Project Hieroglyph." Hieroglyph.asu.edu. April 6, 2016. Accessed July 15, 2019. https://hieroglyph.asu.edu/2016/04/what-is-the-purpose-of-science-fiction-stories/.

11   Short, Eva. "Prediction or Influence? Science-fiction Books That Forecast the Future." Silicon Republic. April 05, 2018. Accessed July 18, 2019. https://www.siliconrepublic.com/machines/science-fiction-future-technology.
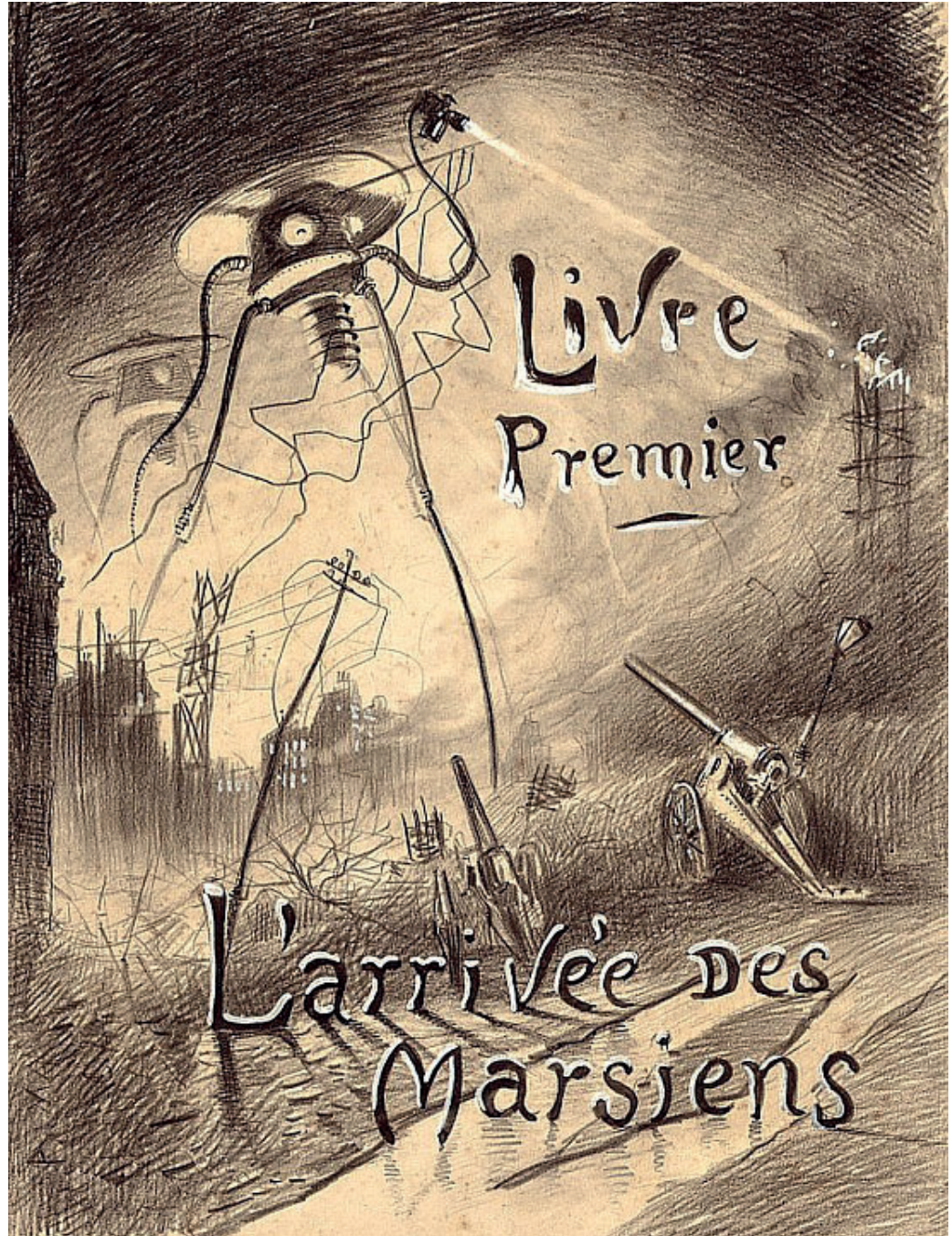
Figure 2: The Title page of the H.G. Well's novel, War of the Worlds deluxe edition, by Henrique Alvim Corrêa

En L'An 2000' (or in the Year 2000), printed in 1899, 1900, 1901 and 1910, is a great example of an inspiring speculative work. . Whereas Jean-Marc Côté, alongside other artists, sometimes depended too much on their own technological milieu and failed to envision the correct form of a device, they inspired some noticeable technological advancements by painting their vision of technology that would arrive in the next hundred years. One of these images, for example, shows the action of video-calling/conferencing. Although so different from what it looked like when it was actually invented, a device through which you could see someone while talking to them from a distance was an inventive idea at the time, and it is very possible that it contributed to inspiring the invention of the devices that made this dream come true.[12]
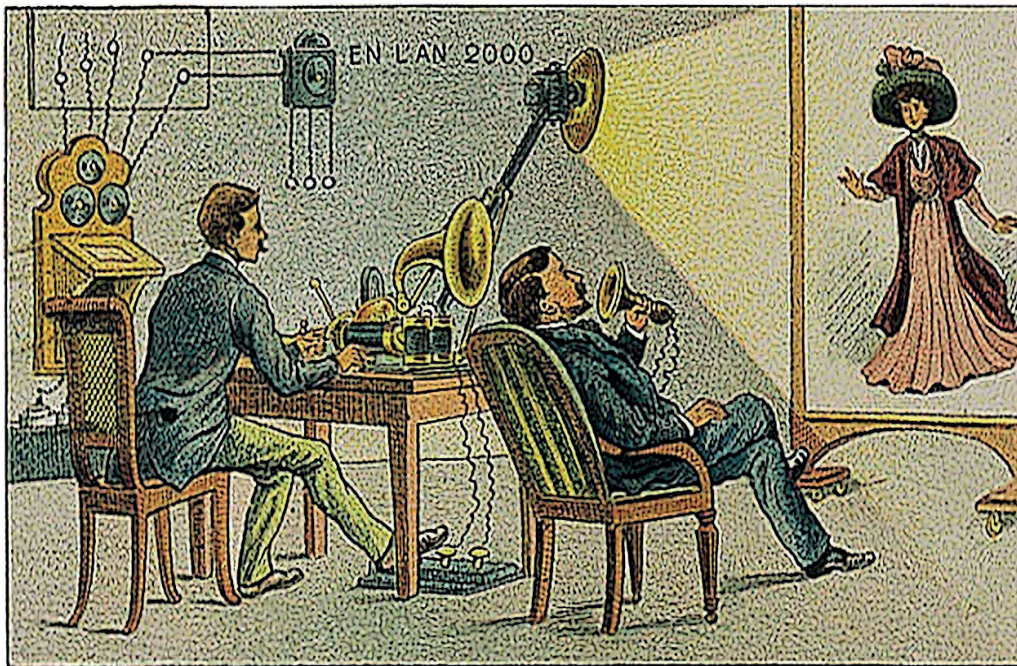
Figure 3: Personal Video Telephone of the Future, From the Series *En L'an 2000*

Furthermore, these predictions contributed to the demystification of plenty of phenomena previously considered to be sacred and beyond the bounds of ordinary human capacity. A

12   Hill, David J. "19th Century French Artists Predicted The World Of The Future In This Series Of Postcards." Singularity Hub. October 06, 2014. Accessed May 8, 2019. https://singularityhub.com/2012/10/15/19th-century-french-artists-predicted-the-world-of-the-future-in-this-series-of-postcards/.

famous example is flying, which once used to be thought of as a supernatural ability possessed by those with otherworldly qualities or sacred abilities. The human imagination, however, painted the flying machine long before its existence, proposing the radical idea that flying would one day become accessible to everyone through technology.

Figure 4: The Albatross, the flying machine described in The *Robur the Conqueror*, a Jules Vern novel, 1870, portrayed by Léon Benett, 1886

We should also not forget that it is not only technology that has been predicted by the artists of the science fiction genre. For instance, in his 1931 novel, *Brave New World*, Aldous Huxley accurately predicted: "the philistinism of the state, the debasement of sex and the insistence on happiness."[13] Political, societal, economic, legal, and ideological shifts in the structure of future societies have repeatedly been foreseen in the works of the speculative-fiction genre.

Preparation is another function of the works of this genre. Science fiction has provided us with information about how future technologies would be used and about their behavioral implications, whether on a personal or social scale. Therefore, upon our first encounter with these technologies, we are more inclined to react as if we had been expecting them, reducing the surprise or impact that these inventions may have had on people.

The mechanisms of criticism, prediction, inspiration, secularization, and preparation continued as a central theme on the big screen. Cinema at the beginning of the twentieth century, with visualization techniques never before seen, brought a new era to the science fiction realm and

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13   Hodgkinson, Tom. "How Utopia Shaped the World." Bbc.com. October 6, 2016. Accessed May 1, 2019. http://www.bbc.com/culture/story/20160920-how-utopia-shaped-the-world.

the depiction of utopias, gaining more traction than text based fictions. Film became an exciting medium for artists to obtain more freedom in painting their imaginary worlds and to share them with a larger audience, who quickly engaged with what became one of the most popular forms of art.[14]

An early example of the embodiment of speculative fiction in the form of motion pictures is Houdini's 1919 film *The Master Mystery*, in which a robot, called Q, appears on the silver screen for the first time a year in advance of the word 'Robot', which was coined in 1920.[15]

Figure 5: The robot, called Q, in 1902 Houdini's *Mastery Mystery*

Another example is the sliding rock obstructing and opening the way to the cave in the 1902 movie *Ali Baba and the Forty Thieves*, more than fifty years before the debut of the first automatic doors, which were invented in 1954. Whether we believe that this sliding rock

14   Asimov, Isaac. Interview. Bbc.com. January 10, 2018. Accessed July 15, 2019. https://www.bbc.com/ideas/videos/are-artists-or-scientists-better-at-future-predict/p05tdr6n.

15   Kaufman, Richard. "The First Robot in Cinema." Boing Boing. December 1, 2015. Accessed July 15, 2019. https://boingboing.net/2015/12/01/the-first-robot-in-cinema.html.

inspired the idea of automatic doors or not, the influence of the famous phrase, *"sesame, sesame, open the door"* from the movie (and also from the original story in *One Thousand and One Nights*) is still noticeable in the industry. In fact, there are even many automatic door manufacturer companies named after this catchphrase.[16]

Figure 6: The sliding rock, *Ali Baba And The Forty Thieves*, 1902

In one of his greatest movies: *2001: A SPACE ODYSSEY*, released in 1968, Stanley Kubrick depicts his vision of the future of personal computers, which look very similar to today's tablet computers, alongside his other precise depictions of futuristic undertakings. This was long before the first tablet computers were released in the 1990s. He also precisely predicted in this film that we would be using our iPads while having a meal at some point in the future.[17]

Figure 7: *2001: A SPACE ODYSSEY (1968)*

16   Example: http://www.opensesamedoor.com/

17   Benson, Michael. "How Kubrick's '2001: A Space Odyssey' Saw Into the Future." The Wall Street Journal. March 09, 2018. Accessed July 16, 2019. https://www.wsj.com/articles/how-kubricks-2001-a-space-odyssey-saw-into-the-future-1520609361.

Some of the predictions presented first in film are being worked on by scientists today, some even nearing widespread deployment. For example, driver-less cars, which are an emerging technology at the present time and whose prevalence is expected to increase dramatically in the near future, used to be a technology that we could only see in a sci-fi movie. The 1990 movie Total Recall is one of the first movies that depicts the idea of cars without drivers.[18]

Figure 8: Driver-less Taxi from the movie: *Total Recall* (1990)

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18   Pittis, Don. "Robots Take the Wheel, Human Drivers Obsolete: Don Pittis | CBC News." CBCnews. February 05, 2015. Accessed July 16, 2019. https://www.cbc.ca/news/business/robot-drivers-mean-good-riddance-to-humans-1.2944628.

Architecture as the Background of Speculative Fiction

The indisputable interaction between humans and their environment, whether public or private, has led to the creation of visionary or speculative architecture as the backdrop for most stories of this genre. One remarkable cinematic example of the use of architecture in this way is the 1927 movie Metropolis, which glamorously paints a predictive picture of the future city. Metropolis depicts a caste society rooted in a growing obsession with mass production. This city manifests itself as an endless futuristic forest of iron and concrete where the poor live under the ground alongside the machinery, the rich live up in the sky on top of the monstrously tall buildings, and the technocrat class lives in between, mediating between the two segregated social classes at the extremes.[19]

Figure 9: Metropolis (1927)

19   Jacobsen, Wolfgang, and Werner Sudendorf. Metropolis: A Cinematic Laboratory for Modern Architecture. Stuttgart: Edition Axel Menges, 2000.

The architecture of the Metropolis (the city in the movie *Metropolis*,1927) is not only a response to and a metaphor for the hierarchical structure of the imagined society, but also an answer to the advancement of technology in the future. As Wolfgang Jacobsen and Werner Sudendorf describe in their book, *Metropolis: A cinematic Laboratory for Modern Architecture*, the, then still new, trend of constructing high rise buildings influenced the architecture of Metropolis. In 1924, when technology had just started to allow for taller and larger buildings in American cities, Fritz Lang (director and screenwriter of Metropolis) traveled to New York to study the methods of film production in America. His encounter with the aggregation of large skyscrapers and flashy neon signs in the city confirmed his vision of the future city, which would later be pictured in the which he had finished writing (alongside Thea von Harbou) less than a year before his move to the US.[20] Essentially, impressed by what technology could do to the architecture of a city, he employed the same method he had previously used for predicting the future of a society to predicting the future of architecture: exaggerating the elements which existed all around him in the present. In this way, he imagined that future technology would allow for even taller buildings, larger unsupported spans in structures like bridges, more cars on the streets and flying crafts which could fly closer to the ground and among the buildings. His imaginary future city, many layers of which he predicted correctly, then became the background, the environment, and the stage upon which the rest of the story could take place.

From the earliest days of fiction until now, speculation has had a very important position in art and has served numerous purposes, such as the estimation of the advancement of technology in the future to prepare on an individual and societal level for its implications, imagining more perfect world's in contrast to our own, proposing inventive ideas to scientists and engineers, the secularization of the sacred, and perhaps most importantly, the criticism of the present condition through removal from it via contrast or exaggeration.

Architecture as the environment, housing the speculated subject, has often played a bold role in the works of science fiction. The environments surrounding the characters we tell or experience stories about been represented to us through a variety of media, from descriptive texts (such as how the physical and geographical characteristics of the Utopian Island are laid out in prose in sir Thomas More's *Utopia*), through illustrative drawings (like the drawings in the series *En L'an 2000*) and finally, through the magic of the silver screen (what we begin to see in *Metropolis*).

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20   Jacobsen, Wolfgang, and Werner Sudendorf. Metropolis: A Cinematic Laboratory for Modern Architecture. Stuttgart: Edition Axel Menges, 2000.
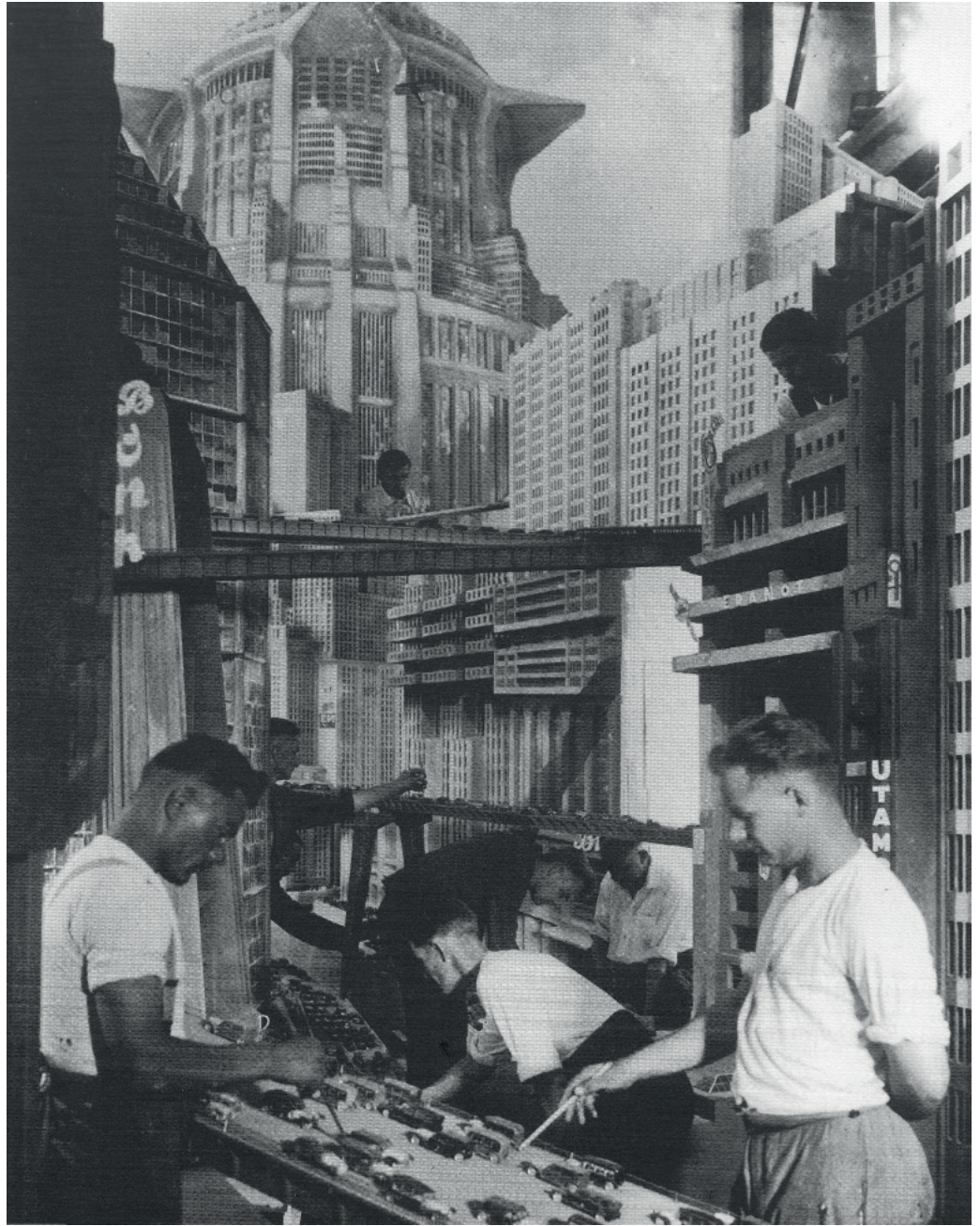
Figure 10: Behind the scene of *Metropolis* (1927)

Function of Speculation in Architecture

As Christian Norberg Shulz mentions in his famous article *The Phenomenon of Place*, happenings require an environment in which to take place".[21] In the same way, commentaries, no matter how fictional they are, need environments in which they occur; a fact that has resulted in the creation of fictional environments, and more specifically, fictional architecture. In simpler terms, most of the times, architecture has been depicted in speculative artworks as the environment, housing the subject or objective of the work.

However, sometimes we encounter fictional artworks with architecture as their primary objects. This kind of architecture exists only on paper, or today on the digital screen. The fact that this architecture is never meant to be realized as a building, points to the unique objectives which distinguish it from traditional practice. Though very similar to the objectives of the other embodied forms of speculative fiction, theoretical architecture poses distinct concerns. In general terms, speculative works of architecture are means for ideation, argumentation and also to act as a medium for architectural critique; they are the translation of theory into drawings or other forms of architectural representation for immediate communication with the audience.[22]

Throughout the modern history of architecture, we have seen speculative architects with diverse concerns and methods of problem-solving and representation. Studying whose works would teach us about the diversity in this realm of the discipline and would tell us more about the importance of visionary architecture and its influences on the other parts of the discipline, over time.

21   Norberg-Schulz, Christian. Genius Loci: Towards a Phenomenology of Architecture. New York: Rizzoli, 1979.

22   Altürk, Emre. Drawing Architecture Theory on the City. S.l.: S.n., 2009.
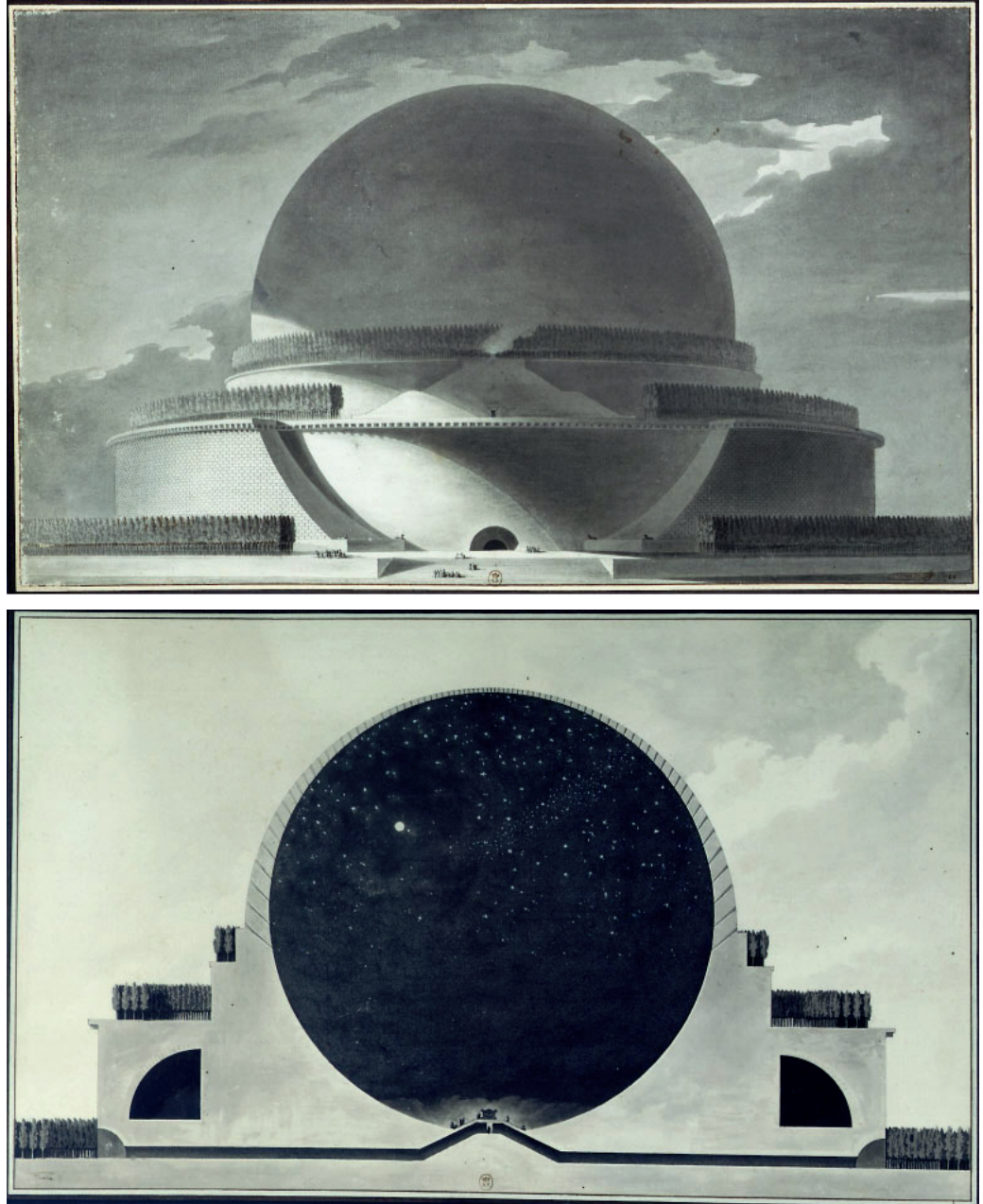
Figure 11: The 'Cenotaph to Newton' by Etienne-Louis Boullee, 1784

Archigram and The 60s Florentine Visionary Architects

Prior to the visionary architecture presented in the 1960s, there had been dreamers such as Jan Vredeman de Vries, Claude Nicolas Ledoux, and Jean-Jacques Lequeu practicing a somewhat similar form of architecture. In that particular decade the world witnessed a notable wave of speculative designers: architects who utilized their imaginative power and the knowledge and skills picked up in the years spent in architecture schools to visualize graphically their position on the emerging societal and cultural demands- especially the constant growth of consumerism and mass production of the modern era- through the depiction of their intensified architectural and urban implications.[23]

Archigram is one of the most famous groups of the wave noted above. They started in 1961 at the Architectural Association in London. In their works, they created futuristic visions of the world, when consumerism became an integral property of the culture through advanced technologies, facilitating the process of mass production. Their point of view towards the future was based on an optimism, which was not concerned with the finite nature of natural resources- a vision which was disrupted after the oil crisis in the 1970s. They used different unconventional tools, such as zines, comic strips, poetry and radical statements to represent their speculative architecture.[24]
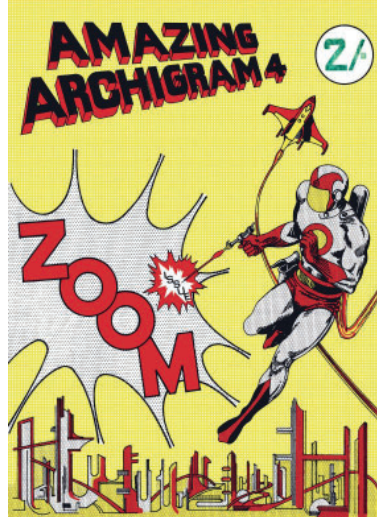
Figure 12: Front cover of Archigram Magazine Issue 4, 1964

23   "1960s Utopian Groups." Spatial Agency: 1960s Utopian Groups. Accessed July 17, 2019. http://www.spatialagency.net/database/1960s.utopian.groups.

24   "1960s Utopian Groups." Spatial Agency: 1960s Utopian Groups. Accessed July 17, 2019. http://www.spatialagency.net/database/1960s.utopian.groups.

In 1966, two other visionary architecture groups, immensely influenced by Archigram, started their practices in Florence, Italy; Archizoom and Superstudio. Archizoom (whose name was also inspired by Archigram and their fourth zine, entitled ZOOM! Amazing Archigram) alongside Superstudio, used similar approaches towards architectural representation in their projects which had layers of criticism of modernism. Architectural critique was the main element of the works of these groups, although they included social and political criticism in their projects as well. Even they themselves, weren't immune to each other's criticism. For example, both of the latter groups blamed Archigram, their inspiration, for their negligent positivism about the future of the environment and lack of involvement in political matters.[25] Below is a project entitled The Continuous Monument: An Architectural Model For Total Urbanization by Superstudio, published in their third catalogue in 1969, in which a consistent architectural form, running by or over important architectural monuments and urban textures, and told in a popular language through a storyboarded, comes to criticize the arbitrariness of consumerist architecture.[26]
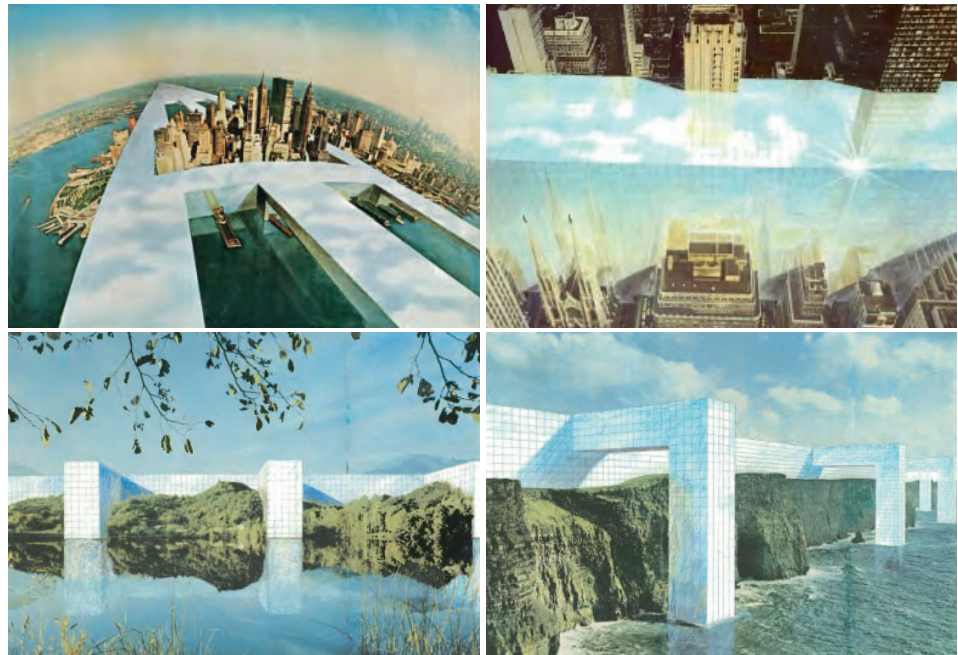
Figure 13: Superstudio. Il Monumento Continuo, 1969

25   "1960s Utopian Groups." Spatial Agency: 1960s Utopian Groups. Accessed July 17, 2019. http://www.spatialagency.net/database/1960s.utopian.groups.
And Altürk, Emre. Drawing Architecture Theory on the City. S.l.: S.n., 2009.

26   Altürk, Emre. Drawing Architecture Theory on the City. S.l.: S.n., 2009.

Massimo Scolari

Although architectural elements are easily spotted in most of Massimo Scolari's drawings, sometimes the line between being a work of speculative architecture and a painting is crossed. He communicates his thoughts and imagination through his drawings, utilizing his great knowledge of 'the history of architectural drawings' which he has taught at prestigious architecture schools around the world. His fluency in using the language of symbols has enabled him to effectively convey his criticism of modernism in his works which are not limited to his drawings. Like most speculative architects, he does not have his name on a built construction, but he uses a whole range of architectural representations namely, sculptures, furniture, and installations in his art.[27]

Figure 14: Biennale di Venezia, 1991, Massimo Scolari, photographed by L. Ghirri

27   Scolari, Massimo, Daniele. Del Giudice, and Yale University. School of Architecture. Massimo Scolari : The Representation of Architecture. 1st ed. Milano: Skira, 2012.

The intention of including Massimo Scolari in this list is not to discuss the criticism in his works, but to hone in on a very unique characteristic that I see in them: self-reflection. If you carefully read his works you can almost feel his presence, mostly as a flying object, inside his drawings. He finally gained his pilot's license in 2001, and one may say that he has told his pre-estimated/imagined biography in his drawings.[28] This is what I found very intriguing about his work. I believe that exploring subjectivity and self-knowledge deserve a part of architect's time and imagination, and that any sort of attempt at understanding the human being on a personal scale hugely contributes to making a better architect who designs environments for other humans just like him.

Figure 15: 1986 Lucifero, oil on board, Massimo Scolari

28   Scolari, Massimo, Daniele. Del Giudice, and Yale University. School of Architecture. Massimo Scolari : The Representation of Architecture. 1st ed. Milano: Skira, 2012.

Brodsky and Utkin, the 1980s

Not unlike other architects who dealt in speculation, practicing visionary architecture was more of a compulsion for Aleksandr Brodsky and Ilya Utkin. Due to the economic and bureaucratic constraints imposed on architects by the communist government of the Soviet Union, many of the architects of that time changed their career to the professions on the margins of architecture, such as book or stage design, while others, like Brodsky and Utkin, decided to release their creativity in architectural competitions, funded by foreign magazines, in many of which they succeeded.[29]

The short story behind their visionary works of architecture is best told in the book on the works of these two men by Lois E.Nesbitt:

"Brodsky, Utkin, and the others began producing visionary schemes in response to a bleak professional scene in which only artless and ill-conceived buildings, diluted through numerous bureaucratic strata and constructed out of poor materials by unskilled laborers, were being erected – if anything. As such their work constitutes a graphic form of architectural criticism, an escape into the realm of imagination that ended as a visual commentary on what was wrong with social and physical reality and how its ills might be remedied."[30]

Undeniably, their drawings, which are accompanied by a textual commentary, are in critique of the Soviet architecture of the time, not only in content but also in the form of representation. At some point, they started etching their drawings on copper plates because of the shortage in material, especially paper.[31]

29   Nesbitt, Lois E., Alexander Brodsky, and Ilya Utkin. Brodsky & Utkin. New York: Princeton Architectural Press, 1991.

30   Nesbitt, Lois E., Alexander Brodsky, and Ilya Utkin. Brodsky & Utkin. New York: Princeton Architectural Press, 1991.

31   Nesbitt, Lois E., Alexander Brodsky, and Ilya Utkin. Brodsky & Utkin. New York: Princeton Architectural Press, 1991.
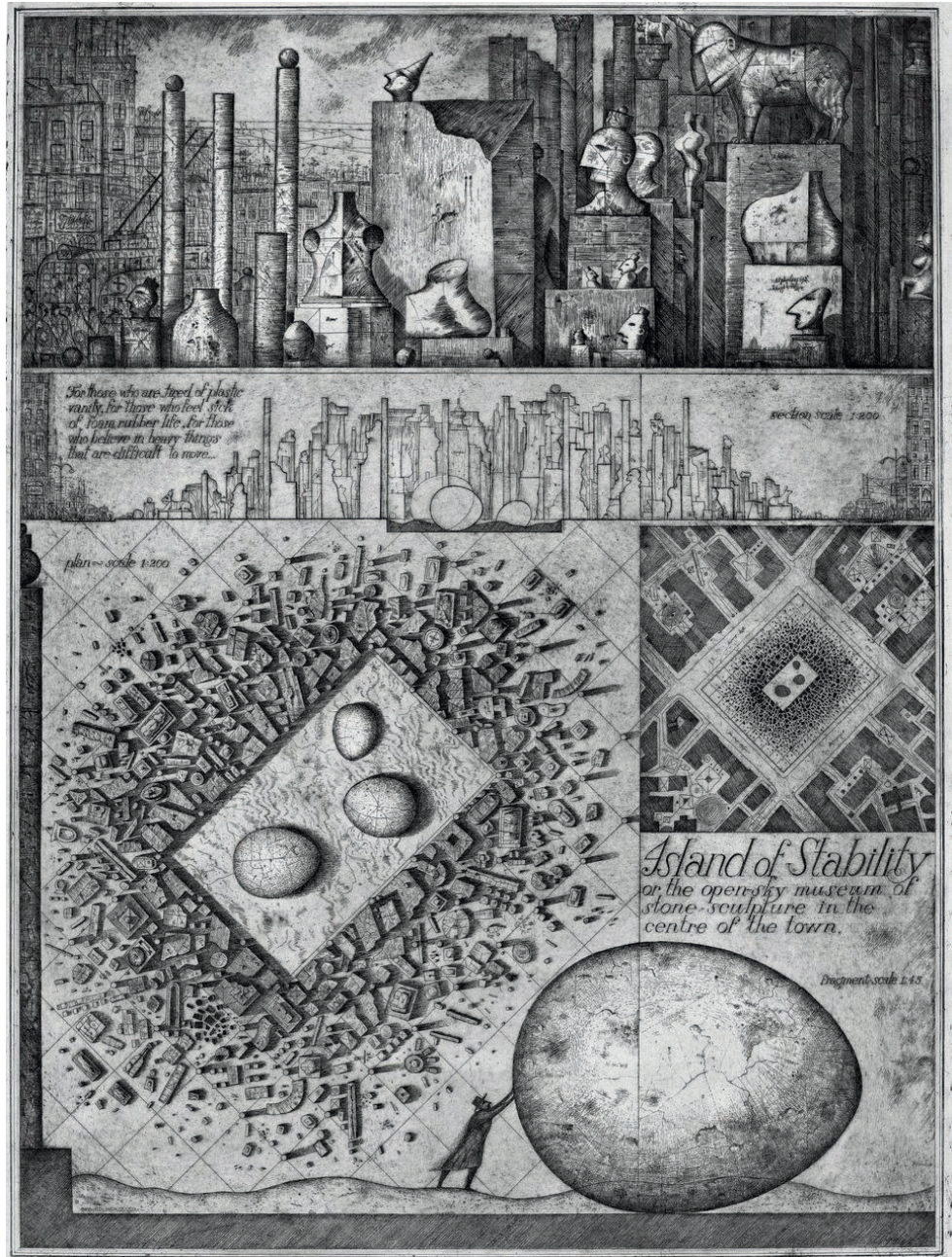
Figure 16: Island of Stability, 1989/90, Brodsky and Utkin

Speculative Architecture of Our Days

Speculative architecture has continued to provide an outlet for architects to this day. Although there are numerous people that continue to create visionary and critical works, I chose to study Jimenez Lai and Liam Young because of the outstanding objectives that they approach in their works, as well as due to their method of investigation and representation.

Jimenez Lai

At the beginning of my thesis journey, *Citizens of No Place*, Jimenez Lai's widely admired architectural novel, not only motivated me to continue what I had started (a topic which seemed to be too unconventional to be an architecture thesis) but also served as a great educational resource to learn from. I found the most important characteristic of this graphic novel, in which Lai has imagined and represented a number of possible futures, to be the act of simplifying complicated and sometimes vague architectural theories and communicating them with an audience who does not necessarily have an architectural background. His fictitious narratives told in manga style drawings are used as mechanisms of criticism and questioning as well as an exciting medium through which to break down complex ideas.[32] He additionally uses other mediums or representations, particularly installations in his unique style, to share his dreams and creative or critical thoughts with others. Aside from teaching architecture at important schools, Lai is also the founder of *Bureau Spectacular*, where he pursues his form of architecture with his partner and other team members. The words from their website best describe the practice:

"Bureau Spectacular imagines other worlds and engages the design of architecture through telling stories. Beautiful stories about character development, relationships, curiosities and attitudes; absurd stories about impossible realities that invite enticing possibilities. The stories conflate design, representation, theory, criticism, history and taste into cartoon pages. These cartoon narratives swerve into the physical world through architectural installations, designed objects, interiors, and buildings."[33]

32   Lai, Jimenez. Citizens of No Place an Architectural Graphic Novel. New York: Princeton Architectural Press, 2012.

33   "About." Bureau Spectacular. Accessed July 18, 2019. http://bureau-spectacular.net/about.
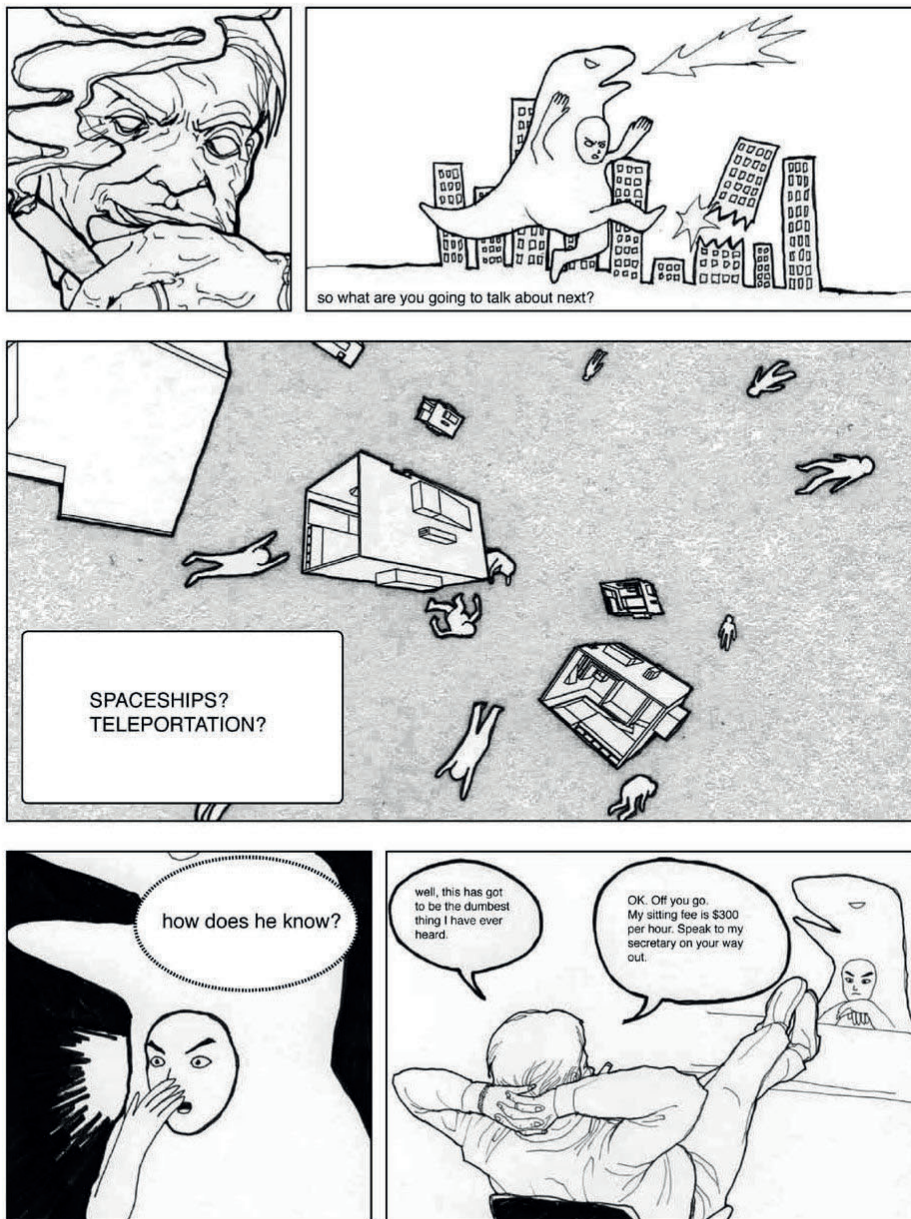
Figure 17: A page from *Citizens of No Place* by Jimenez Lai

Jimenez Lai's *Teleport*

On the bureau-spectacular website, there is a story called *Teleport* which Jimenez Lie has told in his unique manga style.[34] Similar to my graphic novel, teleportation is the main element of this fictional story, making it an ideal precedent for my thesis project. This short story addresses a number of impacts which the invention of teleportation would have on our lives and environments. In the drawings of the story, the streets of the city are shown empty of cars, pointing to the fact that they will be replaced by the faster and more convenient means of transportation. By showing empty streets, Lai attracts our attention to the major influence that cars have had on the form of cities and lives of their citizens. Furthermore, the story suggests that teleportation would replace all other vehicles (airplanes, ships, and trains for example) allowing instead for the immediate transportation of goods and humans. The instantaneous transportation he predicts would make it possible to have larger areas in our world with specific functions, distinct from each other, which may result in the better performance and the higher rate of productivity in those areas.

Aside from the economic implications of teleportation, Lai also emphasizes the subsequent separations, or gaps, between places in order to illustrate the role that the physical landscapes and elements which connect spaces with each other play in our notion of place. He imagines that places would be remembered by their coordination numbers instead of the addresses which, prior to teleportation, were used to describe the path to the destined place. In another frame of this visualized story, it seems that human teleportation is a virtual (rather than a physical) process; teleporting people are standing idle and looking at a map while being active and present elsewhere through a device. One may interpret this drawing as pointing directly to the communication technologies which currently exist and which have allowed us to have an active presence in places even when we are not physically there. It reminds us also of emerging VR technology, through which we not only can virtually travel to another place, but to no place, to places that do not exist in the real world.

The primary concern of the story, however, is justice. Joshua Meyrowitz states in his article *The Rise of Glocality* that in the grander move from pure locality to the ultimate globalization, the present stands somewhere in between, a state which he has termed "glocality". In his article, he explains how technology has provided us with the ability to observe the distant elsewhere, an observation which gives us the agency to choose which place do we prefer to live or be in. Now, we can decide where we belong, and technology has broken the tradition of blind marriage to the place in which we were born.[35] Jimenez Lai's *Teleport* carries our imaginations one giant leap

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34   Lai, Jimenez. "Teleport." Comic strip. Bureau-spectacular.net. Accessed August 17, 2019. http://bureau-spectacular.net/teleport.

35   Meyrowitz, Joshua. ""The Rise of Glocality: New Senses of Place and Identity in the Global Village."." A Sense of Place: The Global and the Local in Mobile Communication, 2005, 21-30.

further into the future, where we can be wherever we want in the blink of an eye. In this world, we meet the main character of the story who is obsessed with the concept of "justice". Freedom of choice in terms of where one wants to be, and the ability to move to that place, is the only justice to him. Without taking any sides or being in favor of globalization or locality, Lai becomes a neutral narrator posing questions through teleportation, inviting us to think about the relationship between mobility, justice and power.

The final product of this thesis discusses a number of similar issues and questions to those which are explored in Jimenez Lai's story. Considering that my first encounter with Lai's *Teleport* was after the storyline of my project was completed, I found the overlaps between the matters tackled in the two works a clue for trusting the process and the questions (a mechanism elaborated upon in *Part Three* of this thesis).
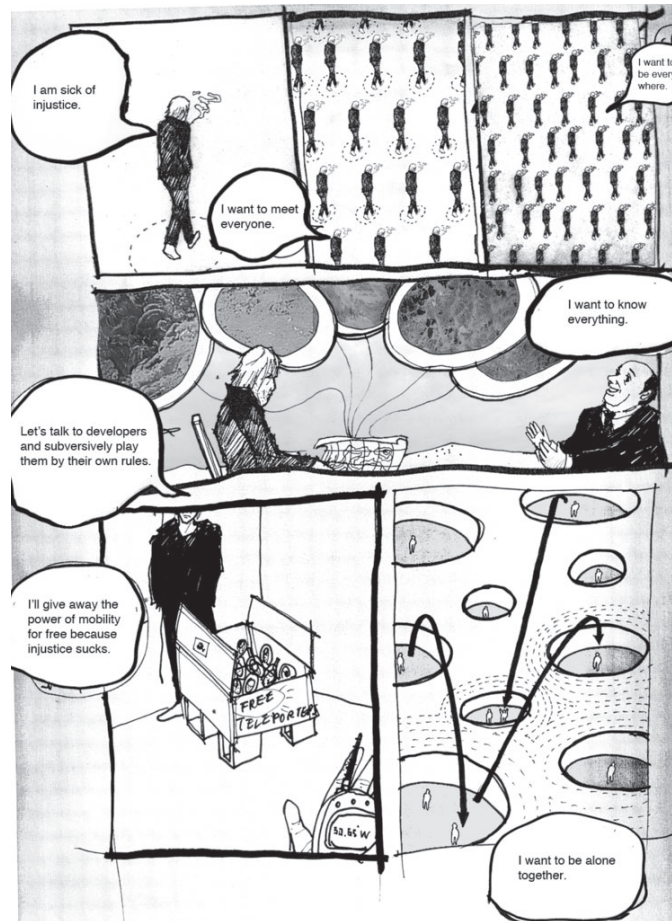
Figure 18: A page from *Teleport,* a story by Jimenez Lai

Liam Young

Liam Young, who calls himself a speculative architect, is a co-founder of *Tomorrow's Thoughts Today*, where he practices a kind of architecture whose product is research and speculation, represented through narratives and static or cinematic images rather than built architecture. In his projects, he explores the implications of emerging trends, technologies and ecological conditions through their intensification or exaggeration, proposed as possible futures. He uses his design background, combined with experience in crafting environments, to prototype new worlds and caution architects and urbanists in advance about the cultural and behavioral shifts that are expecting us in the future and will need responding to.[36]

One of his recent projects is Where the City Can't See. On their website, this project is described as:

"The world's first narrative fiction film shot entirely with laser scanners. Set in the Chinese owned and controlled Detroit Economic Zone (DEZ) and shot using the same scanning technologies used in autonomous vehicles, the near future city is recorded through the eyes of the robots that manage it. Across a single night a group of young car factory workers drift through Detroit in a driverless taxi, searching for a place they know exists but that their car doesn't recognize. They are part of an underground community that work on the production lines by day but at night, adorn themselves in machine vision camouflage and the tribal masks of anti-facial recognition to enact their escapist fantasies in the hidden spaces of the city. They hack the city and journey through a network of stealth buildings, ruinous landscapes, ghost architectures, anomalies, glitches and sprites, searching for the wilds beyond the machine. We have always found the eccentric and imaginary in the spaces the city can't see."[37]

36   Young, Liam. "Prototyping Future Worlds with Architect/Filmmaker Liam Young on MIND & MACHINE." Interview by August Bradley. Youtube.com. April 9, 2018. Accessed January 21, 2019. https://youtu.be/S0yBLY_hAn4.

37   "Tomorrow's Thoughts Today." Tomorrow's Thoughts Today. Accessed July 18, 2019. http://www.tomorrowsthoughtstoday.com/.

Figure 19: Three frames from the film, *Where The City Can't See, directed by Liam Young*

Role of Narrative in Speculative Architecture[38]

After having a brief look at a number of works of speculative architecture, we cannot help but notice the consistent presence of a narrative element. Here we try to answer this question: what is the reason behind the inseparability of speculative design and a story, and what is the role of the story in this genre of works?

There is no narrative without a narrator. This statement points to the first role of a narrative in speculative design which is allowing for subjectivity. In general, speculation, especially about the future, cannot happen in an objective way for the simple reason that the future, intrinsically, has no certainty to it. No one has actually seen it, and, outside of the designer's imagination, it does not exist. Therefore, the future is imagined differently from person to another and when told or represented, naturally carries the narrator's point of view and subjectivity based upon their own life experiences and education. This permission for subjectivity, without which no future could be imagined, explains the integral role of narration in speculation.

The second importance of the narrative in theory lies in the sequential quality of it, both in space and time. The world in which the story happens is generally larger than can be fully described or represented by one narrator or in a single lifetime. Here is where a story comes to help the speculative artist, as its sequences are limited in scope. This quality added to the imagined world prevents the artist from falling into the perpetual loop of designing the entire world with its all elements. However, he or she is still expected to pose enough knowledge about the story-world to avoid arbitrariness and subsequent confusion for the audience. Ernest Hemingway illustrates this function of a narrative in world-making and the importance of adequate author's knowledge of the world he/she describes, as below:

"If a writer of prose knows enough of what he is writing about he may omit things that he knows and the reader if the writer is writing truly enough, will have a feeling of those things as strongly as though the writer had stated them. The dignity of movement of an ice-berg is due to only one-eighth of it being above water. A writer who omits things because he does not know them only makes hollow places in his writing."[39]

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38   Raven, Paul Graham, and Shirin Elahi. "The New Narrative: Applying Narratology to the Shaping of Futures Outputs." Futures 74 (2015): 49-61. doi:10.1016/j.futures.2015.09.003.

39   Hemingway, Ernest. Death in the Afternoon. New York: Simon & Schuster, 2003.

The metaphor of an iceberg, which Hemingway uses, points to the completion of the speculated world in its audience's imagination if enough hints are given to him or her to follow. One might argue that more "hollow places" would leave more space for the audience's imagination to engage with the process of speculation and world-making along with the main artist, however, too many would result in a lack of trust in the author's knowledge about what he is presenting.

The third function of a narrative in speculative architecture comes from the fact that stories are usually formed around one or more characters who actively interact with their environments. In visionary architecture, as mentioned before, the object of the speculation is sometimes the behavioral implications of an imaginary phenomenon rather than the phenomenon itself, in which cases the story with its characters serve to facilitate this approach. On the other hand, in the cases of hypothetical design with architecture as their focal objects, the interaction between the characters, their environment and the constitutional elements of it help the artist to sculpt the imagined environment. In other words, the back and forth relationship between the characters' behaviors and their environments assist the speculative artist with developing more believable characters, as well as more believable worlds.

Narrative is an integral element in speculative architecture, however, it appears in many examples of built architecture as well. A narrative element opens more space for the architect's personal curiosity, while at the same time helping them limit the scope of their investigations. Visionary architects use speculation and imagination to tell their stories through drawings, texts and installations. Their stories immerse us in the impossible, the extremes, their personal dreams, and invite us to think about the unreal, often resulting in us questioning our own reality.

PART TWO
TELEPORTATION

What is Teleportation?

Teleportation in Fiction and Popular Culture

Most of us have heard the term 'teleportation' and are familiar with the popular notion of it: the instantaneous transportation of objects or humans from one place to another without having them traversing the physical space between those two places.[40]

My generation my remember the concept from *Harry Potter* or other popular fantasy series' like it. In *Harry Potter*, teleportation is presented as an aspect of witchcraft, achieved through several different methods. One method involves the opening of portals through the use of a mysterious, unexplained substance called "floo powder." We may, also, recall the word, teleportation, by "beam me up"-like catchphrases from popular sci-fi stories, namely *Star Trek*, which constitute a part of our collective memory, or maybe from older fantastical stories such as the prince Hussain's teleporting carpet in *One Thousand and One Nights*.[41] Perhaps we have encountered it in religious contexts as a miraculous phenomenon, achieved by very devout members, for instance, Islamic ayatollahs through' "Tay al-Arz"[42] or Christian saints' through "bilocation"[43]. We might, as well, have heard of or even belong to the groups who believe teleportation is possible through magic.

Figure 20: Teleportation in *Harry Potter* series

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40   "Teleportation." Merriam-Webster. Accessed July 19, 2019. https://www.merriam-webster.com/dictionary/teleportation.

41   "The Story of Prince Ahmed and the Fairy Paribanou." Arabian Nights Wiki. Accessed July 19, 2019. https://arabiannights.fandom.com/wiki/The_Story_of_Prince_Ahmed_and_the_Fairy_Paribanou.

42   "راه‌های رسیدن به مقام طی الارض / بررسی طی الارض در قرآن و غرب." YJC. September 23, 2018. Accessed July 19, 2019. https://www.yjc.ir/fa/news/6673419/راه‌های-رسیدن-به-مقام-طی-الارض-بررسی-طی-الارض-در-قرآن-و-غرب.

43   Siegfried, Francis. "Bilocation." CATHOLIC ENCYCLOPEDIA. Accessed July 19, 2019. http://www.newadvent.org/cathen/02568a.htm.

Figure 21: From *The Arabian nights* (1900), Illustrations by Soper

The term 'teleportation' is made by the attachment of two Latin words, 'Tele' meaning distance and 'Port' which means carry. It was coined by Charles Hoy Fort, and appears in his third published Collection of the *Strange and Mysterious* in 1931. Prior to the invention of the word, Edward Page Mitchell had talked about a device with a similar function, called Matter Transmitter in his story, *The Man Without a Body* in 1877.[44] The oldest recorded appearance of the word, however, goes back to 1878 on the 23rd of October in The Hawaiian Gazette.[45]

Figure 22: The Hawaiian gazette. (Honolulu [Oahu, Hawaii]), 23 Oct. 1878. Chronicling America: Historic American Newspapers. Lib. of Congress.

44   Darling, David J. Teleportation: The Impossible Leap. Hoboken, NJ: Wiley, 2005.

45   "The Hawaiian Gazette. (Honolulu [Oahu, Hawaii]) 1865-1918, October 23, 1878, Image 4." News about Chronicling America RSS. Accessed July 19, 2019. https://chroniclingamerica.loc.gov/lccn/sn83025121/1878-10-23/ed-1/seq-4/.

Teleportation has been imagined by artists in a remarkable number of stories under the umbrella genre of speculative fiction in diverse forms which we can put into two main categories.

1- Teleportation as a superpower, possessed by an individual person, typically by a superhero or a supervillain , etc.

2- A technology through which teleportation is accessible to ordinary human beings, namely the "TARDIS", the iconic police box from Dr. Who, the "telepod" from the movie The Fly, the obsolete looking "displacement booths" from the story Flash Crowd by Larry Niven, the cylindrical shower-looking teleportation containers from the low-budget movie Love and Teleportation, and of course, the ubiquitous Star Trek "transporter."

TARDIS, Dr. Who's Time and space traveling machine, From the series: *Dr. Who,* 1963 until now.

Professor Owen's teleportation machines from the movie: *Love and Teleportation*, 2013
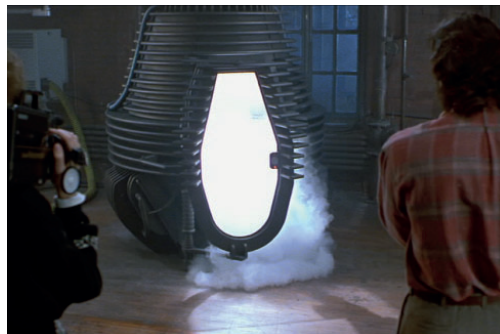
Telepod from the movie: *The Fly*, 1986

Transporter from the *Star Trek* television show, 1966-69

Figure 23: Teleportation devices in films

Teleportation In Science

Teleportation does not belong solely in science fiction. In fact, it is very probable that, since scientists have already successfully experimented with quantum teleportation on photons, subatomic particles, and even atoms,[46] in some quantum physics laboratory, the first-ever molecule is being teleported at this very moment.

It is not the intention of this thesis to elaborate on quantum teleportation, nor is it possible for me to do so, due to my limited knowledge on the subject quantum mechanics. However, I find it necessary to briefly point out where science stands on this matter; firstly, to learn if teleportation can ever become a reality from a scientific point of view and, secondly, to attain a realistic perspective towards how and when we can expect the fantastic leap to teleporting bigger objects, and eventually, humans. This knowledge allows for a more realistic (or at least more believable) depiction of the technology to be presented in the final product of this thesis.

Quantum teleportation relies on the phenomenon of quantum entanglement, in which the quantum states of two separate particles are dependent on each other and cannot be described autonomously.[47] Knowing the quantum state of a particle (which includes its properties such as position, momentum, energy, etc.) is proven to be sufficient to make a perfect replica of that same particle. However, there is a problem: it is not possible to measure all the quantum properties, namely the position and momentum of a particle at once and with high enough precision, as the act of measurement disrupts its quantum state. This fact is known as the Heisenberg Uncertainty Principle. This means that the quantum state of a particle can only ever be partially understood by examining it in isolating.[48] Here is where quantum entanglement becomes practical. The part of quantum information that is gathered from the first particle can be transmitted to the second one in contact with it, and it has been shown empirically that the remaining quantum information would automatically appear in the second particle. If the second particle is entangled with a third particle as well, the third would also attain the quantum state of the second, and subsequently, the original particle. In this process, the termination of the first particle is inevitable during the measurement (or scanning) of its quantum state. This means in the case of developing this method of teleportation for bigger objects and humans, the original version of the object to be teleported would be destroyed and we would only have an exact replica on the other end.[49]

46   Darling, David J. Teleportation: The Impossible Leap. Hoboken, NJ: Wiley, 2005.

47   Francis, Matthew. "Quantum Entanglement Shows That Reality Can't Be Local." Ars Technica. October 30, 2012. Accessed July 21, 2019. https://arstechnica.com/science/2012/10/quantum-entanglement-shows-that-reality-cant-be-local/.

48   Jha, Alok. "What Is Heisenberg's Uncertainty Principle?" The Guardian. November 10, 2013. Accessed July 21, 2019. https://www.theguardian.com/science/2013/nov/10/what-is-heisenbergs-uncertainty-principle.

49   "Quantum Teleportation." IBM. July 25, 2016. Accessed July 21, 2019. https://researcher.watson.ibm.com/researcher/view_group.php?id=2862.

As relayed above, so far photons, subatomic particles, atoms, and energy have been teleported via quantum teleportation. The next step might be teleporting a molecule, then an organic molecule and DNA and eventually, living creatures. This achievement still seems very far off in the future due to the fact that there are several obstacles on the way to teleporting large objects and especially living creatures. One impediment lies in the limits that the current state of technology imposes on the speed of the communication of information. One study, done at the University of Leicester, suggests that with our latest data processors and the largest bandwidths that exist today we would still need 4.85 quadrillion years and roughly 10tn gigawatt-hours of power to teleport one human.

Although it is a very controversial matter of debate, a number of scientists have estimated the time frame in which the teleportation of humans could become a reality to exist within the next 100 years.[50] They believe that the development of human teleportation would happen shortly after quantum computers are fully developed and functioning, as they can immensely accelerate processing and sending data.[51]

However, at the moment, Quantum computers are still at their infantile stage.
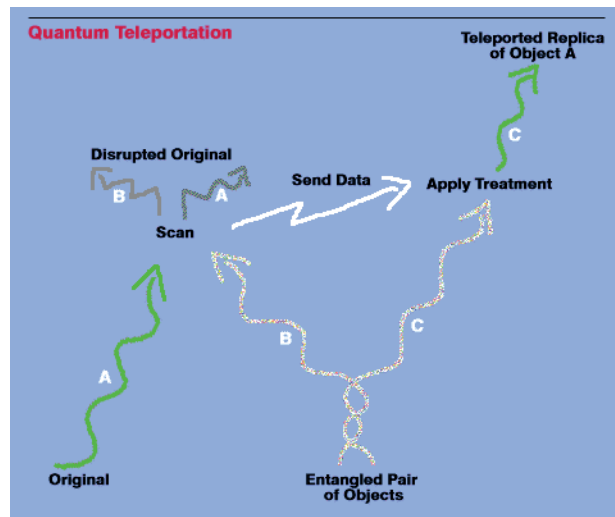
Figure 24: Quantum Teleportation

50   Hall, Dave. "Teleportation: Will It Ever Be a Possibility?" The Guardian. June 12, 2018. Accessed July 21, 2019. https://www.theguardian.com/technology/2018/jun/12/teleportation-will-it-ever-be-a-possibility.

51   Darling, David J. Teleportation: The Impossible Leap. Hoboken, NJ: Wiley, 2005.

Why Teleportation?

"Is human teleportation going to become a reality one day?"
Whatever the answer to this question is, it does not terminate the importance of speculating about a possible future where teleportation technology is realized.

If time answers this question with a yes and the day comes, the speculative material we produce today would become important in helping architects, urban planners, sociologists, and governments prepare for the fundamental impacts that the prevalence of this technology would have on the architecture of living environments as well as its implications for behavioral motives in both individual and social scopes and the future of political relations between countries.

If we assume that this fantastic technology belongs only in fictional stories and will never come to fruition, this investigation can also serve as a look at a very possible future in which personally owned cars are eliminated from our cities. In reality, the move to "work-from-home" culture and ubiquitous computer connectedness is already making our car-centered society less important. This speculation allows to focus on the elimination of cars even to the point of eliminating driverless cars (as they require virtually the same infrastructure, intrusive to urban texture) while trying to preserve the necessary routes (for emergency or freight transportation, for example). Then, we can look at the attractive potential of cities designed for pedestrians and imagine different prototypes for them.

The last but not the least fruit of our speculation is criticism. The final story utilizes teleportation as a metaphor, an exaggerated form of currently existing or emerging technologies, to deliver new perspectives, looking towards their architectural, ecological, political and social implications. In other words, teleportation functions as a magnifier which provides us with a closer and more intensified look at the potential consequences and benefits from outside in.

For example, we can interpret teleportation as the amplified manifestation of communicative technologies. Since the first phone call -when Thomas Watson heard Alexander Graham Bell's voice at the other end of the line: "Mr. Watson, come here; I want to see you"[52]- we humans have been experiencing virtual teleportation. I call that experience "virtual teleportation" because through which we can have an immediate active presence in a place where we are not physically present. Over time, and with the advent of new technologies such as AR, VR, and the hologram, this experience has evolved to become more sophisticated and has, almost, reached the height of its development. Through the glass of teleportation and by repositioning our point of view from being a consumer, inside the context, to a critic outside of it, we can more clearly see how our notions have already been altered by these technologies.

52   The First Telephone Call. Accessed July 15, 2019. http://www.americaslibrary.gov/jb/recon/jb_recon_telephone_1.html.

Figure 25: Hologram display

Our notion of place, for example, has been immensely altered from what it used to be before the arrival of communication technologies, since they have virtually eliminated distances. Subsequently, the process of travel, which includes the two determining qualities in our notion of place: time and the physical path taken, has been transformed in our minds. . In the first chapter of the graphic novel, the metaphor of teleportation facilitates questioning the concept of place within the realm of new technologies and interfaces, especially the Internet, within which places are instantaneously connected (just like in the teleportation world). Furthermore, throughout the story, the impacts of the elimination of travel on our notion of place in the physical world, and its inseparability from the concept of time, are also investigated.

PART THREE
METHODOLOGY OF QUESTIONING, INTERPRETATION AND REPRESENTATION

The Mechanism of Questioning

The "trophic cascade" is the phenomenon of the hierarchical influences that the addition or removal of a species (particularly more impactful ones, like top predators) into an ecosystem has on the other constitutional elements of the ecosystem. This is done through a chain of direct and indirect interactions between the species and other elements within the system.[53] The addition of a pack of wolves to the ecosystem of the U.S. Yellowstone National Park is a classic example of the power of this phenomenon. Not only were the number and behavioral patterns of their direct prey impacted by their arrival, but the geographical features such as rivers and vegetation, as the peripheries of the cascade, reacted to the wolves.[54]
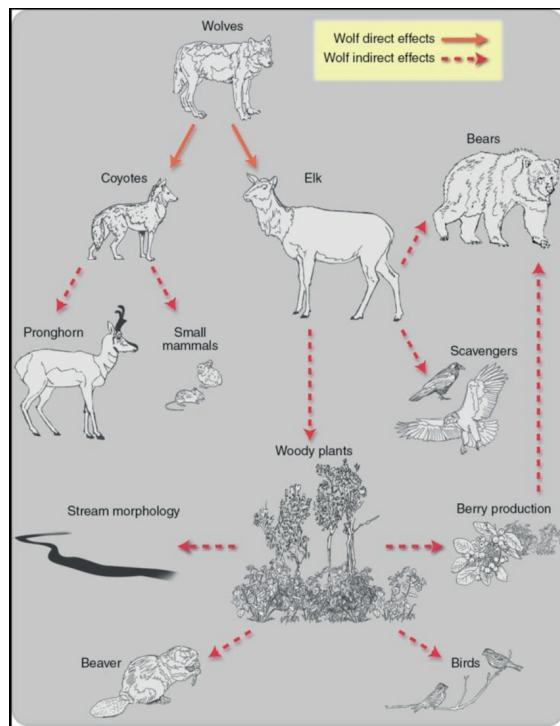
Figure 26: Schematic of the trophic cascades enacted upon the reintroduction of the wolf to Yellowstone National Park at the end of the 20th Century

53   Ripple, William J., James A. Estes, Oswald J. Schmitz, Vanessa Constant, Matthew J. Kaylor, Adam Lenz, Jennifer L. Motley, Katharine E. Self, David S. Taylor, and Christopher Wolf. "What Is a Trophic Cascade?" Trends in Ecology & Evolution 31, no. 11 (November 2016): 842-49. Accessed December 23, 2018. doi:10.1016/j.tree.2016.08.010.

54   How Wolves Change Rivers. Performed by George Monbiot. Blog.nationalgeographic.org. February 2014. https://blog.nationalgeographic.org/2014/02/16/this-will-shatter-your-view-of-apex-predators-how-wolves-change-rivers/.

Analogous to the introduction of a new species to an ecosystem, the addition of teleportation technology to our world will be accompanied by numerable consequences, beyond just altering our notion of place, which previously was mentioned. Inspired by the "trophic cascade" phenomenon, I have imagined teleportation as an impactful element (a top predator) to be added to the ecological, as well as, technological, sociological, political, architectural and urban context of our world. Thereafter, I tracked its impacts on the constitutional elements of the system which it was added to as it is shown in the figure below:
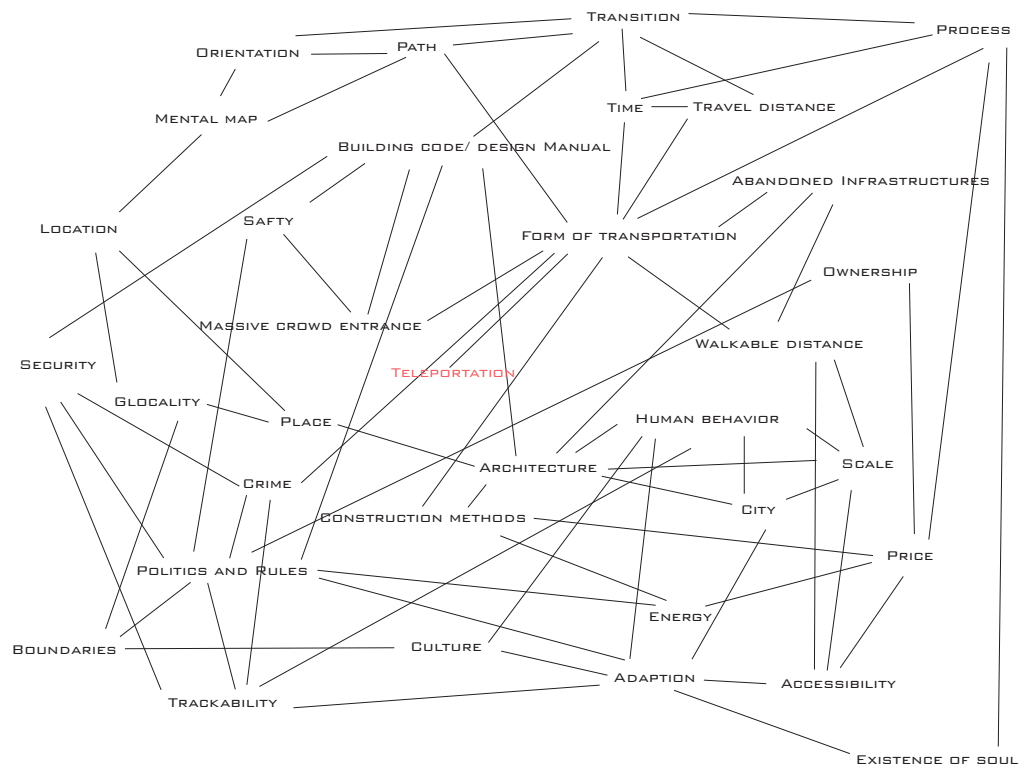
Figure 27: Teleportation Network of Influences

The network of influences, then, functions as a questioning engine, with exaggeration as its propulsion. Countless interrogations of interest can be produced by adhering to a simple mechanism: how would the element in question be affected by and react to the advent, and eventually, the prevalence, of teleportation technology?

Following this method, we can make a long list of questions (brought in six categories:)

Teleportation device:

• What will the teleportation device look like? What is the physical embodiment of it?

• What would be the devices of teleportation called?

• How will the process of teleportation feel like for the teleported person.

• Would two people be able to teleport through one device or the threat of mixing DNAs would not allow for it? Furthermore, what would be the probable solutions for the groups and families with infants or immobile members?

• How would the process of international travel, including payment, travel documents and baggage check look like in the teleportation era? Would those be more inherent within the process of teleportation because the process should not be slowed down as it is defined by its rapidity? Would there be a need for implementation of microchips in our bodies to facilitate this process?

Economics:

• Regarding the cost, energy and time of different types of teleportation, what would be worth to be teleported? Humans? Energy? Goods? And in what scale?

• How the economic value of location would change in response to this phenomenon?

• How would it impact the economy? Would its convenience cause the downfall of other forms of transportation and subsequently the businesses involved with manufacturing of those?

• Would there be a balance between the resulted unemployment and new job vacancies, related to the new technology?

• In the consumerist world, what would be the competition factors between private teleportation manufacturers?

Cultural and behavioural implications and its impacts on our notions

• Knowing that in order to be teleported, one's body would be completely dismantled and rematerialized again, is the person rematerialized at the other end of teleportation the same person? Are we only material or there is more to our existence?

• How would teleportation change the current notion of place?

• Will the current location based time system survive without any alteration, or there would be a need for a new system of time? If yes, what will it be based on? What is the new system need to be like, if the previous one is not found to be useful anymore?

• Would teleportation be a disorienting experience since it eliminates the process of travel?

• How would or mental maps of the cities alter, affected by the jumps between places.

• Would there be any people who refuse to use this cutting-edge technology? What would be their reasons and stories? Would one be able to live a normal life without teleportation, thinking how our lives are dependent on technology today and we almost cannot live without our cellphones today?

• How would the next generation, brought up in the teleportation world, differ from their previous ones? What new experiences would they have and which ones are they going to miss?

• How teleportation impact Online shopping?

Architectural and environmental implications

• Is teleportation going to start as a public means of transportation or a private one?

• How would post systems corporate teleportation. Would we be sending and receiving parcels via teleportation?

• How are the public teleportation stations or terminal distributed within a city?

• If cars are not used after the advent of teleportation, how are cities going to reshape?

• What will happen to the large number of vacant (or abandoned) transportation vehicles?

• What is the destiny of abandoned places, such as airports, subway stations, post offices, hotels, gas stations, parking lots, etc.

• Knowing that teleportation is limited in distance, how would it contribute to the space exploration?

Dangers:

• Teleportation devices would be the new thresholds to any place; what are the pros and cons of this maximized capacity of entrances and exits? What are the possible ways for avoiding the hazards of entrance of too many people to one place at once?

• What are the new crimes that come alongside this technology?

Politics:

• What role will teleportation play in political relations between the countries?

• Will teleportation eventually result in having a global village and erosion of the political borders between countries, or this is a very optimistic expectation?

• How would teleportation contribute to defining the military power of governments?

• Will be there a need for a global currency that can be spent in different places?

• How would Censorship and filtration (limiting the permeability to inside and outside of the borders) restrict the use of teleportation in countries with totalitarian governors? Will there be any countries, refusing to connect to the global network of teleportation?

• Would this technology result in more intensified surveillance of individuals by governments?

• What are the rules and regulations, controlling over the misuse of teleportation?

• Would it provide more security for individuals, especially the Celebrity Politicians and luminaries during the commute between places?

• Will governments build remote places, accessed only through secret teleportation devices for their secret meetings?

…

Our list represents a focused number of questions that we can ask about the impact of teleportation. This list could continue, since almost every structural element of our world would be somehow impacted by this technology. However, even the selected number of questions are impossible to answer on a rational timeline, and here is where a narrative, with its sequential quality (as explained previously) comes to assist in limiting the scope of our speculation. In this way, only the matters that seemed to be of greater importance to the author and those essential to the flow of the story-line appear in the final graphic novel.

In this final section before the story, we will take a brief look at a number of discussed matters and questions that will be addressed in the graphic novel. The goal here is not to repeat the contents of the final product, but to present a few examples of methods of interpretation, by which the questions and criticism of the speculated utopia can be applied to the current context of our world and its elements. By this means, I want to focus on the primary objective of my speculation -questioning the current condition of matters- and give a thread to the audience of my story to pull and unravel the other questions and critiques, embedded within the lines and drawings of the story.

Method of Interpretation

To begin with an example from the story, teleportation is estimated to result in the elimination of cars, which invites us to think about the impacts of cars on the shape of our cities. Comparing the figure ground map of a city developed before the arrival of cars with a map from after their prevalence, suggests that not only the voids between the built spaces (negative space) but also the buildings themselves have been scaled up, responding to the speed and the size of these fast moving machines. The invention of heating and cooling systems also allowed buildings to be much larger in scale, as one needed to have windows for ventilation and light in the past, so buildings tended to be much smaller. The coupling of massive transportation networks with this technological change likely pushed the extreme difference between the ancient city and the modern one.[55]
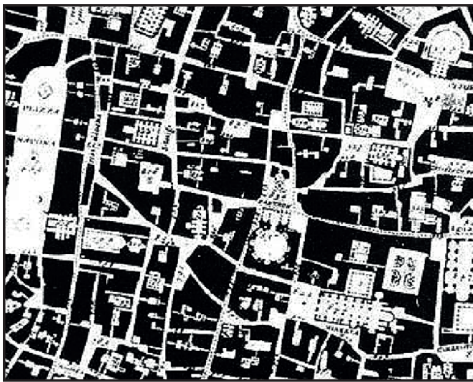
Figure Ground of Toronto in 1923, Drawn by Terri Boake in 1986

Figure 28: Comparison between the figure grounds of a pre-car city and an after-car one

55   Moore, Rowan. "An Inversion of Nature: How Air Conditioning Created the Modern City." The Guardian. August 14, 2018. Accessed August 20, 2019. https://www.theguardian.com/cities/2018/aug/14/how-air-conditioning-created-modern-city.

The negative spaces that used to be places not only for human circulation but also for interaction and socialization have been appropriated by cars and turned into car centric streets, separating people on two opposite sides of the void. The illustration below, using photographs from a poster by *International Sustainable Solutions* visually demonstrates that how much valuable space- space with immense potential for other functions- is devoted to our cars in our cities.[56]
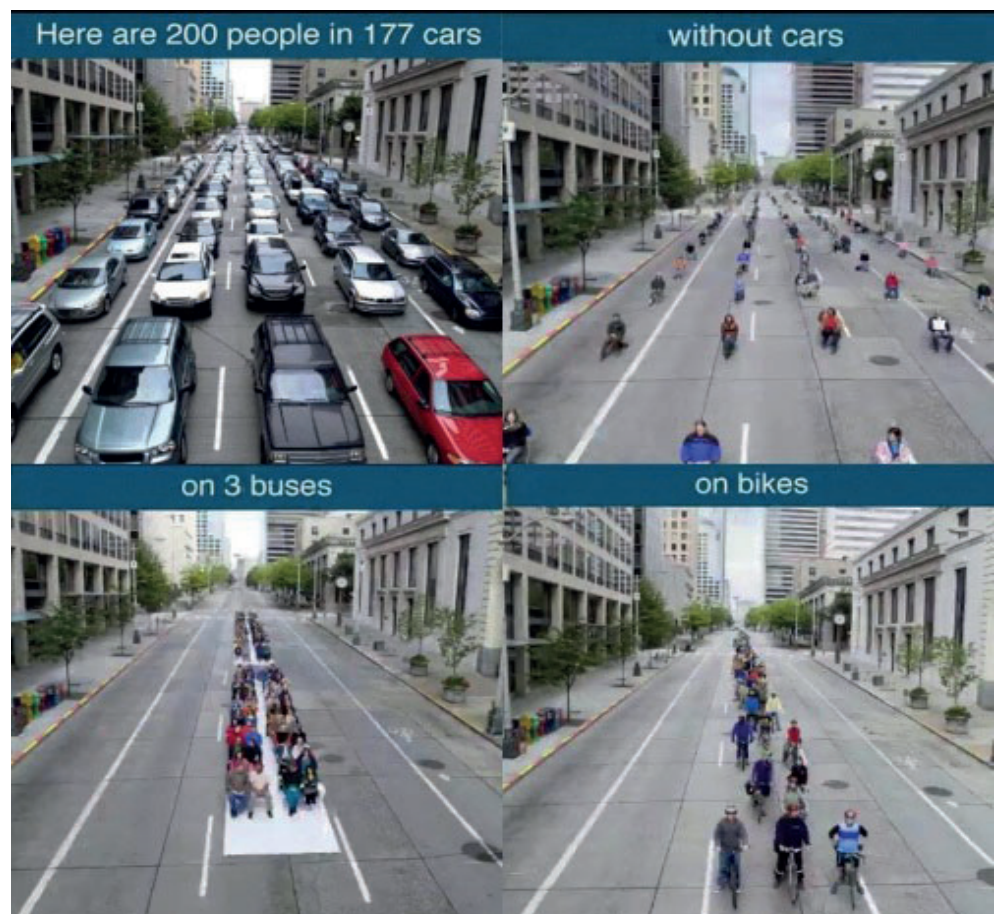
Figure 29: The space that cars steal from our cities

56   Swanson, Ana. "One Image Shows What Cities Would Look like without Cars." The Washington Post. August 10, 2015. Accessed July 24, 2019. https://www.washingtonpost.com/news/wonk/wp/2015/08/10/what-cities-would-look-like-without-cars/?utm_term=.5866be86f266.

Cars do not only require space while moving, but they have resulted in the asphalt coverage of huge areas in cities for when they are idle. This has negatively impacted the environment, as the permeability percentage of the earth has been altered, causing flooding (Hurricane Harvey in Houston) as well as increased temperatures, known as the Heat Island Effect.[57] Additionally, the increased impermeability rate of the earth has resulted in the prevention of a natural recovery process of groundwater. Unbalanced extraction and infusion of water to and from these underground layers and a lack of natural external surface drainage has resulted in the drying up of groundwater near a number of big cities. This problem presents itself through immense sinkholes on the surface of the earth in the centre of or on the outskirts of cities, and sometimes through the differential settlement of the buildings in them.[58] It sometimes take thousands of years for these underground water flows and beds to naturally recover.[59] Although this is a major concern, there are many other compelling reasons to address environmental impacts of radical alterations to the amount and nature of paving in cities.
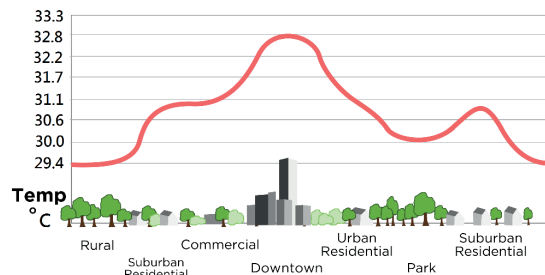
Figure 30: Urban Heat Island Profile

Figure 31: A sinkhole in Florida

57   Rogers, Adam. "Cities Cause Hurricanes to Dump Extra Rain on Them." Wired. November 15, 2018. Accessed August 21, 2019. https://www.wired.com/story/cities-cause-hurricanes-to-dump-extra-rain-on-them/.

58   Grimaldi, TJ. "What Causes Florida Sinkholes?" Mcintyrefirm.com. September 08, 2015. Accessed August 20, 2019. https://www.mcintyrefirm.com/what-causes-florida-sinkholes/.

59   Groundwater Management the Search for Practical Approaches. Rome: FAO, 2003.

As the figure demonstrates, downtown Galt, in Cambridge, Ontario, where the University of Waterloo School of Architecture is located, has devoted more than 30 percent of its area to cars, 18 percent of which are only parking lots.
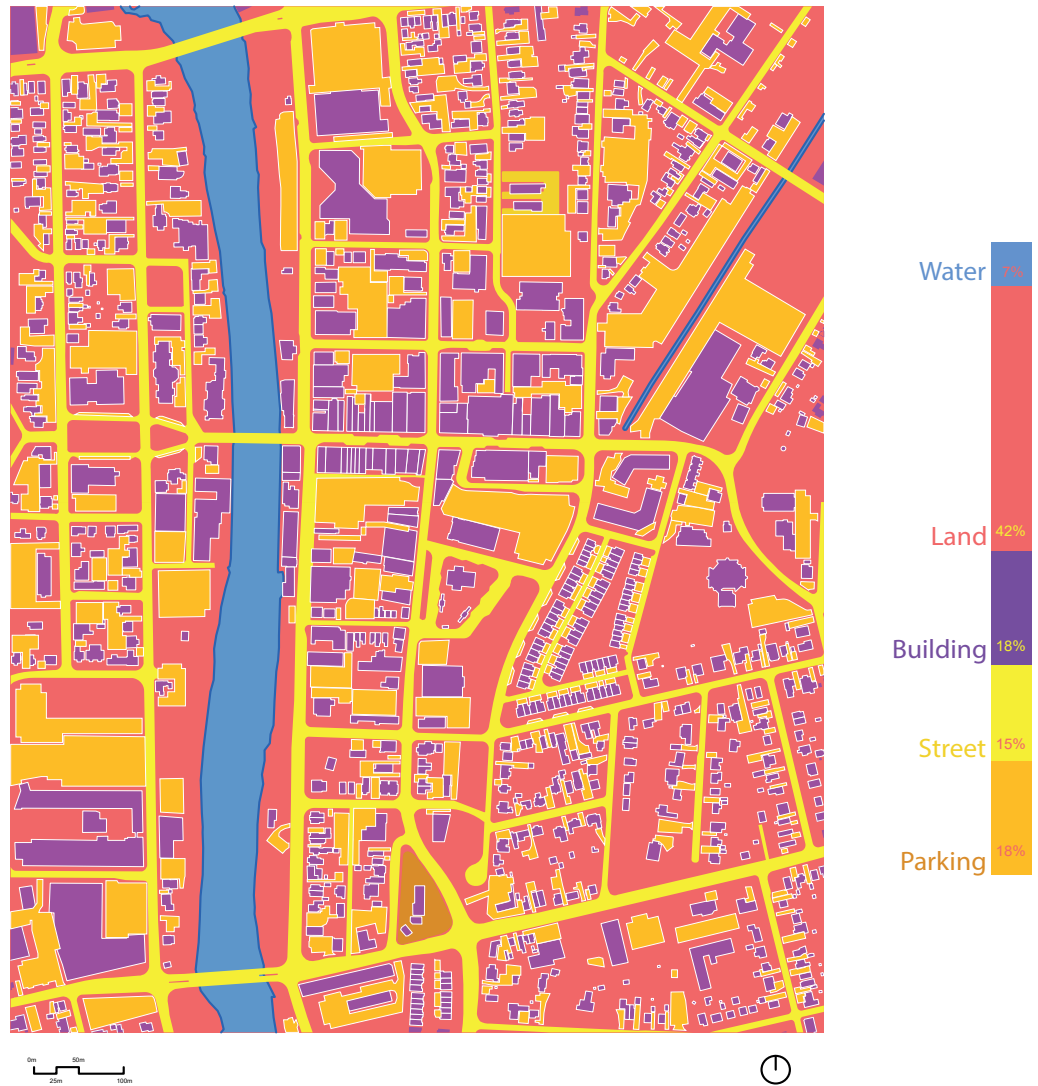
Figure 32: Downtown Cambridge, 38 percent of the area of the city is dedicated to cars

Furthermore, the enlarged urban scale has become a cause of disorientation for pedestrians. The graphic novel addresses how the inhuman scale of modern urban textures and elements (sized in response to big and fast cars) and the increased gaps between urban checkpoints and landmarks have resulted in the inability of pedestrians to sense their own movements.

The impact of scale on orientation within a space first captured my interest two years ago when I had just arrived in Canada and was walking in the parking lot of a plaza. Although I cannot remember what franchise I was walking towards, I remember that it took me far longer than I was expecting to reach to the destination. The enormity of the building I was approaching and the vastness of the parking lot deceived my senses about my distance from it. This deception does not apply to drivers, since they are moving faster and the constitutional elements of their environments react sensibly to their speed of movement. On the other hand, the scale of the elements and their response to one's normal walking pace in older urban textures developed prior to the advent of cars (such as where I was born and raised), would allow one to sense movement and orient oneself in space.

Figure 33: Smart Centre parking lot, Cambridge, Ontario

Quito, Ecuador

Plovdiv, Bulgaria

Yazd, Iran

Verona, Italy

Figure 34: Pre-car urban textures

The matter of disorientation, which has a dedicated chapter of the graphic novel to itself, is also a result of the elimination of the travel process. The instantaneous displacement through teleportation, which terminates the visual (as well as auditory and tactile) perception of the connecting space, can be compared with the similar experiences of today's life, such as riding subway trains. Most of us have experienced the temporary disorientation, coming up from an underground subway station after commuting from our departure to our arrival place without any recognition of the physical space between those two places. There have been proposals for this problem, but it has never been fully solved.[60]
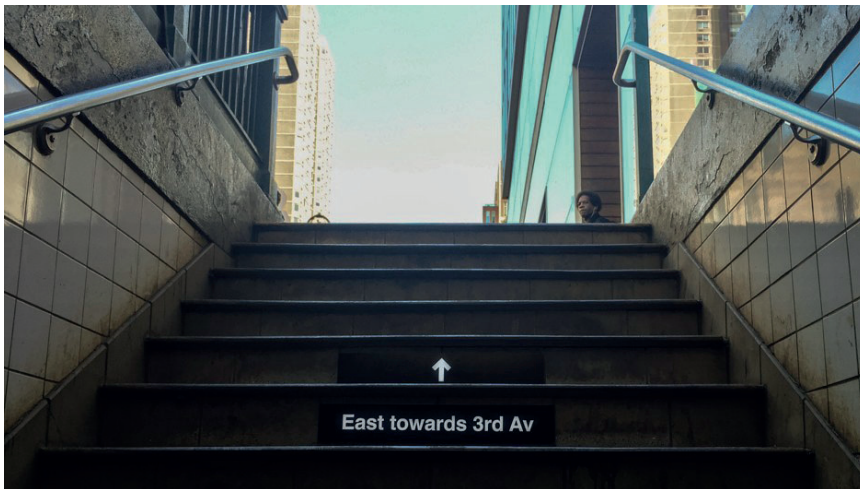
Figure 35: Orienting sign on the exit steps of a New York subway station

There is another problem associated with jumping between places, which remains with its victims and even builds up in those relying heavily on underground transportation systems (and maybe in the Hyperloop users in the near future). Subway users, after a while missing the connecting spaces between the subway stations that they are traveling in between, start to experience fragmentation in their mental maps of the city. They have many unknown areas in their imagined maps of the city which might never become known to them at all. However, one may never acutely feel the effects of such fragmentation in one's lifetime even though it is undeniable that a cohesive mental map would help with navigation. I, myself, have suffered from the fragmentation of my mental map as a constant subway user, during my stay in Toronto which has often resulted in disorientation and the inability to navigate the areas far from my usual destinations.

60   Gan, Vicky. "How to Get Your Bearings at Subway Exits." CityLab. June 18, 2015. Accessed August 20, 2019. https://www.citylab.com/life/2015/06/how-to-get-your-bearings-when-exiting-a-subway-station/395966/.
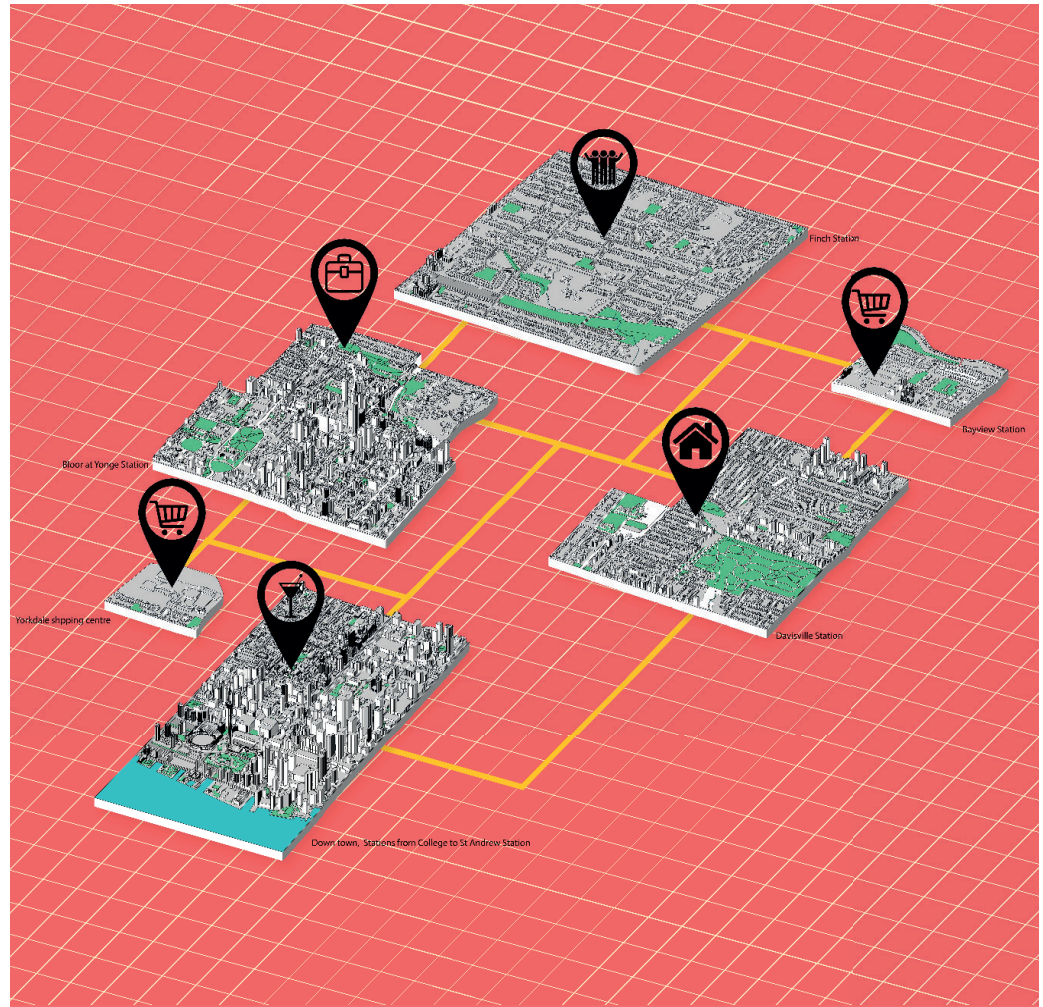
Figure 36: Fragmented mental map: In this illustration, my mental map of Toronto after 4 months of living and working there as a non-driver, subway-user is depicted. The existence of some serious gaps between my routine destinations does not let the map become consistent. Furthermore, the geographical location of some pieces on the map of the city are still unknown to me while I have visited them a number of times.

Method of Representation

The final product of this thesis is represented in the form of a graphic novel entitled *Teleportation: the Possible Leap*, in which a story is told through a mixture of text and drawing. It leverages the concept of teleportation to raise questions like the ones discussed in this section of the book: How have cars impacted the shape of our cities and our environment? How has our notion of place been altered by the advent of communication technologies? How have fragmentation in our mental maps of our cities and the subsequent disorientation affected our daily experiences?

At first, due to my interest and experience in the medium of animation I experimented with making a short animated film about teleportation. Soon, I realized that making a good quality animation is excessively time-consuming as well as expensive, and without enough funds of sufficient sponsorships and a crew of professionals, it was beyond my scope. I did not give up on making an animation, but decided to tell my story in form of an animation with a considerably lower FPS (frames per second rate), transforming it into more of a storyboard. The chosen method of representation through the jumps from one frame to another has also allowed me to emphasize the feeling of teleportation, in which one jumps sporadically between places. The concept expressed in the jumps between the frames is also repeated in the style of drawing used in each of the different chapters, as each chapter has its own unique style of drawing. However, a general consistency has also been preserved in terms of style and tone. For example, in the chapter titled *Disorientation* when the story becomes more action-packed, the drawing style becomes closer to that of DC comics, while in an earlier chapter, where the architecture of the teleportation device is discussed, the style inclines towards the works of the paper architects, Brodsky and Utkin.

Through a reading of the graphic novel, one is able to flex one's curiosity, ask many more unanswered questions and perhaps go on to investigate them in their own separate theses. Among the matters that the novel encourages us to engage with are: the impact of governments on the advancement of technology as a means of power, the inevitable adoption of prevalent technologies and the role of consumerism in this adoption, the displacement of the frontiers of countries and cities via the emergence of physical and virtual entrances within their borders, the relationship between identity and environment, and countless other questions which are embedded within the lines and drawings of the story, to to be unraveled and explored by the audience.

One last, but not inconsequential, question which thinking about teleportation asks us to consider is "how has our impatience, which is a result of the ever-increasing speed of technologies, changed our expectations?" Today, even air travel seems like such an endurance run to us, when in fact, what used to take the explorers months by boat or convoy has been reduced to mere hours by air. Now, our tolerance threshold has lowered to the level that we can hardly tolerate a small lag in our live connection to the other side of the world. *Teleportation: The Possible Leap* imagines that the process of travel is utterly eliminated to remind us about its importance and the joy that we are missing by removing it from our lives. This story begins to suggest that the process, the journey, and the physical path to the destination are not of any less value and pleasure than the result or destination itself. It makes us ask ourselves in more ways than one: why rush?

PART FOUR
THE GRAPHIC NOVEL

TELEPORTATION

THE POSSIBLE LEAP

CHALPTERS

12 DISORIENTATION

6 LOCAL, PUBLIC TELEPODS

INTRO INTRODUCTION TO THE STORY

2 SCIENCE AND TELEPORTATION

11 ABANDONED INFRASTRUCTURE

1 MATTER OF PLACE

3 PHYSICAL EMBODIMENT OF TELEPORTATION

15 SPLIT SOCIETY (ADOPTION VS REFUSAL)

14 DNA COCKTAIL

16

THE TELEPORTOPOLIS,
THE CAR-LESS/BORDER-LESS UTOPIA

5

TELEPORTATION AND
MILITARY

13

NEW THREATS/CRIMES

8

PRIVATE TELEPODS

7

SPEED WINS

9

BORDER CROSSING

4

TELEPORTATION, HUMAN,
BODY, SOUL AND IDENTITY

10

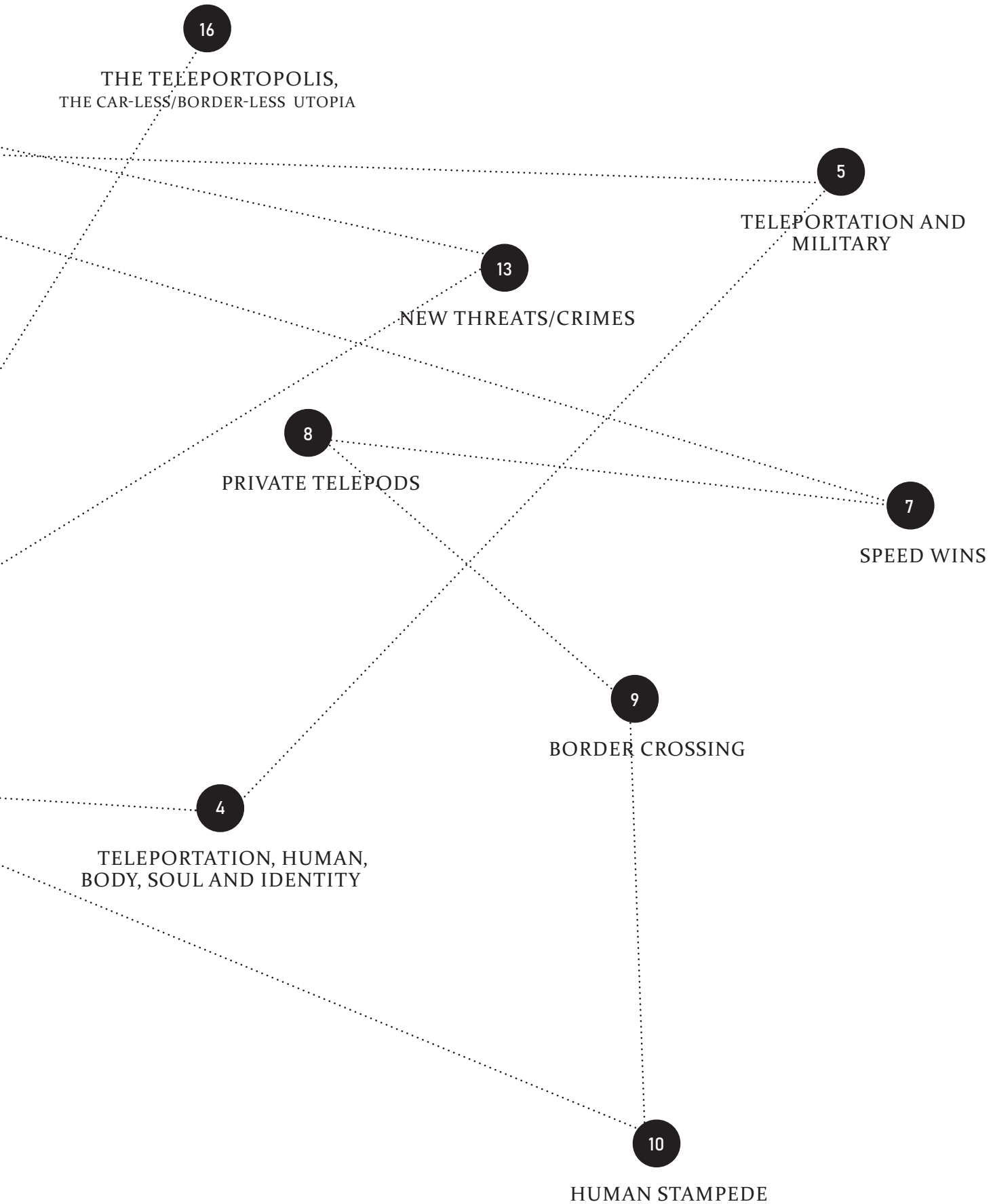HUMAN STAMPEDE
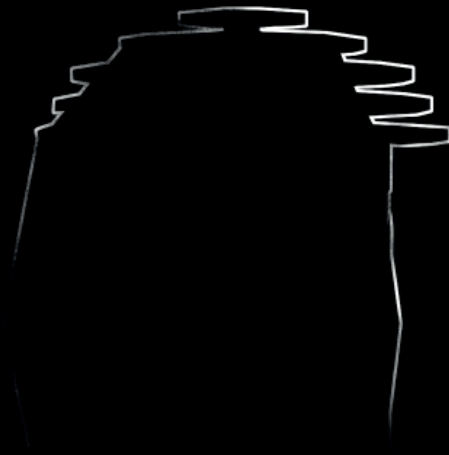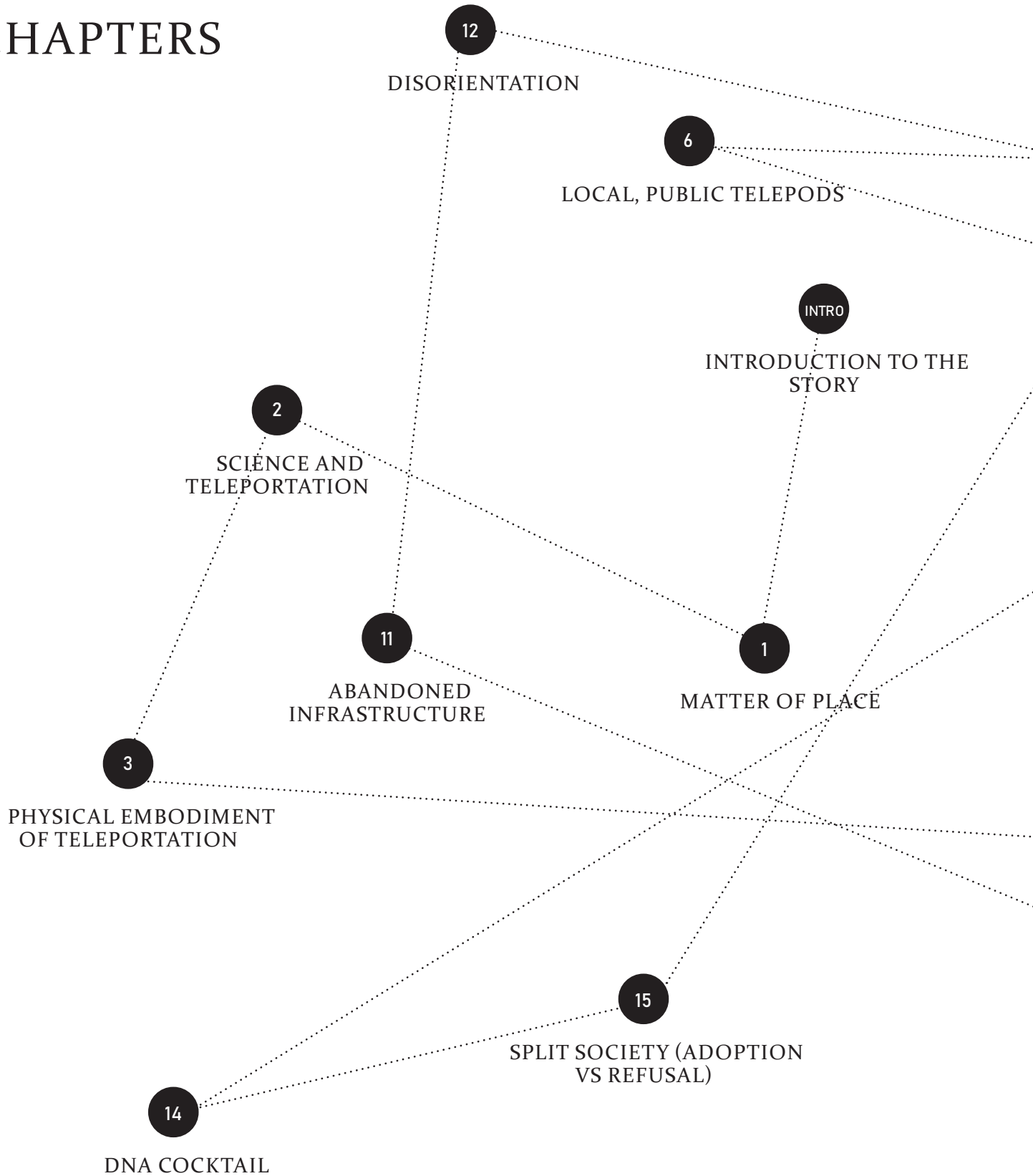
Figure 38: Chapters web

INTRODUCTION
THE MAGIC DOOR

Until the age of 26, I had never cried once in my entire adult life. My eyes showed no signs of tearing when my best friend died of burn injuries in high school, when the love of my life left me I became more stoic than ever, and I met the knee injury that tore my ligament in two with clenched teeth. In these moments, I often felt like I was an unfortunate example of the adage that "men don't cry." It wasn't until I stepped onto the plane from Krakozhia to Toronto that I felt my cheeks get hot and my eyes well up for the first time since I was a child. I was leaving the country I was born and raised in for two years to continue my education abroad. Even as the refrain "life will be better in Canada!" seemed to spill out of the mouths of every friend, relative and stranger that caught wind of my plans, I knew that given the chance, I would happily make my way home again without a second thought. Tears started to roll down my face as I buckled my seatbelt, and I haven't gone a day without crying since. I remember them hitting me all at once that morning, the images of my dad having no one to help him fix the AC in Krakozia's summer heat and mom having nobody to argue with about whether Rumi, celebrated poet and philosopher, was gay or not. Now, there would be nobody around to give a damn about Rumi's sexuality. There would be no one living in the room next to theirs, keeping the door open all night to watch out for them, listening for anything out of place. What hit me the hardest, though, were the thoughts of my country. I knew I was only a small, untalented dot in a huge flood of educated youth, those who were supposed to stay and rebuild their country, but were instead fleeing home, seeking a better life elsewhere and leaving their searching nation behind. The moment we left the tarmac, I became a counterexample to "men don't cry"; now I was a cry that happened to be a man.

In 2020, that tragedy suddenly seemed like a small one when I considered what faced me then. My life turned, almost instantly, into a nightmare of loneliness. This was the same year I had gained a small amount of notoriety for two ridiculous high-rises I had designed for a well-known firm in Toronto. I never imagined that my Government would ban me from coming home for life, all because of one interview with a channel that had just recently become "subversive" in their eyes. Unlike the time I left home, this forced separation created a dogged disdain for distances, an unstoppable urge to undermine a system of borders and checkpoints that was keeping me from where I most wanted to be.

For the next two years, the only person I had, physically, around was Tara, my girlfriend, but even she wasn't a constant comfort. We had met in Toronto through a friend of mine, but she had started teaching political science at Laurentian in Sudbury while I had to stay in Toronto five days a week for the project I was working on. Luckily, we managed to meet a couple of times a month, but the long-term loneliness was driving me crazy. The dreams started every time my head hit the pillow. When I closed my eyes, I saw myself in my old room back home, where I used to keep my liquor bottles under my bed and the letters from my ex-girlfriend behind the science fiction paperbacks and textbooks on the shelf. The smell of delicious stew and the buttery rice which my mom used to cook would drag my floating body out of my room, and there I would see dad playing with the niece I never got the chance to meet in person. I could see my older sister laughing at my dirty joke while covering her ears, pretending to be disgusted, and her husband, an enemy of empty glasses, making his way around the room with a bottle of wine. My little sister, as beautiful and mature a young lady as she looked in the pictures my family would send me, would shuffle the cards, inviting us all to join in another round of Hokm. I would see my mother so clearly before I would wake up, again and again, losing the debate to her smile, shouting, "Ok, you win! Rumi was gay!"

Even though there were more than 10,000 miles between our doors, I still used to keep my room door open in the night to hear if my parents needed help. I almost believed that everything I was seeing in my dreams was happening just on the other side of the wall. I wanted to assume that my door would open into Tara's apartment, and she would come slip in next to me right after she finished brushing her teeth.

One night, my obsession got the better of me, and I spent hours searching for a way to circumvent

the separations, all the way into the morning. I came across a thesis by a man only a couple of years older than myself named Winston Cook, a quantum mechanics Ph.D. student. His paper explored the kind of door I had been longing for, connecting two distant places. I read all 74 pages again and again, even on the weekends when Tara expected me to hold her through the night, fascinated by the premise but staring blankly at the endless equations I couldn't bring my untrained mind to understand. I gleaned from the words in English that he was talking about some way to achieve nothing less than what I had read about in Star Trek and Flash Crowd: teleportation.

I should contact him, I thought to myself, believing that this could be the way, not only to find a way home undetected, but also the way to a future where distance was meaningless. I sent an email to an address I found after a little bit of digging, introducing myself and indicating my interest in knowing more about his ideas. I told him I was willing to meet him in person, and suggested a little bit of financial support and a free place for a lab to operate his experiments to sweeten the deal. I waited weeks for his response, but then, finally, a promising reply that would change everything. I was going to meet the man behind the stuff of dreams.

CHAPTER I
MATTER OF PLACE

I arrived at the café a few minutes earlier than I was supposed to and sat in a cozy corner waiting for Winston Cook, my physicist date. He entered the door just on time. In his simple grey turtleneck sweater and a navy blue blazer hugging his fit body, my first impression was that he looked more like a secret agent from the movies than a Ph.D. candidate in quantum mechanics. Maybe I had expected a lanky nerd, but now I was sitting in front of a virtual 007. He had the smartest smile on his face, the kind you could tell was genuine, which managed to stay for our entire conversation and put me at ease. The waiter received the same warm expression when Winston gave his specific coffee order. I had always liked men who know precisely what they want, maybe because I had never succeeded in joining their ranks.

I interrupted the customary small talk that began the meeting to ask him to explain his idea to me, and he was happy to launch right into his life's work. Unsurprisingly, I only followed a fraction of what he was saying. After the 10th time he mentioned 'quantum entanglement" I finally dared to ask what it meant. "It's the quantum state when particles share the exact same state and act dependently even when separated by a great distance, and that has made quantum teleportation possible" he said matter-of-factly, with the smile still spread across his face to make you feel like you had known all along.

I changed the topic to a recently published article of his, and the reaction by the academic community, just to be able to understand what he was talking about. He never lost the grin while describing his professors losing trust in him and his ideas, and the cuts to his funding after five years of work they had deemed "inconclusive." He explained how academia failed to appreciate his record of teleporting a molecule for the first time, when science could to-date only teleport atoms and subatomic particles, all because his documentation of what he called "the instance" was not enough to prove it had happened.

We moved on to the materials and equipment he needed for his experiments, and I reiterated with renewed enthusiasm that I was eager to invest myself and my basement into his idea. I expected to see him excited at my erratic proposal, but he responded with a gentle, yet pointed, question: "Why is this important to you? As an architect... Well, to be frank, I'm not sure how teleportation would be of consequence to an architect."

I thought it was too soon in the relationship to reveal the door of my nightly travels, so instead, I used another skill from architecture school, and talked my way around the subject.

"Well exactly!...

Figure 39: Meeting at cafe
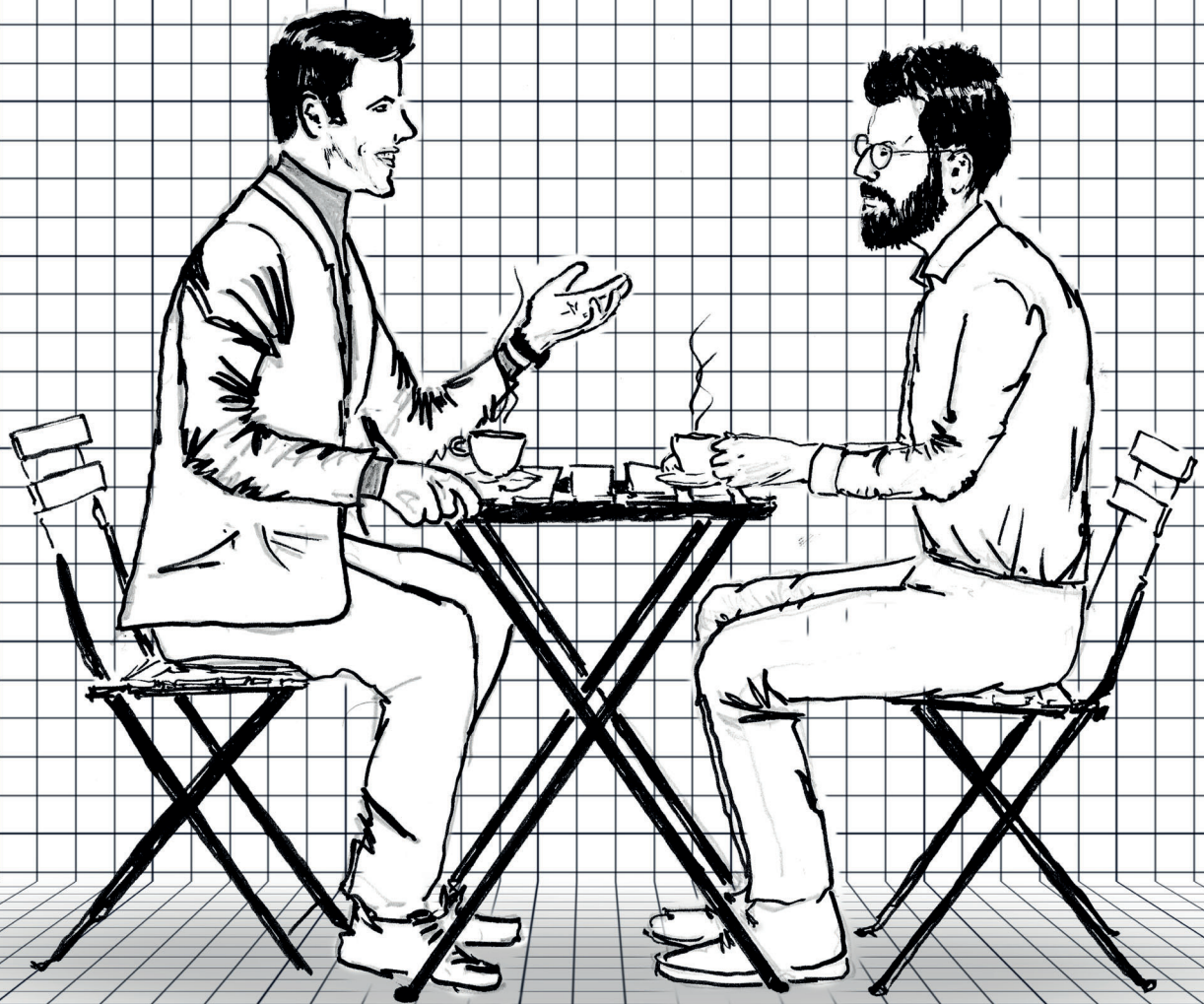
... Architecture, you know, is all about place and space and I think our notion of these things would change after teleportation." His attentive eyes launched me into a monologue. "You see, we conceive of a place by qualities besides its geographic coordination, like what is inside or outside of it, by its occupants, by the objects we find in it and by its constitutional elements, by time and the angle at which the sun shines on that place at different times of a day, by how it is oriented on the bed or the landscape it is settled on. We define a place by the path on that landscape which takes us to it, and maybe by the amount of time we spend on this path to reach to that place. Take this cafe as an example, If you didn't know the name of it, how would you describe it to your friend? You would use the elements you saw, heard, smelled or even touched on your way here." His brow started to furrow with wrinkles I supposed the young man in front of me had gathered by thinking extremely hard for years. I continued: "You may describe this place by the old church that you passed by on your way here or the feeling of sunlight on your skin as you were walking under a big tree, or the smell of bread when you were passing by a bakery and tell your friend that he has to turn right at the intersection after he smells the same. Isn't it amazing that our notion of place is so dependent on the time and the path taken to one?" I felt confident enough in his expression to call him by his first name. "Winston, your technology will change this notion, just as its predecessors have. Think about it! Now, the network or internet quality has been added to the factors we remember a place by or how we describe it. But the impacts of teleportation on our notion of place would be so much bigger. Teleportation," I began, becoming more and more convinced by my own words, "would eliminate the path and the time taken along it, rendering any place instantly accessible, and therefore, create places independent of their landscapes. In my vision, post-teleportation places would be conceived as interiors, floating in space, remotely connected to each other through a virtual web. Teleportation erases the value of the landscape and the obsession with location since accessibility is guaranteed, even if something is in the middle of today's nowhere. Even if it was on top of the Himalayas, I could be home in a blink of an eye!" Then, in an attempt to seem as intelligent as I hoped I looked, I finished with, "Your idea, Winston, would have extremely interesting economic impacts, and homogenize the prices of property."
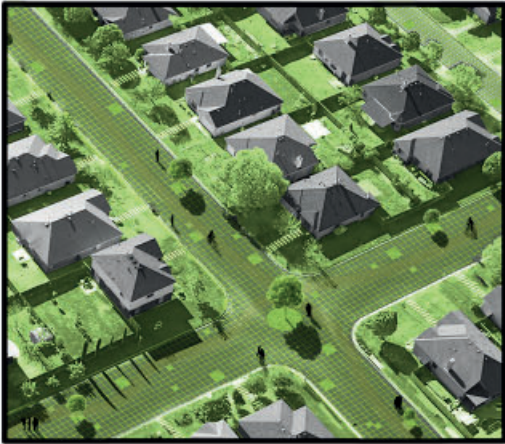
Figure 40: Sam's teleportation world

I flashed my best copy of his smile back at him. He wove his fingers together and put them on the table, shrugged his sharp eyebrows and told me that he also spent a lot of time thinking about the world after teleportation. "Sam, I like the picture you are painting. Although..." he paused, pensively, "My vision is perhaps not quite as exaggerated. In my imagination, the landscape would not be eliminated per se, but it would, in fact, gain more value, especially when considering that transportation vehicles would no longer take up the space between buildings, and could be repurposed by pedestrians and cyclists without fear. I believe that it would matter very much where a place is located, since the walk would be a choice, and therefore, a more cherished experience. Accessibility would still be of great importance, I gather, for walkable distances. Don't you think, Sam, that you would still care about the view from your window, and your surroundings?" I wondered when the last time may have been that I had opened my curtains as he continued. "I would rather be surrounded by... I believe you would say, eyes on the street? Rather a community I feel safe in than the Himalayas, even if I can teleport in the blink of an eye."

As he laid out his philosophy, I started to draw a diagram of floating rooms in a nebulous void in my mind, thinking to myself that his world was outside of him, while mine was inside of me.

In the end, I let him pay for the coffee and he finally accepted my offer.

Figure 41: Winston's Teleportation world

In the basement, we built our lab…

Figure 42: Lab in the basement

CHAPTER II
SCIENCE OF TELEPORTATION

You never expect to wish for houseflies to talk. We certainly didn't. In our primary experiments, as we dismantled hundreds if not thousands of them before the eyes of their friends and families, we were content with, if not grateful for, their silence. Winston called it what it was: a mass genocide against Canadian houseflies. I had to admit it was true, even though, unlike me, he didn't believe the process was harmless. He had his distinct logic about things. He believed that their absence would have a remarkable and potentially destructive impact on the ecosystem through a chain of influences and it became a never-ending argument!

No, you never expect to wish for houseflies to talk, especially when you are cutting them into halves. You want to assume that they are happily, silently, sacrificing themselves in the name of your undertaking for the greater good, in experiment 1 just as in experiment 453.

The 453rd fly died too, just like all his brave predecessors, but this time, everything was different.
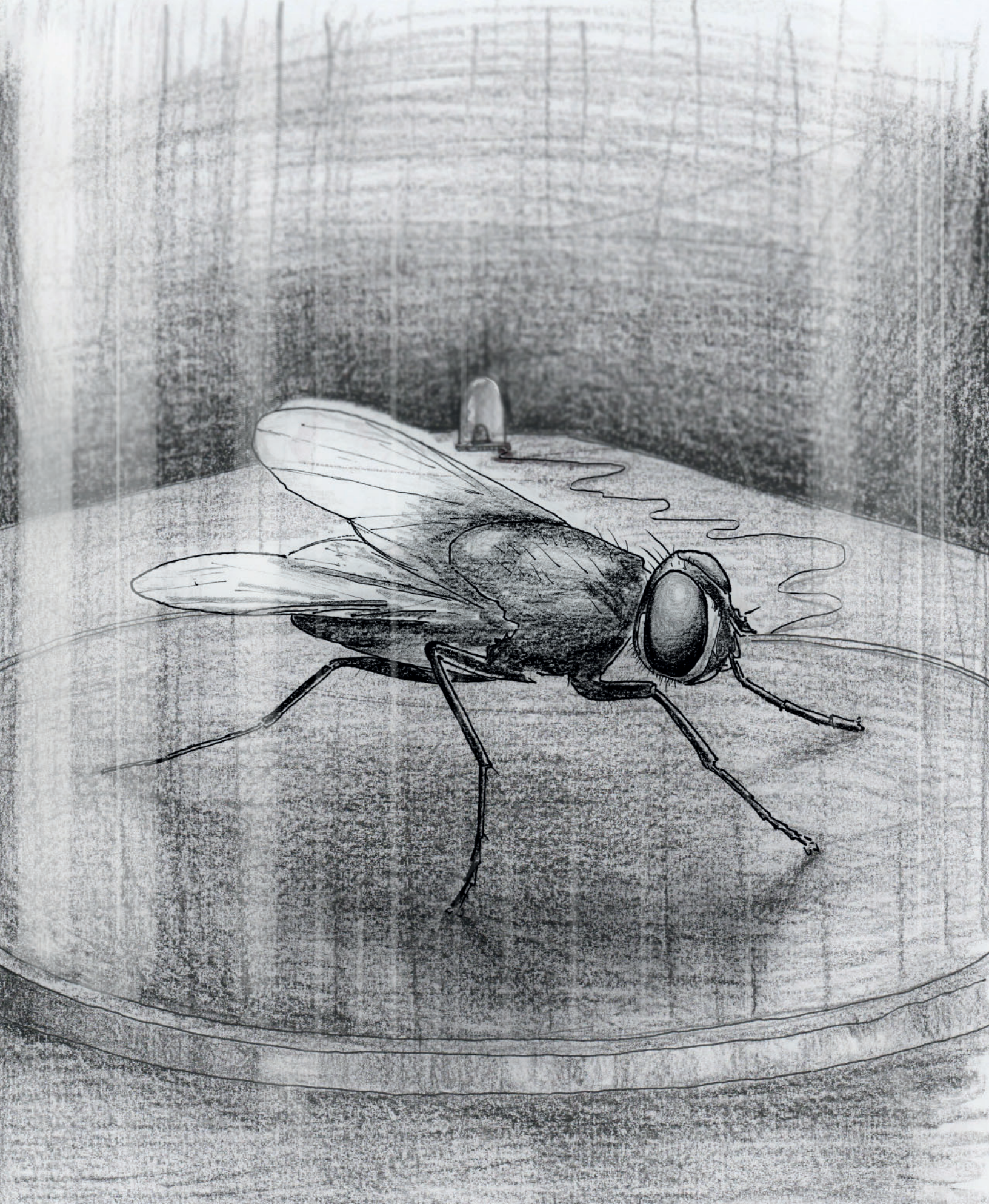
Figure 43: The fly

It had taken my partner 452 victims to learn that the process of dematerialization, or scanning, and rematerialization, or printing the scanned data, required excessive energy and time. The limited bandwidth we had scraped together in our lab also meant that transferring the (in virtual terms astronomically heavy) collected information was taking longer than the time a living creature could survive in the form of quantum data. That is to say, there was only so long a fly's essence could exist solely in wires and hard drives. Winston had believed from the start that quantum entanglement, a concept I could never fully grasp, could be the answer to teleporting non-living objects since they could wait in a quantum state for as long as they needed. As far as I understood, this was not an option for us living breathing creatures. My brilliant friend's solution was a faster alternative: the ever-mysterious process he plainly christened "DNA entanglement."

Between experiments 452 and 453, Winston spent six months building DNA scanners and printers and adding them to the teleporting device. The final result worked as a combined system of quantum scanners for tracking and scanning the information which Winston referred to as the "nonphysical, electronic signals in a creature," but what I, much to his annoyance, liked to call mind or soul, and DNA scanners for the materialistic facets of the body.

The result was astonishing; half of a fly was teleported! In our excitement, we hardly had time to consider the other half. After all, the test subject never said a word about it.
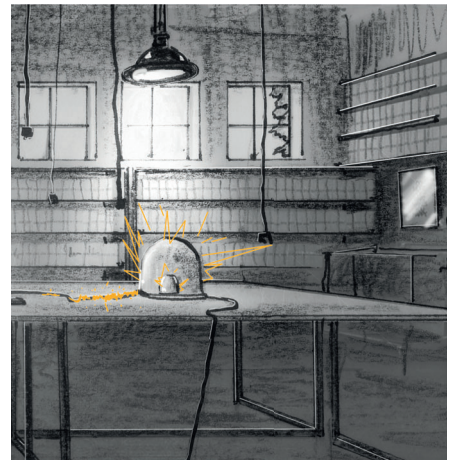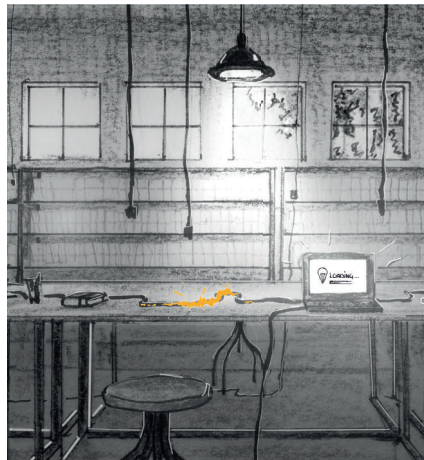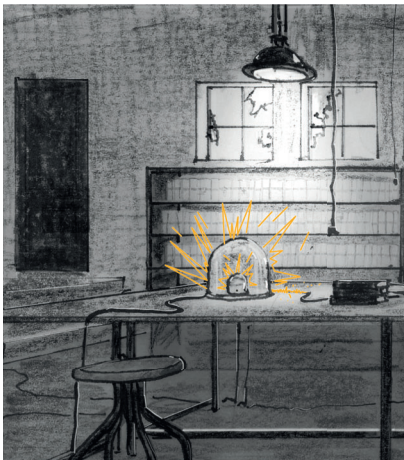

Figure 44: The incident

19th of October, 2023

Figure 45: Fly #453

FLY #453

A few hundred dead or severely injured flies were sacrificed to perfecting DNA entanglement, and finally, it seemed their suffering had not been in vain. The otherworldly device was finally ready and apparently safe enough to try with a human, given we built a replica to the scale of our ambitions..

At that moment, the unexpected happened. Suddenly, I wanted nothing more than to hear in their own small voices how it had felt for the last surviving flies to move from point A to B without moving at all. We knew that the teleported fly was physically the same; consisting of the exact constitutional elements from before and even exhibiting the self-same behaviours post-teleportation, but we were infinitely curious to know more about the experience in that fraction of a second when it was being dismantled and re-materialized.

How much pain did it feel? Did it recognize itself after its unprecedented journey? Did it believe itself to be the same fly? Winston didn't like to speculate, much less personify our little martyrs, but I obsessed. The only thing that could satisfy our respective curiosities was to try it ourselves.

You never expect to wish for houseflies to talk, but at that moment, it was all we did.

Figure 46: Where Teleportation is invented

CHAPTER III
PHYSICAL EMBODIMENT OF TELEPORTATION

Putting my anxieties about the next great test aside, it was time for me to flex my muscles and let Winston watch for a change as I set to work drawing up the first human-scaled teleportation device. I had designed a good number of buildings in my short career, from small houses to ridiculous villas, low-rise, and high-rise towers, and even a couple of wonky eco-living spaces. I had a number of terminals and even a bridge in my transportation portfolio as well, but all of these projects, challenging and new as they were for me at the time, had precedents to refer to, study, and learn from. Not so for the teleportation booth, which I was tasked with designing, or rather, inventing. The first of its kind, it changed my design process entirely.

Then again, I thought, as I contemplated my never-before-attempted mission, what is the design process? What path is taken to the final answer? If I was honest, I never really knew. I usually satisfied myself with the vague notion that there were a series of steps, sometimes forward, sometimes backward, the designer had to take within their mind; a process that consumed the knowledge, memories and even feelings of the metabolizer, but deemed it too complicated, magical perhaps, to be described and left it at that. Even though I had always made attractive, laughably simple diagrams to satisfy my colleagues and clients which illustrated in orderly detail the evolution of ideas, I always knew I was lying. Nothing was ever that neat, much less beautiful. In fact, it was often so messy it was painful. On the other hand, I had always been in love with the answer, with the result, or, to put it in the terms we were working in, the destination. The ending was my comfort zone. Maybe, I wondered, my love for point B was the real reason behind my fascination with teleportation, a technology which eliminates the path and renders the destination instantly within one's grasp.
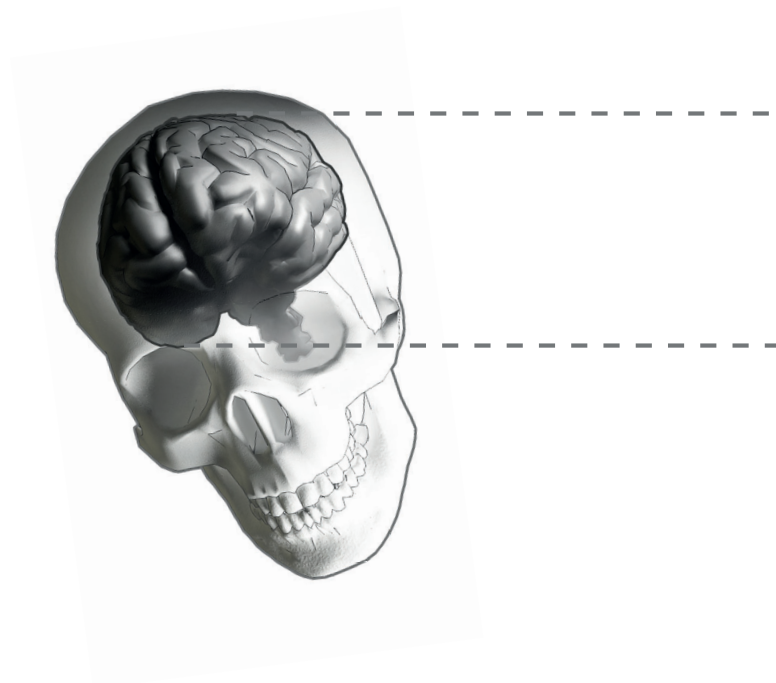
Figure 47: Sam, designing the first Telepod

THE TELEPOD
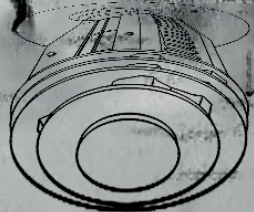
The strings I drew together in my mind tugged on memories of teleportation from the science fiction I had been obsessed with in my youth. The first thoughts were of people who contained the extraordinary ability in themselves, like Winston's equals, Doctor's Manhattan and Strange. My mind quickly shifted to flickering pictures of infrastructure, fictitious civilizations in which "beam me up" was the norm, or where the powerful system disguised itself in something as inconspicuous as a police box. In our conversations, we had now affectionately dubbed the infant device a "Telepod", to pay homage to yet another favourite film.
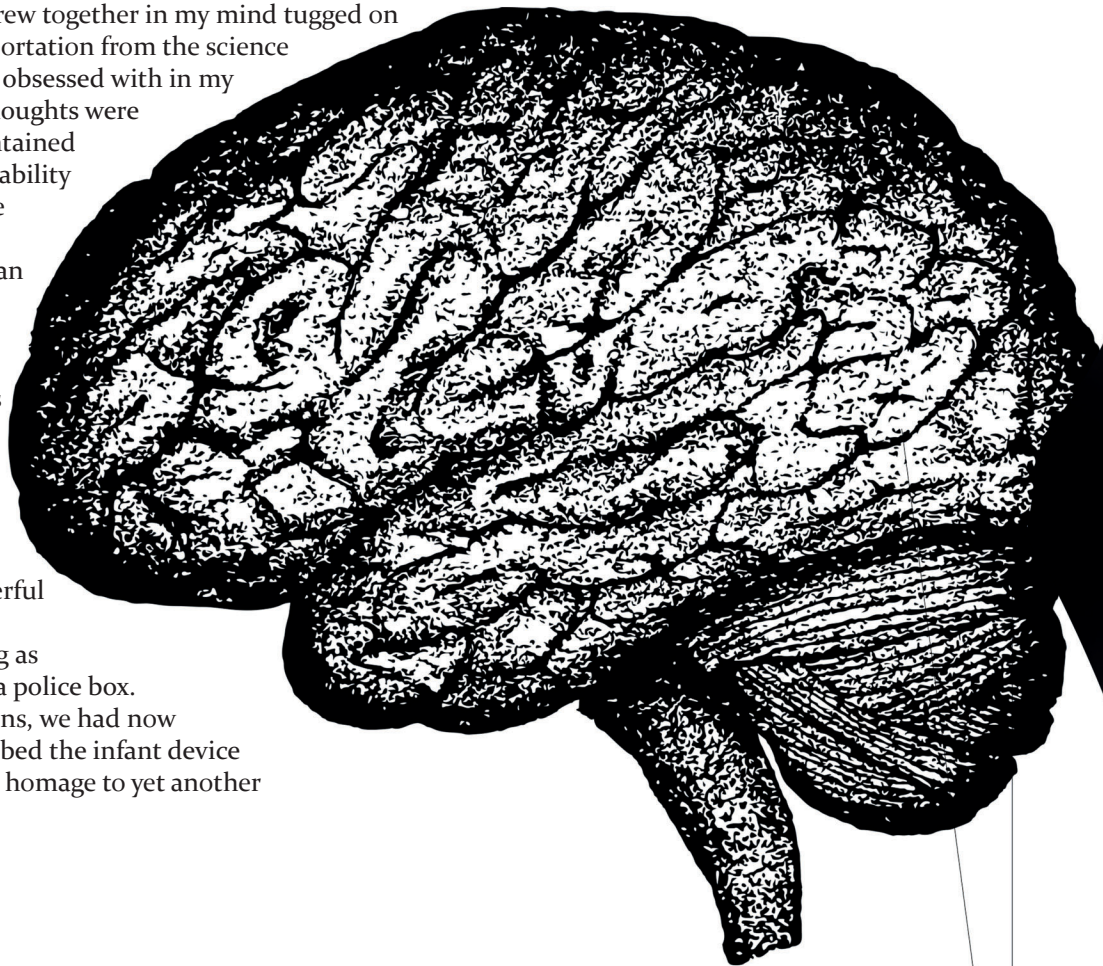
visual memory

Figure 48: Memories of teleportation

PHYSICAL EMBODIMENT OF TELEPORTATION
1. TRACES OF THIS EMBODIMENT IN SCIENCE FICTION

Image from: DC Comics

Dr Manhattan, a DC fictional character with the superpower of teleportation.
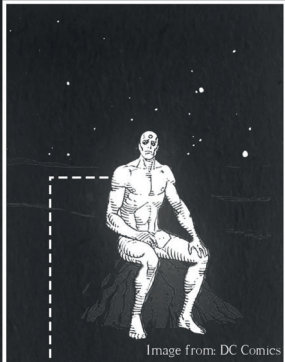There are a lot of examples in science fiction stories, where teleportation is an extraordinary ability or a superpower that a character poses rather than it being a technology happens through a device that everyone can use. Among these characters: Doctor Manhattan, Deadpool, Metron, Ambush bug, Lock Jaw, Doctor Fate, Blink, Faith, Night Crawler, Goku, Ugo Girl and David Rice from the movie Jumper.

OBSOLETE

CREDIT CARD READER
COIN SLOTS
TELEPHONE DILE

150mm
210mm
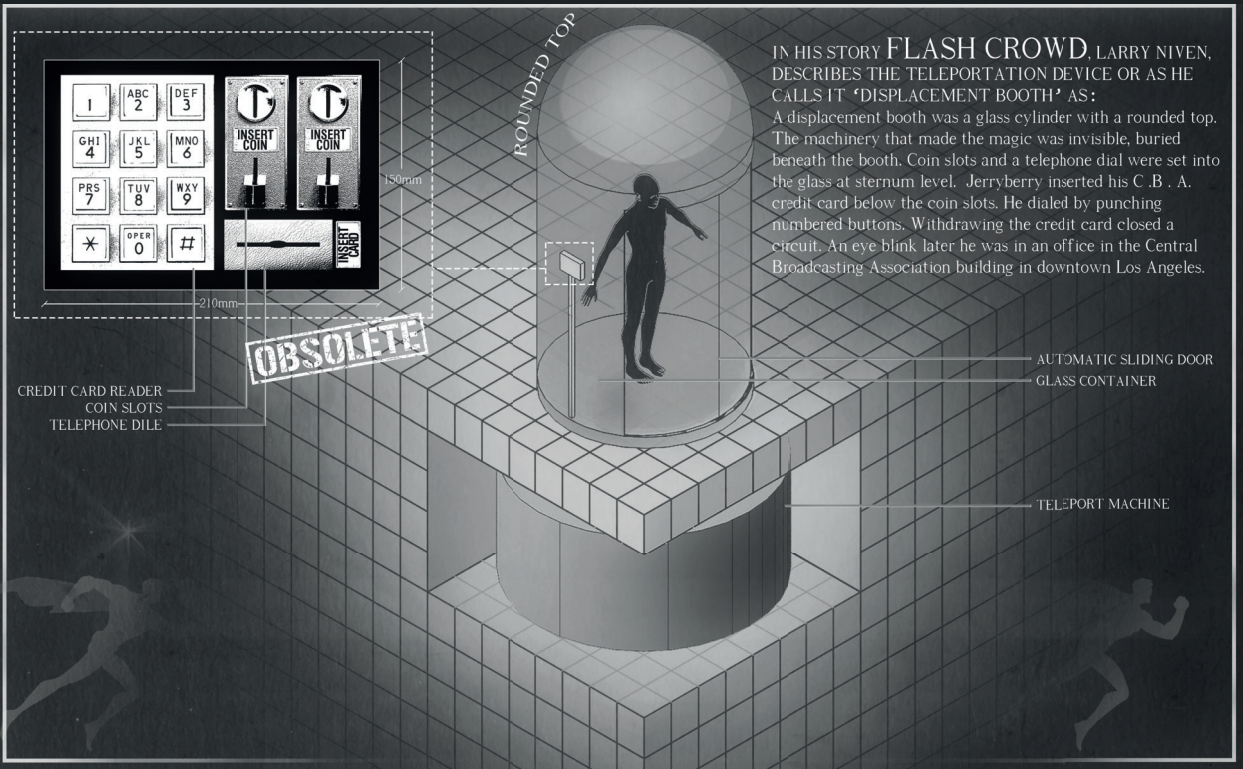
ROUNDED TOP

IN HIS STORY **FLASH CROWD**, LARRY NIVEN, DESCRIBES THE TELEPORTATION DEVICE OR AS HE CALLS IT **'DISPLACEMENT BOOTH'** AS:
A displacement booth was a glass cylinder with a rounded top. The machinery that made the magic was invisible, buried beneath the booth. Coin slots and a telephone dial were set into the glass at sternum level. Jerryberry inserted his C.B.A. credit card below the coin slots. He dialed by punching numbered buttons. Withdrawing the credit card closed a circuit. An eye blink later he was in an office in the Central Broadcasting Association building in downtown Los Angeles.

AUTOMATIC SLIDING DOOR
GLASS CONTAINER

TELEPORT MACHINE
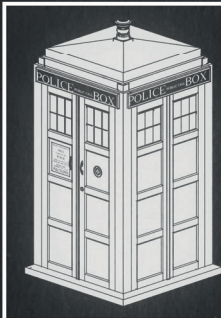
TARDIS
as the producer of Doctor Who TV program, BBC, explains, stands for Time And Relative Dimensions In Space and is the method, device or a ship, through which, doctor who travels through both time and space. This time and space teleporting machine appears in form of a police box - An almost extinct public telephone kiosk for the use of public to contact police or for the use of police itself - and is bigger in inside than outside, how TARDIS works is a mystery.
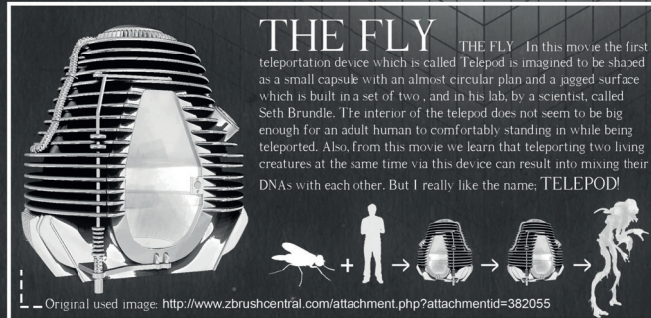
THE FLY
THE FLY In this movie the first teleportation device which is called Telepod is imagined to be shaped as a small capsule with an almost circular plan and a jagged surface which is built in a set of two, and in his lab, by a scientist, called Seth Brundle. The interior of the telepod does not seem to be big enough for an adult human to comfortably standing in while being teleported. Also, from this movie we learn that teleporting two living creatures at the same time via this device can result into mixing their DNAs with each other. But I really like the name; TELEPOD!

Original used image: http://www.zbrushcentral.com/attachment.php?attachmentid=382055
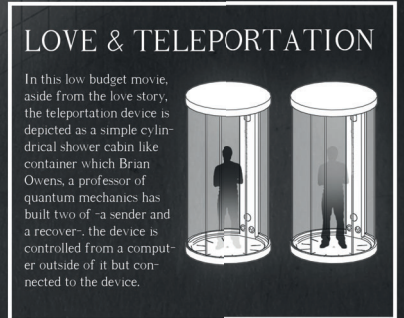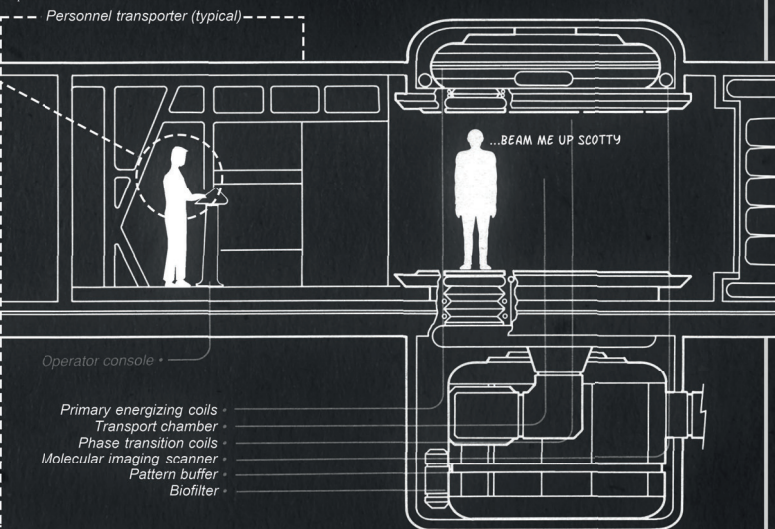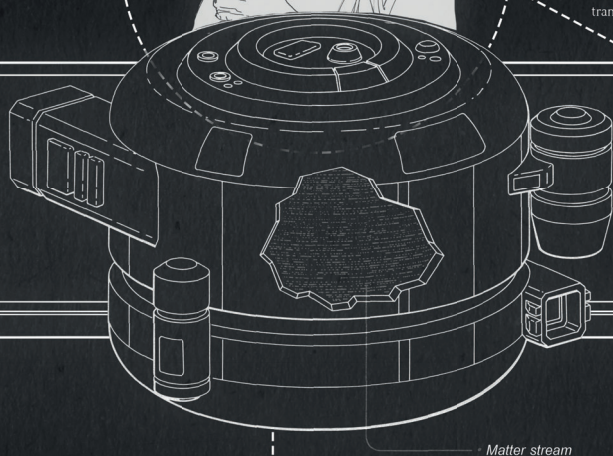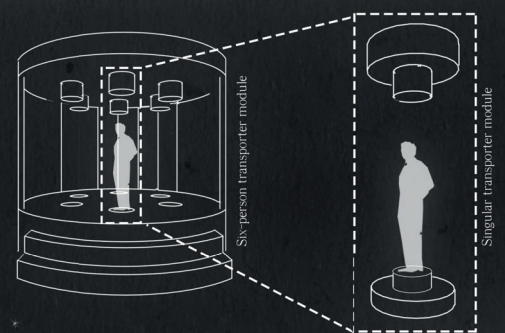
LOVE & TELEPORTATION

In this low budget movie, aside from the love story, the teleportation device is depicted as a simple cylindrical shower cabin like container which Brian Owens, a professor of quantum mechanics has built two of -a sender and a recover-, the device is controlled from a computer outside of it but connected to the device.

Technical facts about Transporter. The Dematerialization does not need to take place in a closed container - There is no waste of material or exhaust to the device - There is no transporter needed at the target destination - Circular plan - Alarm system Lights are on when it is operation - The device is controlled from an emitter device, run by a person, other than who is being teleported - Normal time of the entire teleportation process is 2 to 2.5 seconds, but under unusual circumstances it will increase up to 4 to 5 seconds - Equipped with a weapon detector which also can deactivate the detected weapon - Equipped with bio filter to remove poisonous and unwanted gases - Could be used in tactical operation. For example bombs can be sent to the targeted enemies using, transporter.

READY TO BEAM UP?

STAR TREK
THE NEXT GENERATION

One of the most detailed depictions of the device through which, teleportation takes place happenes in the popular series Star Trek. There is a technical manual, explaining the elements of the teleportation device or, as it is called in this series, the transporter, and the process of teleportation. Based on 'Star Trek, The Next Generation Technical Manual', to teleport, one should be dematerialized into an energy pattern and again materialized at the target destination, and this process has 5 stages: Target scan and coordinate lock. Energize and dematerialize. Pattern buffer Doppler compensation. Matter stream transmission.

Six-person transporter module

Singular transporter module

Personnel transporter (typical)

...BEAM ME UP SCOTTY

Operator console

Primary energizing coils
Transport chamber
Phase transition coils
Molecular imaging scanner
Pattern buffer
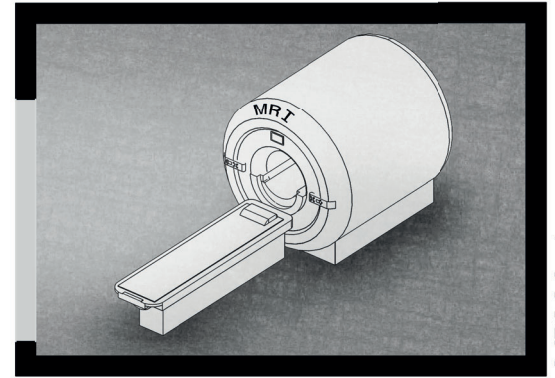Biofilter

Matter stream

Pattern buffer tank

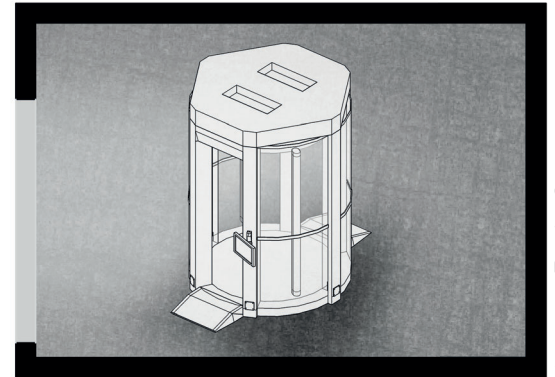From Star Trek: The Next Generation Technical Manual

Of course, even the technology conceived in dreams had physical elements and unwieldy considerations which could not be avoided. I had to leave room in my sleek vision for four bulky vertical subatomic and DNA imaging scanners and materializers, a heat exhaust, cooling coils, a power supply unit, a processor and a network server. The challenge was arranging them all in a way in which they would create a closed container inside which the teleportee could comfortably stand. I knew the traveller needed to be situated completely within the scope of the scanner, so I began designing from the inside out, elevating him on a clean surface in the centre.

I remembered devices with similar functions I had encountered. An elevator seemed to me like a vertical teleporter and an MRI machine, which I recalled from my knee injury, had the body scanning process in common with our Telpod. The fact that both of these devices could cause a claustrophobic reaction due to their tight, opaque interiors made me think of endowing the Telepod with a sense of transparency and openness; windows were the logical answer. On the other hand, I remembered the embarrassment of being placed in a security scanner from my flight to Canada: an embarrassment caused not only by the acknowledgment of being seen naked by the guards but also by the uncomfortable feeling of being seen by passers-by while standing helpless with your arms to the sky and your legs wide apart, like an awkward perversion of da Vinci's Vitruvian man. To avoid this fate, I used the cooling coils to create a patterned surface, limiting the visual permeability from outside.

My first concern was always human, or perhaps my own, comfort. After all, as soon as I was finished, the day would come where I would be the man in my drawings.

MRI Machine

Airport Body Scanner

Da Vinci's Vitruvian Man

Cooling Coil

Atomic Imaging Scanner

Operator Console

Automatic Sliding door

Heat Exhuast

Stairs

Operator Console

Drainage Grill

Status Indicator Light

Window

Teleporter

Top Cap
Atomic Imaging Scanner and Materializer
Windows
Automatic Sliding Door
Atomic Imaging Scanner and Materializer
Cooling Coils
Status Indicator light
The Teleporter
Atomatic Elevating Stand
Floor
Stairs
Drainage grill
Server and Processor
Foundation
Maintanace Access Area

Figure 49: The Telepod

23rd of July, 2024

Dear Tara,

After two years of working with Winston on a way to end distance, the hours between us and the borders between me and my family (which you, more than anyone else know keeps me up at night) may finally be dissolved. I am writing to you at the last minute, on paper of all things, to let you know that we have found a way to do the impossible, and if this final test works it will chang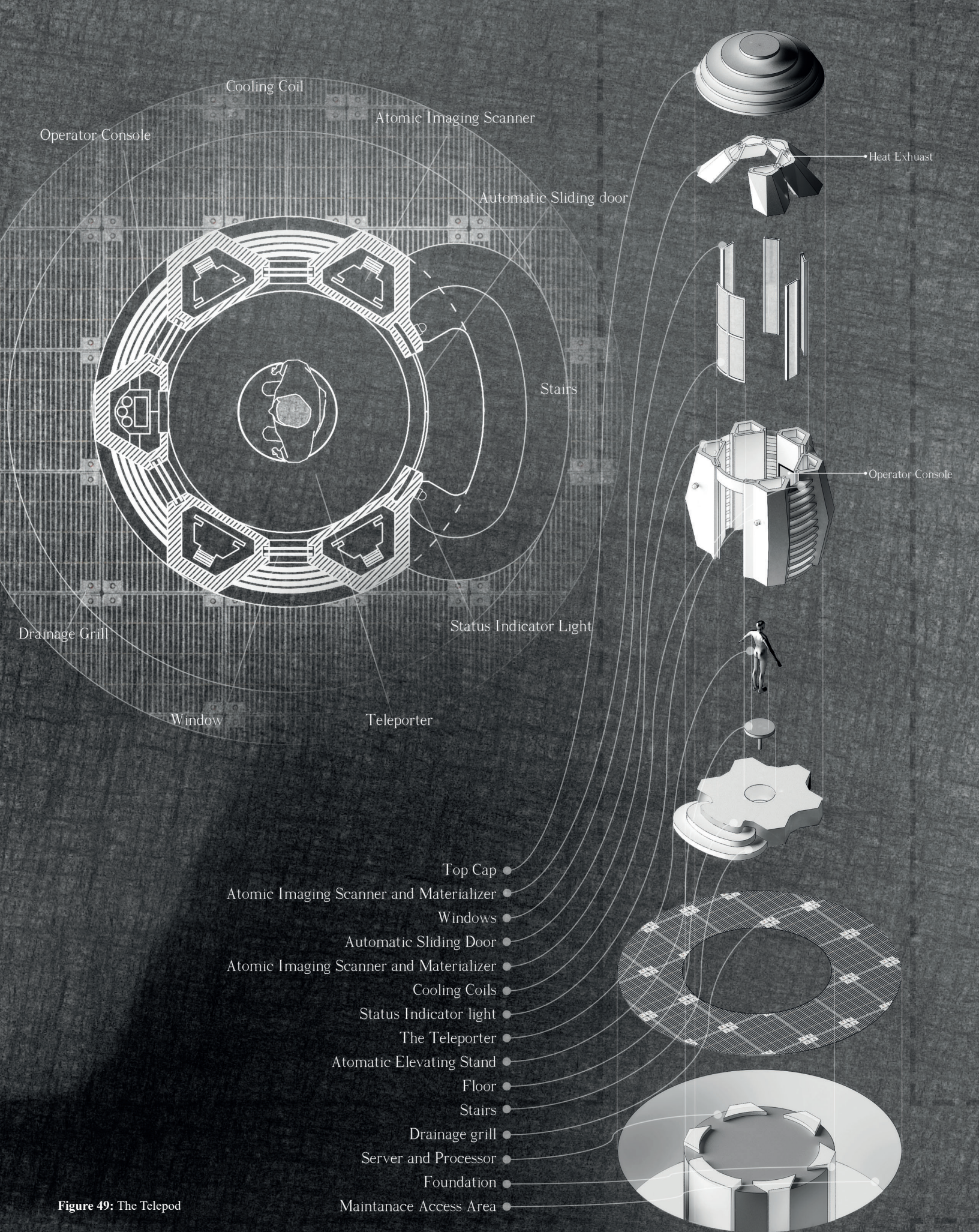e everything. I know I told you we were working on high-speed travel, but it was for your own peace of mind not to know the barriers that we were crossing. We have successfully teleported houseflies and I am the next experiment, about to step into the device we have hauled up to the backyard. It should be safe and chances of it working perfectly are very high. If you ask Winston he would put them somewhere in the 98th percentile, but there is a small probability that my data will not make it from one place to the next. If you are reading this, I will have been the victim of some unforeseen flaw in the process, and a sacrifice to scientific history. I am afraid, but trying not to show it. Winston is very supportive and keeps telling me jokes to keep me distracted. His last one was quite funny. As I was moving to the Telepod he leaned over and said to me: "One small step for Sam, one giant leap for Samkind."
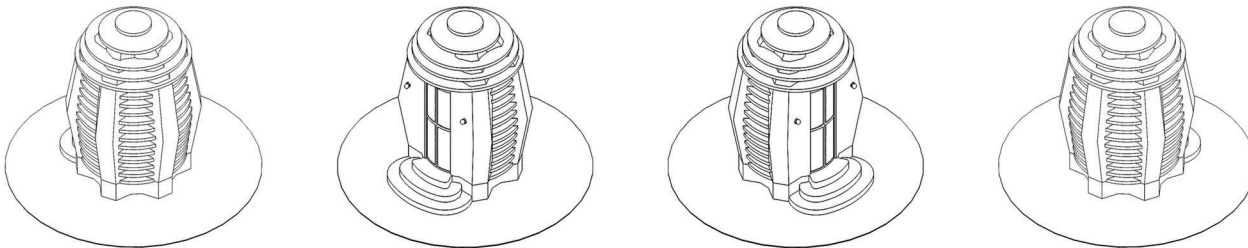
Wish me luck. I love you,

Sam

Figure 50: A small step and the giant leap

CHAPTER IV
TELEPORTATION, HUMAN,
BODY, SOUL, AND IDENTITY

And now, here I am, a folded letter hastily tucked into the side of the pod I designed, standing alone in this never-before-used handmade container. Perhaps not completely alone. The fear of death is in here with me, but the powerful tug towards living without borders overcomes my fear of ending up severed in two, and it raises my hand to the button...

For a moment, the memory of a thousand mutilated insect bodies throws my hand back at me. Another painful process. "Just do it!" I whisper, not quite audibly. I know the result, whatever it will be, is better than this endless indecision.

Then, I push the button! An ephemeral noise, loud and deep, fills my ears for nothing but a split second, and it is satisfyingly alien. Then, silence. Without thinking, I read the sign again, expecting not to have moved yet but there it is: "Telepod #2". I can hardly believe my eyes. That was it. I just teleported, and didn't feel a thing.

Suddenly the urgency to check for my body parts overcomes me, but it quickly turns out there is no cause for concern. My hands, my legs, and my feet are there. Even the faint pain I always feel in my left knee is still there. I never thought that that pain could make me happy, but I can't help but smile.

"Are you ok, Sam?" Winston shouts.

"Yeah! I'm fine" I say, ecstatic as the magnitude of the moment begins to dawn on me. I remember everything, I remember Winston, Tara, and the fear that was with me in the other Telepod which has suddenly dissipated. Then another thought cuts through the euphoria. I think this is me, but is it?

"You want to come out?" Winston asks, chuckling at his stunned partner-turned-statue. He gets no response from me. I am drowning in my thoughts.

I feel and look exactly the same, but I know that this Sam is made of entirely new particles. It is like disassembling a wooden box and using the very same pieces of wood to reassemble the same box. Would that be the same box? Am I the same Sam? Hesitation replaces fear as the presence in here with me. What am I? The body, I think, is not the problem. After all, Tara once told me that the human body naturally replaces itself entirely every seven to fifteen years. But what about the soul? What makes 'me' 'me'? What if the real me died, chewed up by this machine just like the hundreds of houseflies, and I am his clone, spit out the other side?
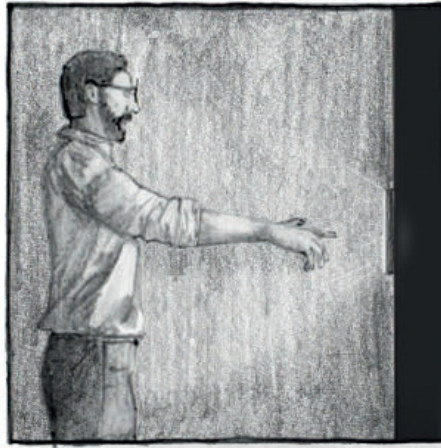
Figure 51: The one with the fear in the Pod

Hesitation proves faithful, and accompanies me out of the Telepod, straight to my basement bar to mix winston and myself a stiff drink, and back to the backyard where we toast, alone, almost solemnly, to our life changing achievement. As we sip our drinks together, I imagine the accolades and the celebrations missing from this moment when the world hears about what we have done, and I suddenly begin to see the party lights, coming towards us.

But there is no party; and no one is dancing. The sirens scream into the driveway.

Figure 52: Siren party

CHAPTER V
TELEPORTATION AND POWER

I am sitting in a room with concrete which seems poured all the way up from the floor to the ceiling. In front of me, a woman speaks without pausing, like a recorded tape, in an English that seems chokingly bureaucratic and rehearsed: "I'm sorry Mr. Mishin, but I am afraid I must inform you that you will have to stay here for some time. You cannot leave this room, but we will endeavor to provide you with your daily needs and-"

"But why?" I interrupt her speech, more aggressively than I intend and insist, almost childishly, "Nothing I've done is wrong!"

"Indeed, you've done nothing wrong sir, we hope you understand that the reason you are here is to prevent the spread of the knowledge you carry with yourself. There are technologies that governments cannot simply allow to be used by the general public before ensuring their harmlessness to individuals and the well being of the larger society." The sentence spills out of her too smoothly and then she bites, her mocking tone just as robotic as it is infuriating. "You're a smart man Mr. Mishin, do I really need to refer you to the examples of such confidential trial runs of newborn technologies? You must be familiar with the story of the internet or satellite maps?"

"I am." I respond angrily. "But those had to do with the country's security! Those were considered to be military devices in the times when technology was the power."

"It buys us time that you already know our logic." The voice is calm, almost soothing now, flowing out of the recorder I imagine she has implanted in her trachea "Mr. Mishin, those times have never passed. Your technology…" She pauses for the first time,"…Teleportation will be useful in simplifying the current… let us say complexities… between us and our opponents. I hope you understand the situation."

"But I have work, I have a life out there!" I find myself shouting as the sound echoes back off the hard surfaces.

"You shouldn't be worried about your job, and those closest to you will be permitted to visit you here at designated times and under our supervision, of course." Her voice gets dimmer as she talks, like someone is turning down the radio in her throat.

"Wait!" I say quietly, remembering my friend, the mastermind behind everything. "Where is Winston?"

"He is well and probably quite content. We sent him to one of our most equipped laboratories. He is helping us to further develop this technology. And Tara, is it?" I detect a faint sneer in her voice, "is fine as well, I'll set a visit with her as soon as possible. I'm sure you're eager to see her."

My mind flashes from Tara to indignance once again. "How do you know about all of this? How did you find out about our experiments? We were using private networks!"

"We have the power to do most things people cannot do."

The words behind her smirk give me an idea. We remain quiet for a while before the woman finally leaves the room, and I have a moment to take in my surroundings. The loneliness is palpable, and I can't help but start to dream again of the key ripped from my hands.

Then, a week later, before I have the chance to ask about their ability to lift my subversive status, my loneliness compounds. The recorder, cold as the concrete walls, brings a newspaper with a picture of a familiar Krakozhian apartment building, collapsed from a freak earthquake only a week ago. There is a letter from my Uncle, the only survivor of the disaster. All I can do is stare at the door.

Figure 53: Tanks teleporting

CHAPTER VI
LOCAL, PUBLIC TELEPODS

People have come to meet with me. Even in my now-diminished state I realize that they must be important to be allowed inside of my room, though I can't tell if they are real or if it's all just another dream. After three years of quarantine and the news of the earthquake, my mental condition has deteriorated. I try to concentrate on the man whose face has ended up in my face by taking in his features from this close-up view. He is middle-aged, with chubby, spotty red cheeks and an active lampshade mustache preventing him from looking serious in his funny, formal, and unfortunately-fitting suit. What I understand from the gruff words he breathes onto me is that the government has sent him to give me the good news: "the top-secret classified military experimental run of teleportation" is finally over, and I can leave this "god-awful quarantine." At least he is sympathetic, if a little late. "In appreciation of your patience we wanted to give you a gift," his pretty, no-nonsense briefcase-toting assistant pipes up. "Your friend Winston suggested we offer you a job. Canada wants to try teleportation as a system of public transportation in Cambridge, Ontario which I believe you are familiar with. It's a mid-sized town. If the results are satisfactory we would like to run this system in larger cities in the consecutive years." Just as I begin to grasp the proposal the mustache is saying, "You have ten days to make your case for a head architect." Then, smiling, he uses one big hand to close the door behind them.

I still can't be sure if any of it was real…

Second of June, 2026

Figure 54: The mustache and his pretty assistant

I work feverishly, in and out of sleep, towards the deadline I am not certain is not a figment of my imagination. I finish the slides only three hours before the meeting starts, and find myself wishing I could teleport to the city hall to buy myself more time. Appearance really matters in these sorts of meetings, I tell myself as I trim my beard, grown savage in the ten days I've been awake. I don't want Tara to see me like this either, I think, as the situation begins to seem like a reality. I'm seeing her after the meeting, and it has been a long time since the last of our infrequent visits. She is going to hear the story of our experiments and crazy invention in its entirety for the first time, and there will probably be a fight. I don't need to ignite another one with my overgrown face.

"Mr. Mishin, The Mayor and the rest of us are excited to see what you've got, why don't you start?" My chubby friend with the lampshade mustache invites me to the front of the room.

Here you can see a number of potential places for housing teleportation terminals in Cambridge, including important intersections and places that are predicted not to be used after the execution of public teleportation system: Places such as bus stations/terminals, parking lots and gas stations. then, we would infill the gaps in between these teleportation terminals with smaller Telepod stops, consisting of singular arrival and departure Telepods, placed within walkable distances of each other.

Mr. Mishin, Mr. Mayor and the rest of the committee are excited to see your proposal, why don't you start?

Cambridge Smart-Centre

Shell Gas Station, Franklin Pinebush

Cambridge Centre

Esso Gas Station

Shell Gas Station, 800 Franklin Blvd.

Water St. @Dundas St.

Elgin Gas And Wash

Ainslie Street Transit Terminal

South Cambridge Centre

Westgate Centre

Figure 55: The presentation

CHAPTER VII
SPEED WINS

Before anybody really sees it coming, practically every transportation-related business drowns in the new wave almost as quickly as you can teleport. It takes less than a year for Telepods to become the primary method of transportation in most of the biggest cities around the world and by the end of 2028, Telepods are the most popular public transportation devices worldwide. After all, how could something compete with a method faster, safer, and greener than anything humanity has ever seen? Not to mention, the cross-cultural science-fiction appeal of having a transporter in your neighbourhood puts even hyperloop transportation and space tourism to shame.

Cars and their related industries, like automotive manufacturing, car maintenance services, and even services like taxi companies and ride-sharing apps, are of course the first victims of this game-changing shift. Now, people would rather enjoy a short walk on the ever-emptying streets to reach the magical devices of instantaneous travel than having to commute anywhere by car. Bikes can be seen rolling down the streets in droves. Most other pre-teleportation vehicles aren't capable of holding their own in the devastating teleportation tsunami; airplanes, buses, and trains are only used for specific occasions, mostly luxury entertainment and the conveyance of freight, the same destiny that marine vehicles had experienced when air travel took over. Their fate is written on the wall; convenience wins once again.
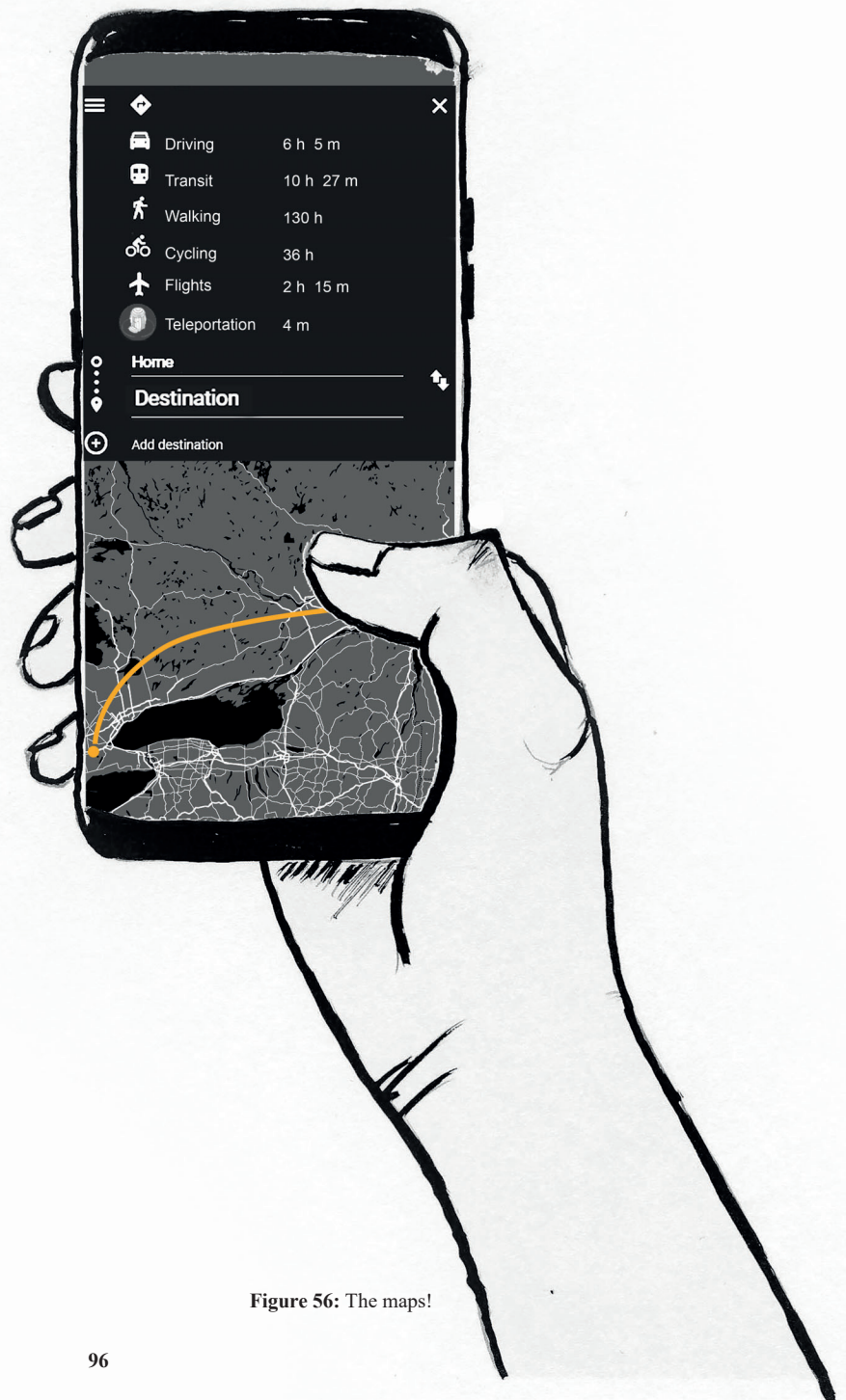
Figure 56: The maps!

People tend to walk and bike more than ever!

Postal Service Is Going Out of Business!

SUBWAY STATIONS ARE OPERATING, ONLY FORMALLY

Car companies: "Telepods are not reliable!"

DONALD TRUMP: "TELEPORTATION IS BAD!"

CAR MANUFACTURERS ARE GOING DOWN ONE AFTER ANOTHER!

Lets face the 'Second Renaissance!'

SPEED WINS

RISING DEMAND FOR TELEPODS AND LESS AIR POLLUTING VEHICLES.

What Happened?

UBER IS THE NEXT VICTIM OF TELEPORTATION

WARNS ON JOBS!   Less cars, more pedestrians!

CARPARKS ARE EXPLODING!!!   SHOCK WAVE!

Mercedes Benz has started giving out free cars few months before closing its production lines

THIS IS THE END FOR CARS!

HOW DID AIRBUS SURVIVE?

STOCK MARKET CRASHED!!!

slash 56,000 jobs

CPTA is hiring!

CUTTING EDGE

WAYS TO AVOID BANKRUPTCY FOR AIRFRANCE, KLM, ALITALIA, QATAR AIRWAYS AND AIRCANADA.

Taxi industry didn't make it this time!

After uber, now the new method of public transportation, fully disrupted our old friends, Yellow Cabs!

End of an era; cars are out!

Car repair shops feel the wave!

TELEPODS, FASTER, SAFER, GREENER!

A RECESSION?

50 MILLION USERS IN LESS THAN A YEAR!
TELEPODS BROKE THE RECORD

Is the city ready?

Presto works on Telepods.

Teleportation Wave!

FUTURE IS HERE

We continue manufacturing boats!

Early investment on teleportation, saved Airbus. Article by Ashish Polanski

SUBWAY TRAINS ARE NO MORE MANUFACTURED. Boats won't surrender!

BMW SUED THE INVENTORS OF TELEPOD.

UBER PROPOSED TEL-UBER:

BUSES, EMPTIER THAN EVER!

PORTABLE TELEPORTATION SYSTEM

First airport to give up

Figure 57: The news

THE DEMAND for Bicycles has increased!

CHAPTER VIII
PRIVATE TELEPODS

One after the other, governments begin the legalization of Telepods for private use, which leads to expected competition in the burgeoning Telepod manufacturing industry. Although they build devices for the purpose of travel, the process of traveling has been virtually eliminated, so if the quality and comfort experienced during the journey, like leg room, decent food and drinks, better air-conditioning, stereo, and navigation systems were once determining factors for consumers, now, alongside safety and security, a stylish look designed to ornament a front yard and make the neighbors jealous could keep a company in the game.

Figure 58: Telepod store

TELE-SPRING
67,999.99

After a while, and with the increased number of Telepod brands, dealerships start to appear at every corner. The showroom that once sold Volkswagens in the neighborhood Tara and I moved into has turned into an emporium filled with Telepods of all kinds with diverse shapes, colors, and options: a Telepod for every taste.

After wrestling with my ego, Tara convinces me to pay the store a visit and buy a pod for our place. She is right, it will be infinitely cheaper than building the prototype with Winston so many years ago. Unsurprisingly, the first one to catch my eye looks uncannily like the first replica that I had designed, a classy, antique looking pod with five wide white flanges and delicate cooling coils wrapped protectively around the body.

The process of buying a private Pod is easier than I expected, especially after years of isolation for such a "dangerous" technology. It's as simple as buying an Internet connection. We give them our address and they promise to send us our favorite Pod the next morning and install the device. I compare this transaction with the process of buying my first car; all the training sessions with my tutor in the narrow streets back home and the nerve-wracking drivers tests, one stressful experience in each country. I think about the next generation, who will likely never know what a driver's license means!

The next day, our Telepod is brought to our bungalow. The government, eager to placate their newest release, offered us a nice house in an average neighborhood, where almost every yard now has a private Telepod. The installer asks us where we want our Pod to be located. There are rules, some of which I helped write, regulating the placement of a teleportation device in the 2025 Building Code. The most important one is that it must be placed outside of a building. Exterior placement provides a security filter, and there are random inspections for the prevention of illegal uses of such devices which require them to be accessible to the inspectors at any time. The other reason given in the code for locating Pods outside of homes always makes me think of my floating room theory: apparently, it is in the interest of the nation to prevent complete insulation from the great outdoors. Of course, I assume cynically this has been added not to spare us from forgetting the joys of nature, but for the benefit of keeping the front yards and facades clean and tidy because property values still matter, even in the age of teleportation.

We consider the porch, the front yard, aligned with the driveway, the backyard, the deck and even discuss turning our garage into a teleportation unit for a moment. Tara, is in love with the front facade of our house, which she painted a sharp yellow colour, making the lilies in the front yard "pop" She shows them off to every guest and tells the story of how she keeps them alive by talking to them with a laugh. To preserve this sacred ritual, we agree that we don't want our guests to enter from the far-less vibrant back door.

After a couple of minutes, we make our decision, and she yells at the installer excitedly, "the front yard it is!"

Garage
Back Yard
Backyard Deck
By The Driveway
Front Yard
Porch
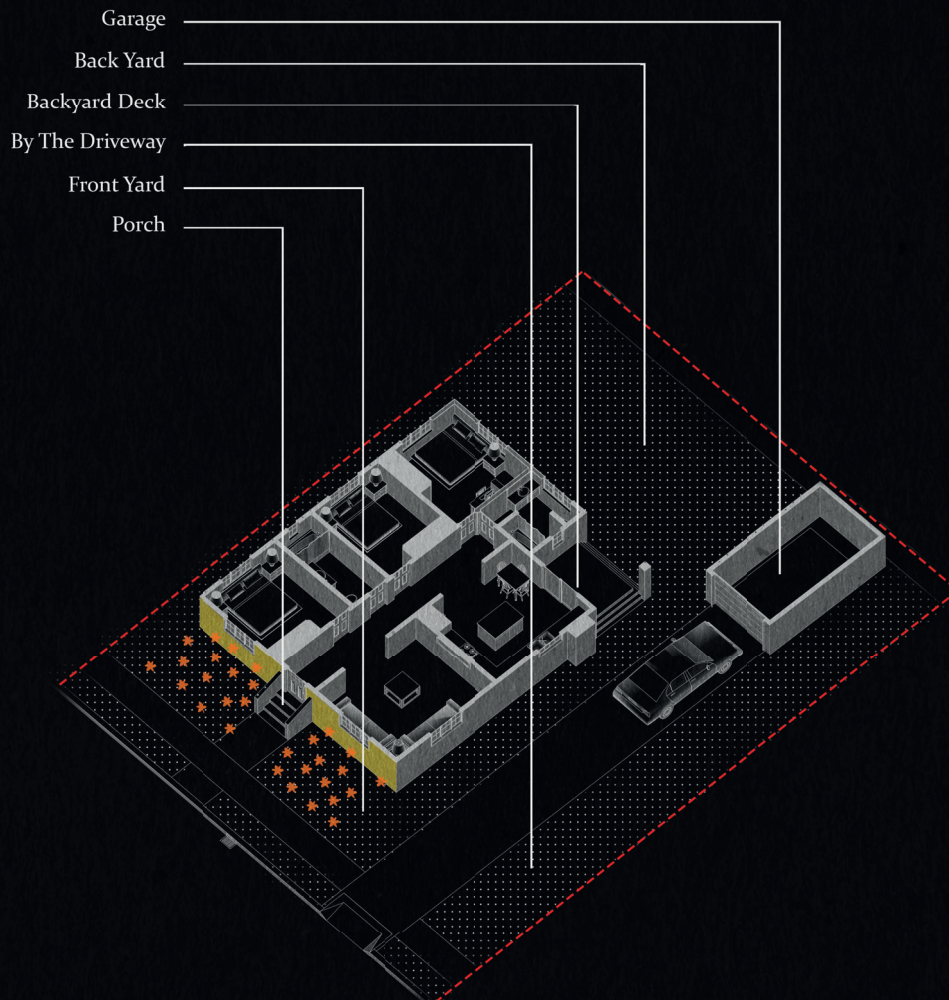
Figure 59: Private Telepods
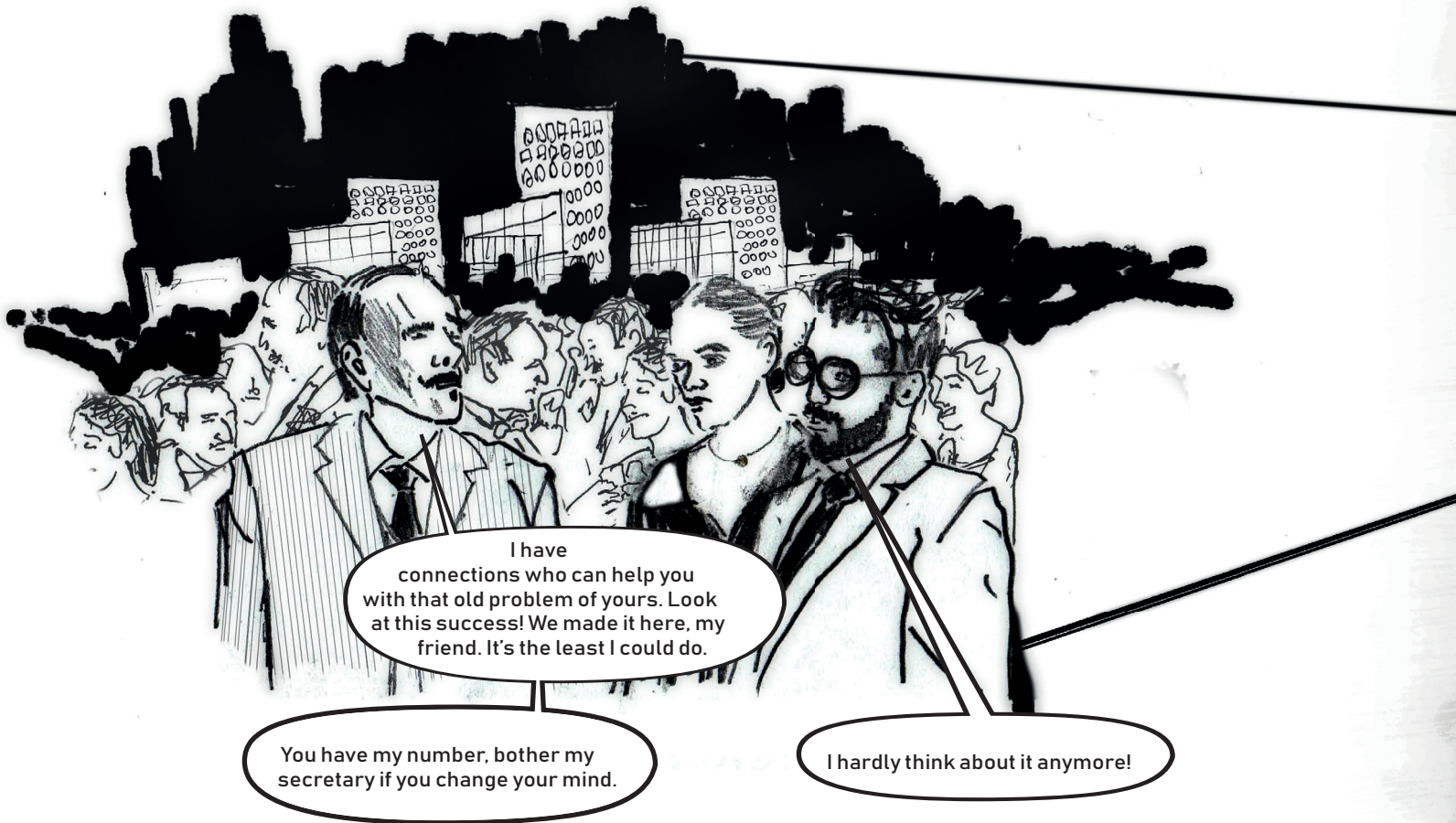
A couple of weeks later, we use our Telepod for what seems like the hundredth time to go to the one-of-a-kind 'Televator Building' for its grand opening. The owner of the building is Mr. Tolson, who has been my taskmaster for the past year, my first employer since my stint in what they assured me was not prison. Before this revolutionary idea, high-rises used to have Telepods at each floor (an expensive choice reserved for luxury condominiums) or they could be found only in the lobby, making for an inconvenient two-step process in an increasingly one-step world.

This building is the prototype for a new typology with elevators which carry Telepods instead of humans, so apartment dwellers can easily call them to their floor, killing two birds with one stone. This not only cut the expenses for the builders but also decreased the waiting time by half.

At this address, there are two regular elevators and two televators for each six floors, a number I remember arriving at over a rare bottle of scotch in Mr. Tolson's office one night.

At the party, the man in charge pours Tara and myself a drink and brings up an old problem of mine, what was once my life's obsession and arguably the reason I am here: the ban on entering Krakozhia. I am no longer sure if I miss it. After all, who would recognize me now? I nod along, grasping at old memories I have not yet suppressed, while he claims to know a way to circumvent the embargo. By his taste in liquor, I am hardly surprised.

Figure 60: The elevator party

ELEVATOR

TELEVATOR
One each 6 floors

TELEVATOR
One each 6 floors

ELEVATOR
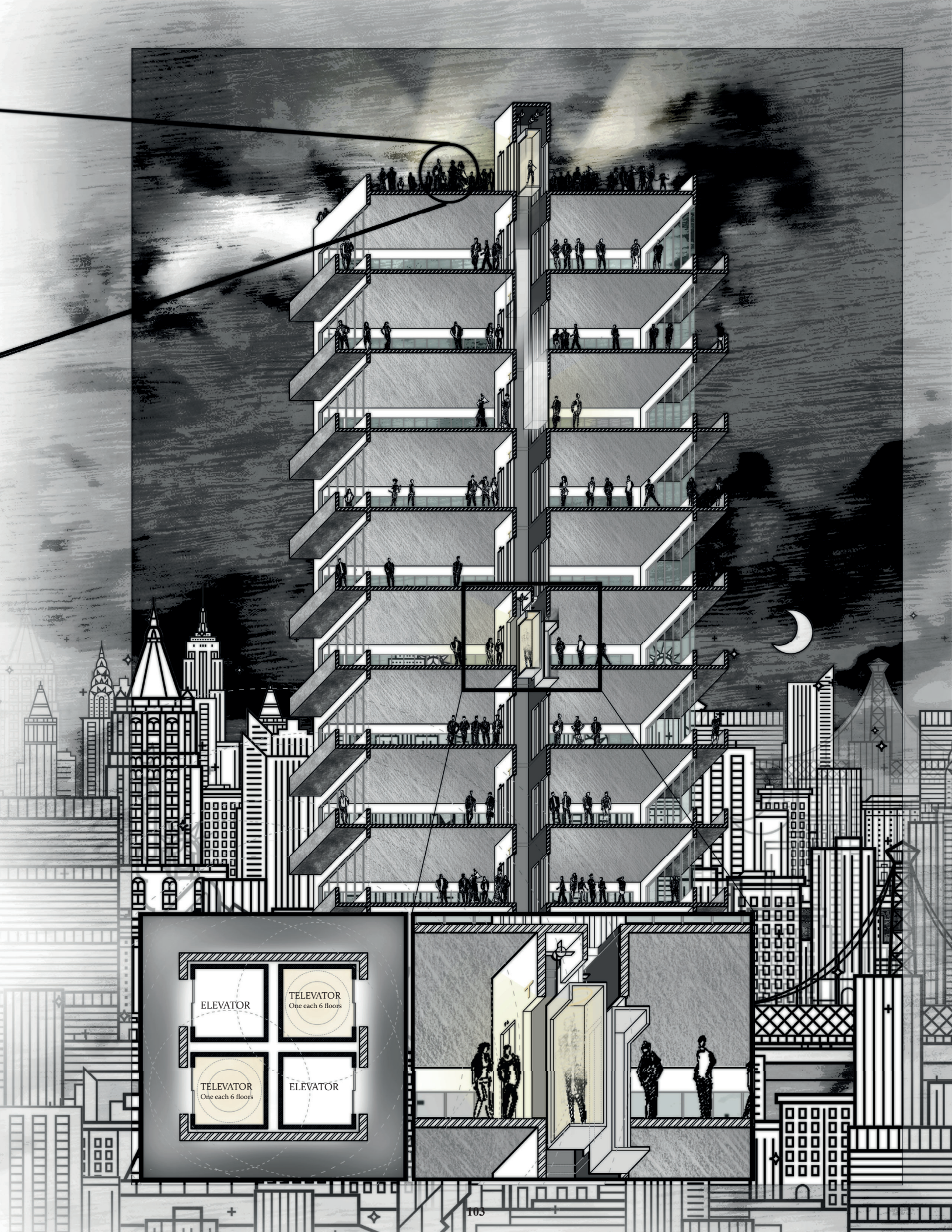
CHAPTER IX
BORDER CROSSING

In the spring of 2026, Tara is packing furiously to attend the Krakozhian New Year Celebration. I haven't celebrated it with any heart since my first year in Canada, but Tara has flown back every year to Ibklask, the capital city where we were both born and raised. Always a playful skeptic, this will be the first year that she will teleport home. At a time when distance and physical obstacles no longer separate places, politics still do, and I still can't get into the Telepod after her. In fact, teleportation knows no impediments other than the political conflicts and bureaucracy.

International teleportation is being experimented with for the very first time, and the primary challenge is maintaining the security of the political borders while preserving the speed which defines this remarkable method of travel.

To protect the borders, a particular number of Telepods, connected to the international teleportation network and completely disconnected from the local one, are gathered in areas called international teleportation terminals. These terminals are considered international lands or extraterritorial zones in the way airports used to be, hosting the arriving or departing teleportees.

Before her unprecedented trip, Tara, like any other international traveller, was asked to have a microchip implanted in her body as a means or facilitating the check-In process for border-crossing teleportations. As well as being useful for the constant surveillance of travelers, those microchips include personal identification information, eligibility for traveling to the destination country and even bank account information for easy payment. All of this information is now received wirelessly by the Telepods, accelerating a check-in process which used to consist of separate stages of purchasing tickets, checking and rechecking travel documents and scanning luggage for security. Travelers' baggage items are also scanned within the process of teleportation and any items prohibited in the destination country are swiftly teleported to the terminal's safe storage and kept there for claims.

As Tara turns her head to say goodbye, I am lost in thought, wondering about how this technology can dislocate political borders from the outside in. Just as airports had displaced the gateways to nations from their perimeters to within their boundaries, Telepods will, gradually, spread those internalized entrances all over a country.

Whether politicians like it or not, teleportation is going to blur the lines.

Displacement of entry points from outside to inside.

Borders extruded up from the ground to protect and define the aerial borders and now teleportation has spread the borders all over the country.

Eventually, international and domestic borders are blurred more than ever.

Figure 61: Border crossing

CHAPTER X
HUMAN STAMPEDE

"At 4:17 this afternoon, after a deadly crowd stampede, the Krakozhian government moved quickly to shut down all the teleportation networks in the country. The tragedy has reportedly been caused by the teleportation of too many people to the Ibklask Arena, where the biggest party for the celebration of the Newmea, the traditional Krakozhian new year, was taking place. The number of casualties is increasing and the president of Krakozhia has already ordered comprehensive investigations into the disaster. We have Jashwa Ogidan, a teleportation networks specialist, here with us to explain how this devastating incident could have been avoided."
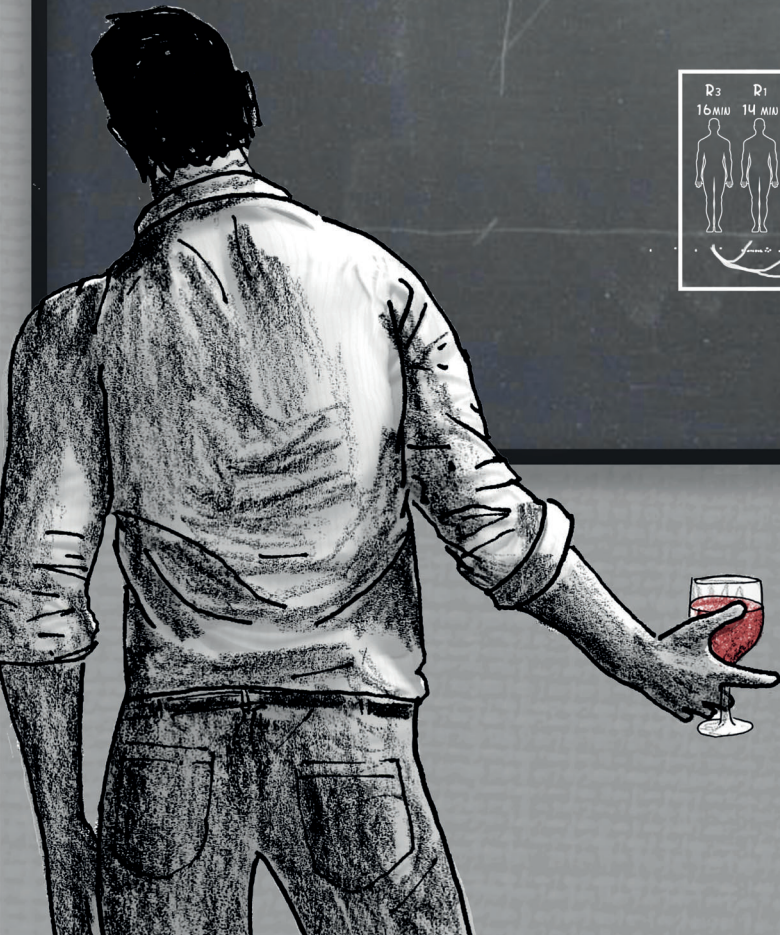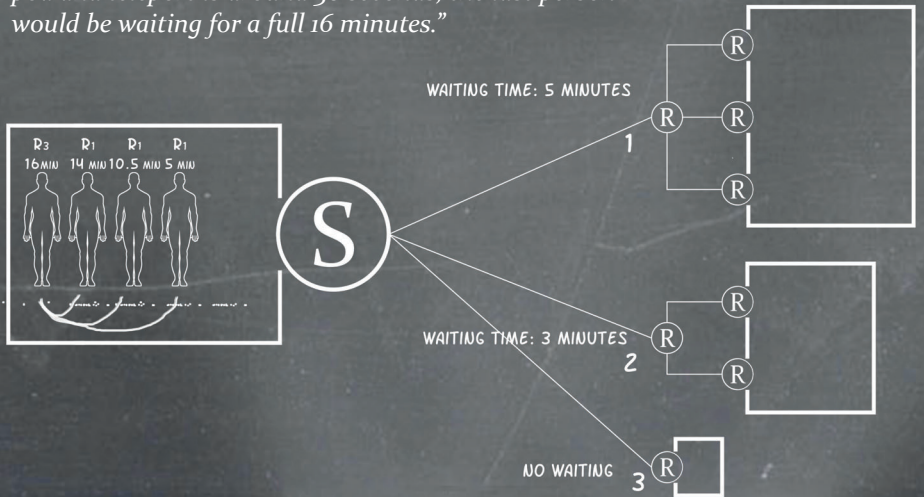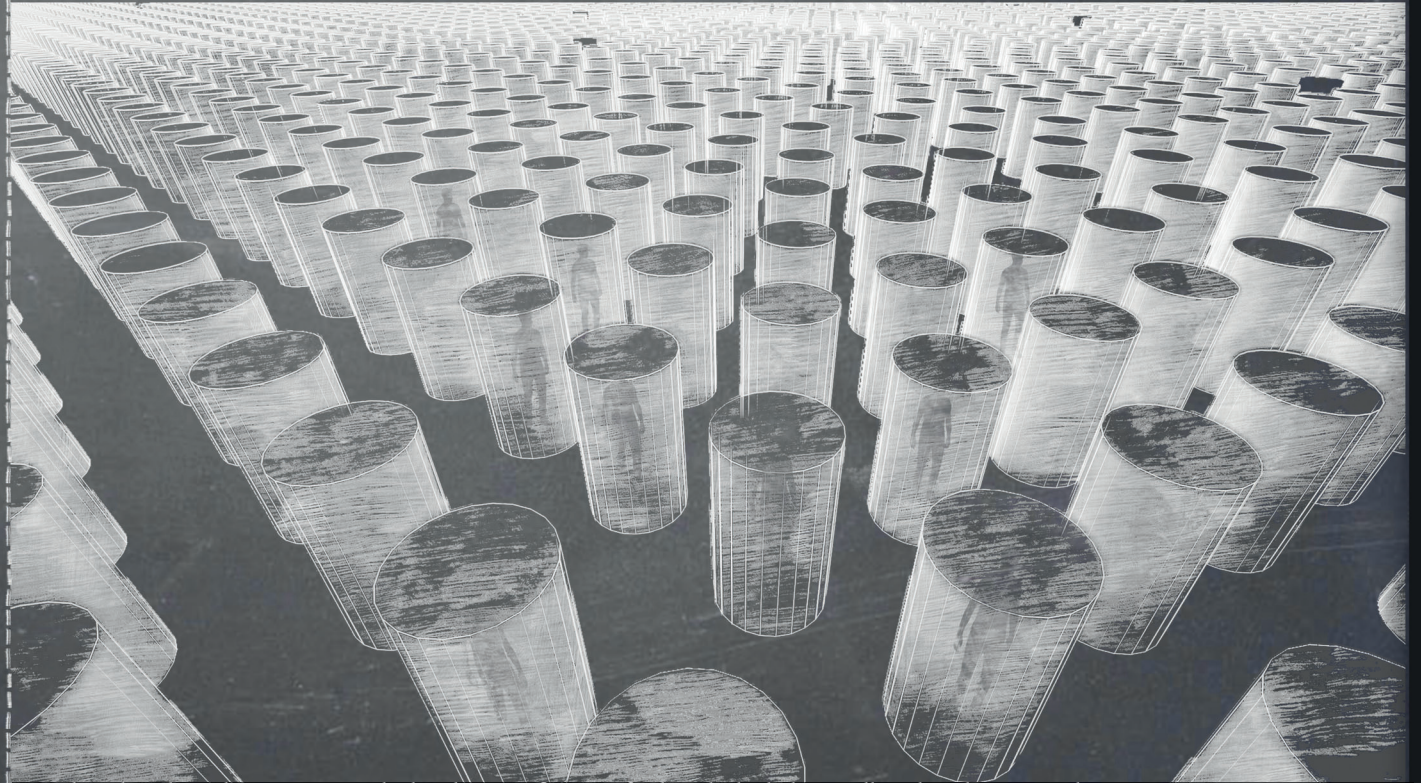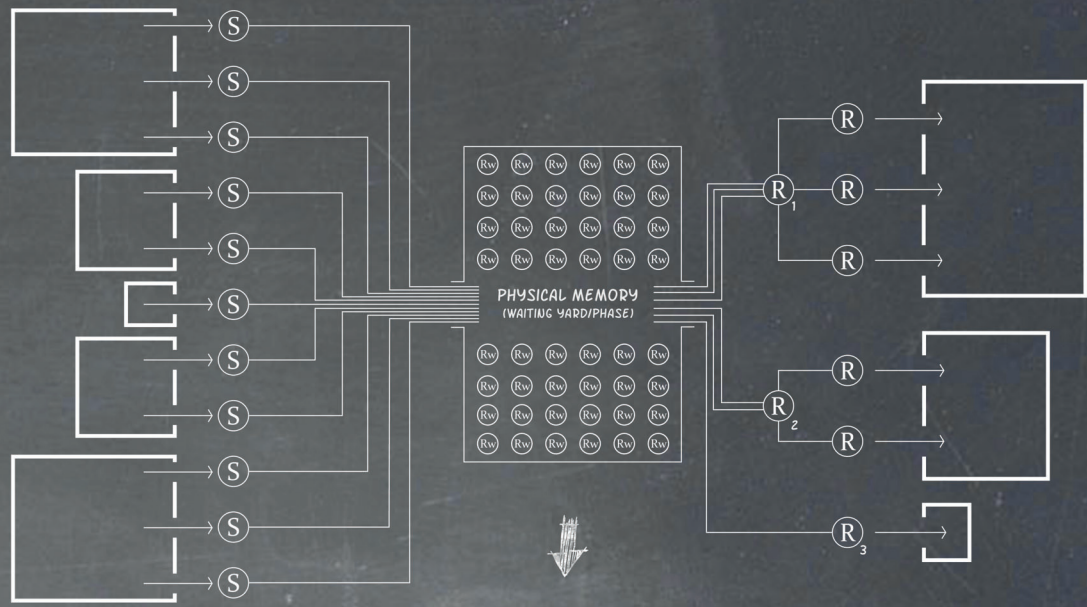
Figure 62: The stampede

"We can consider two main reasons for this terrible event; first, of course, has been the lack of a mediator phase in the Krakozhian teleportation system. Their teleportation network consists of a direct circuit in which departure and arrival Telepods are directly connected with no third mediating Telepod hosting the waiting phase. The mediator phase, which in fact splits the process into two teleports, can be used to shorten the queueing process and also for scheduling the entrance time with regard to the remaining capacity for incoming teleportees at the destination. The other major reason we keep seeing things like this in the region has been the lack of laws prohibiting Telepods within closed or semi-closed public spaces. In Canada, for example, we haven't experienced anything like this, because it is illegal to have Telepods inside public buildings!"
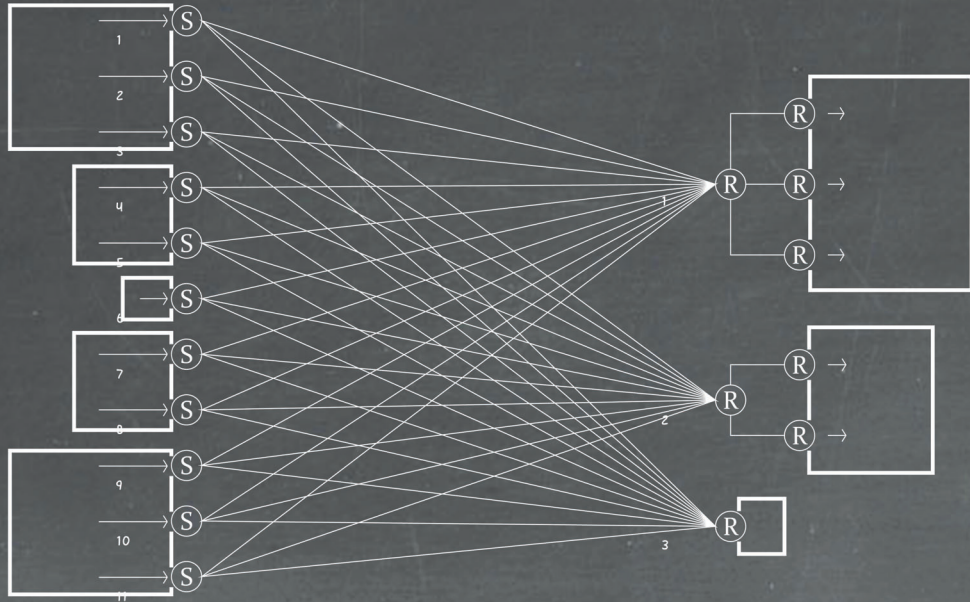
"To explain it a little better for the viewers at home, let me give you an example of how direct circuits work. Imagine we have four people, each wanting to go to a different place, queueing for the use of one Telepod. If the two first persons in the line are teleporting to a busy Telepod with a 5 minute waiting time, the third person's destination has a 3 minute waiting time and the fourth person is going directly to his private Telepod at home, assuming the time spent for each person to get onto the pod and teleport is around 30 seconds, the last person would be waiting for a full 16 minutes."

WAITING TIME: 5 MINUTES

WAITING TIME: 3 MINUTES

NO WAITING

BREAKING NEWS
DEADLY CROWD STAMPEDE IN KRAKOZHIA

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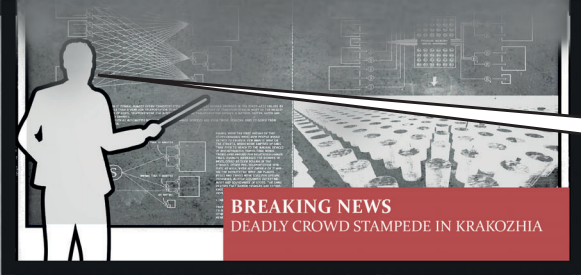
Telepod yards are large spaces stacked with a specific type of Telepod which do not allow the teleportee to leave, except in an emergency.

However, in double-phased teleportation systems, inspired by the function of memory in computers, the problem of long lines, caused by the accumulated waiting times of each individual has been solved by including a third telepod in the process which is located in a controlled yard. This way, every teleportee is transferred to one waiting pod which, as most of you know, is generally equipped with some routine entertainment devices, a mirror, say or a music player, before being teleported to the actual destination. The waiting process in these mediator telepods cannot legally be longer than 5 minutes in most countries, and this is achieved by increasing the number of telepods at a place with regards to the number of teleportations to that place in its busier times or rush hours.

Figure 63: The TV

"Is that Tara?" I tighten my eyes, in shock, to see better.

BREAKING NEWS
DEADLY CROWD STAMPEDE IN KRAKOZHIA

Figure 64: The bad news

I drop the glass...

CHAPTER XI
ABANDONED INFRASTRUCTURE

A few hours later, my phone lights up with two messages from an unknown number. The first includes two geographical coordinates, one marked, 'destination' and the other departure. The second message is a blurry picture, a map showing the way to the Krakozhian border from the arriving Telepod. I quickly print the pixelated image and insert the departure coordination into my phone map. The red tag appears directly on the bridge.

The spring has blown the Canadian winter away for the most part, but the early morning is chilly enough to make me put on a jacket. I wonder if I will need it on the other side and shiver, although I'm not sure whether from the weather or the fear of what I am about to do.

On the empty bridge, memories take me back to the day a speeding car hit me right at the crosswalk where I am standing. The memory of my bad knee, made worse by the accident pushes me towards the edge of the bridge. The structure is filled with wild, overgrown plants, making it impossible for a car to cross it even if it wanted to and difficult for anyone to see through.

... I find the Telepod deliberately concealed under a convenient pile of foliage.

Figure 65: Abandons

CHAPTER XII
DISORIENTATION

    After removing the flora from all over the Telepod, I step into it, enter the destination coordination into the pod's dusty interface, and push the oily button. At the other end, I am rematerialized in a similarly abandoned Telepod in the middle of an almost dried-up water channel, under another bridge covered in lush greenery. From one bridge to another, I think to myself and immediately take out my phone to see where I have ended up. "No Service," reads the top of the screen, predictably, I admit. Crawling to the surface road, I try to read the signs, but I don't recognize the language; the alphabet is unfamiliar; neither English nor Krakozhian. For the first time in years, I am lost.

Figure 66: The disorientation

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The road to Ibklask has been straight-forward since I slipped into the country between the ominous surveillance towers. I have seen three or four cars on the road, which I can only assume have left their dusty covers only because of the temporary shutdown of Krakozhia's teleportation system. Most people, though, have decided to stay inside and the full width of the road is mine, aside from having to dodge the minefield of potholes from years of disrepair.

When I reach Ibklask, the supposedly familiar city which holds my whole childhood inside of it, I notice it looking just as strangely at me through its many new eyes as I find myself looking at it. It seems as if the many high-rises that were built after I left are devouring the once humble skyline of my home and with it everything I can remember from this place.

I try to recall the map of the city, but all I can bring to mind are disparate bright spots on an unknown black plane. They are like the transit stations I used to frequent back in the day, separated by a dark fabric which I, a subway rider, hardly explored then and certainly don't recognize now. I try to connect the spots in my head to make sense out of them and weave some kind of mental atlas, but geography was never my strong suit. Trying to put them together now, I realise I barely know to which end of the city some of the well-lit and well-remembered areas in my mind belong. All I know are the details, the colours, the feelings I've dreamt of for so long.

My disorientation gets worse after the motorcycle runs out of fuel and I start walking. All of a sudden everything looks so much bigger and further than on the bike. I barely feel my movement towards the large buildings that I could swear looked exactly the same size 5 minutes ago. I think to myself that these monsters I do not recognize are well versed in deception, lying to me about their distance from my feet. The wide streets that were once alive and dangerous with cars are making me feel so small and slow.
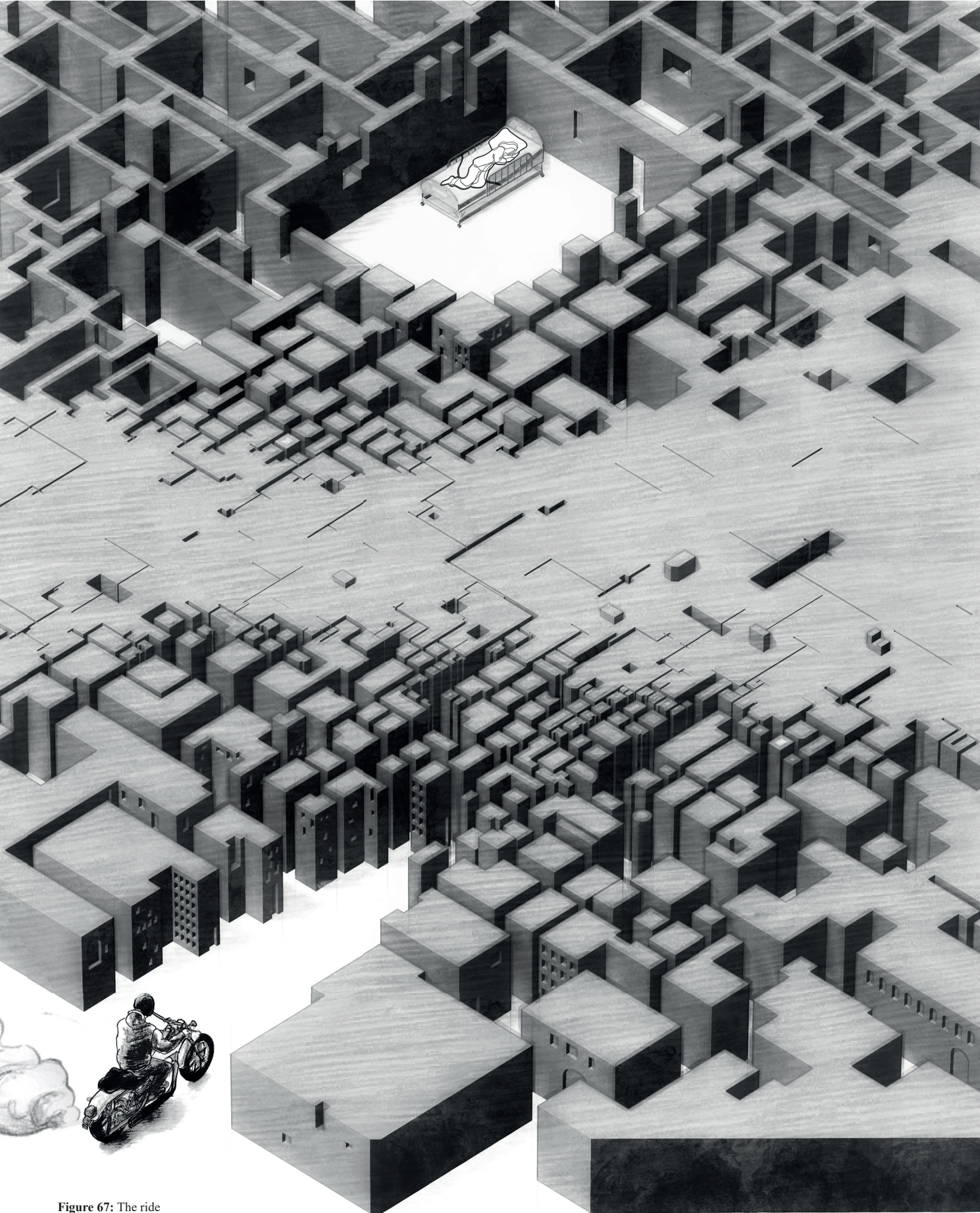
Figure 67: The ride

I try to find my way to the old town hospital where Tara is by asking the few people I see on my way. The younger ones sound uncertain, but their mind maps must be more fragmented than mine, having been brought up jumping from one place to another. The older ones I can trust with the address. Eventually, finally, my tired legs carry me to the older part of the city which has remained almost as I remember it. This is the origin, the heart of Ibklask, whose urban landscape dates back to the times long before the arrival of cars. Although wider streets ripped it apart when cars became the major means of transportation, those puzzle-piece neighborhoods preserved their pedestrian scale. Finding my way, or at least feeling my movement and direction is easier in this section of the city. Their alleys are narrower and the buildings are more my size. Landmark spires and minarets are satisfying checkpoints, comfortably within reach of passers-by. Checkpoints, and the walls are short enough not to conceal the markers that tell me I am getting close.

After what feels like the longest day of my life, I arrive at the hospital to find Tara in her bed, alive, but unconscious.
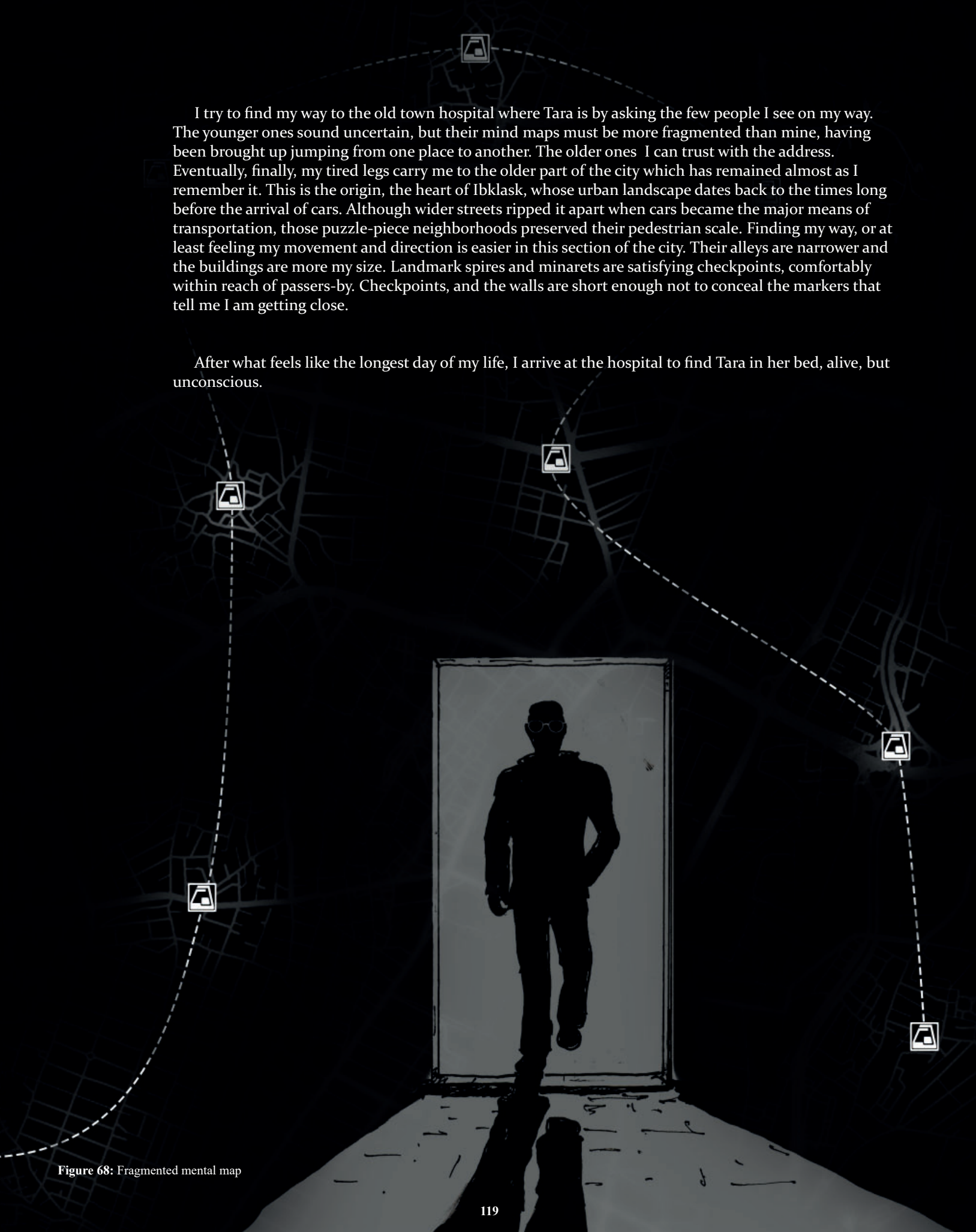
Figure 68: Fragmented mental map

CHAPTER XIII
NEW CRIMES

The plan is to sneak Tara out from the hospital and take her with me to Canada again; in other words, to steal my girlfriend back from the country I love. This is one of those ideas that come out of nowhere, the kind you can't justify to yourself nor resist. An unknown urge grows inside of me, forcing me forward: I no more can deal with loneliness!

I find a wheelchair and keep my eyes down, trying to act cool as I push Tara's unconscious shape around and look for the exit door. I don't start running until the guard notices us and I hear him asking for help on his walkie talkie. Of course, he expects for it to emerge immediately out of the hospital Telepods, but the system is down as his expectations will let him.

After we make it out of the building, walking as inconspicuously as possible towards no specific destination, I remember what Mr. Tolson said to me on the phone before I left: "... so many of our bridges, highways, transit stations, parking lots and gas stations have been turned into squatting grounds for hippies or homeless groups. And hotels, post offices, railways, airports and subway tunnels, well, I won't tell you how I know this, but its prime real estate for a criminal enterprise..."

There is a local airport nearby. My memory of this place finally serves me and I decide to go there in the hope of finding someone who can teleport us, now fugitives, back to Canada.

The airport lobby houses an ocean of homeless people lying on the floor which is piled with used syringes. They sound oddly satisfying under the wheels of the wheelchair, and I begin aiming at them intentionally, maybe to get somebody's attention, maybe just to fill the hall with sound.

From behind the windows, looking to the runway, I can spot movement among the decayed airplanes. As we move closer to the place where I spotted the shadows, I can't believe what my eyes are seeing among the shells: a colony of computer junkies. Standing, sitting on the ground, on lawn chairs, eating or talking, they do not stop staring at their screens. It doesn't require any kind of special insight to realize what they are doing is illegal, it's in their shifting looks and rapid, twitching fingers. Here is an unlikely collection of hackers and quantum specialists, breaking into houses, shops, and even banks, smuggling humans, goods, and drugs across borders through their off-grid teleportation networks, blackmailing cities and governments by infiltrating their teleportation systems and engineering malfunctions, causing huge waiting lines and subsequent public dissatisfaction. Some were paid to create riots by sending trained crowds from random sources to specific locations for political competition or distraction or any number of paid-for reasons. My criminal talent, discovered previously by the Krakozhian government, doesn't let me stop thinking about how brilliant this idea is: the physical embodiment of DDOS attack from back in the day, when terrorists and activists sent excessive internet traffic from random sources to a server in order to disrupt its functionality.

I find a human smuggler in the fray and pay him to teleport us to Toronto. He shows me a Telepod less than a mile away, inside the airport, and tells me not to insert anything on the interface. "This Telepod knows where it's going. It's already connected to Toronto." I push the wheelchair towards the Pod with a nod.
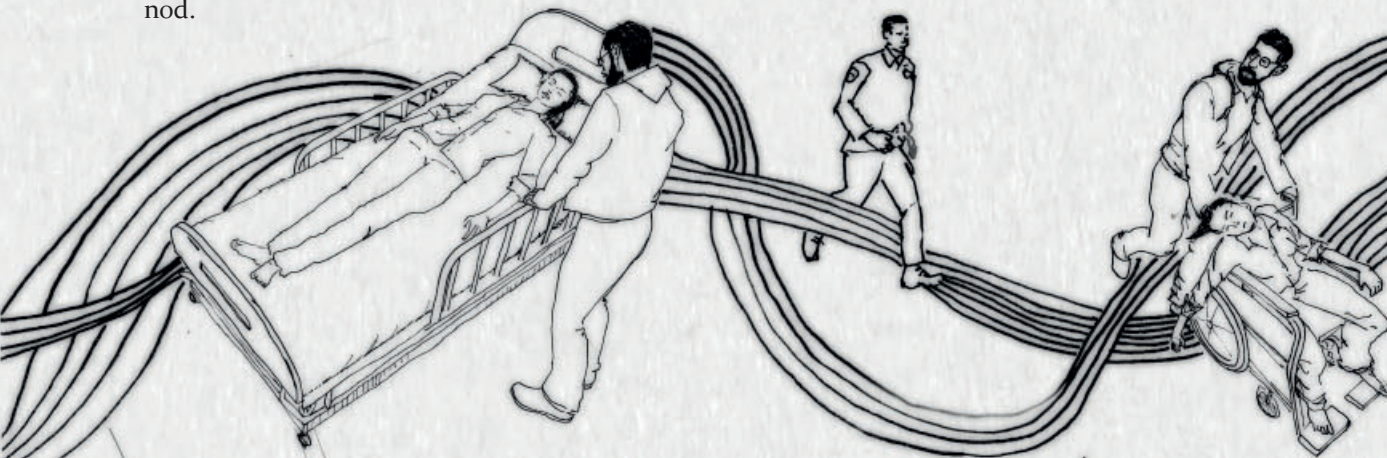
Smuggling goods & Drugs
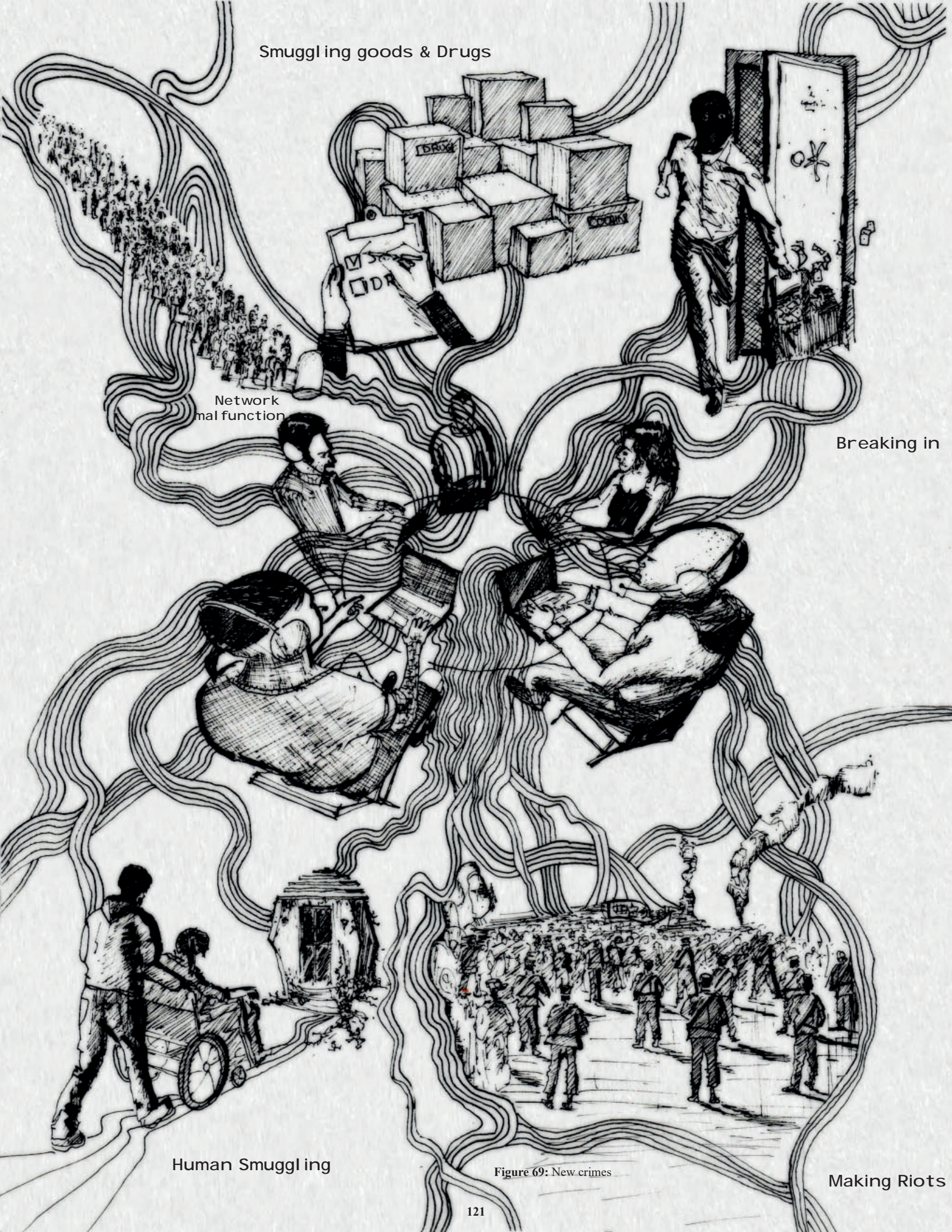
Network malfunction

Breaking in

Human Smuggling

Figure 69: New crimes

Making Riots

CHAPTER XIV
DNA COCKTAIL

    Tara is still motionless. I consider the situation. If I help her teleport first, who is going to take care of her on the other end, and help her out of Telepod? And if I go first, there is no one here I trust enough to place Tara into the chamber, everyone here is a criminal by definition. Karma has come back to haunt me. I remember getting complaints from families with quadriplegic family members and single parents with infants or toddlers not being able to use Telepods for the same reason: only one person at a time can teleport. We knew that science could not solve that problem anytime soon, the DNA separation was too complicated, but now, I think this problem could have been solved architecturally. As we sit desperately by our only way home, waiting for a miracle, I entertain myself trying to solve this puzzle.
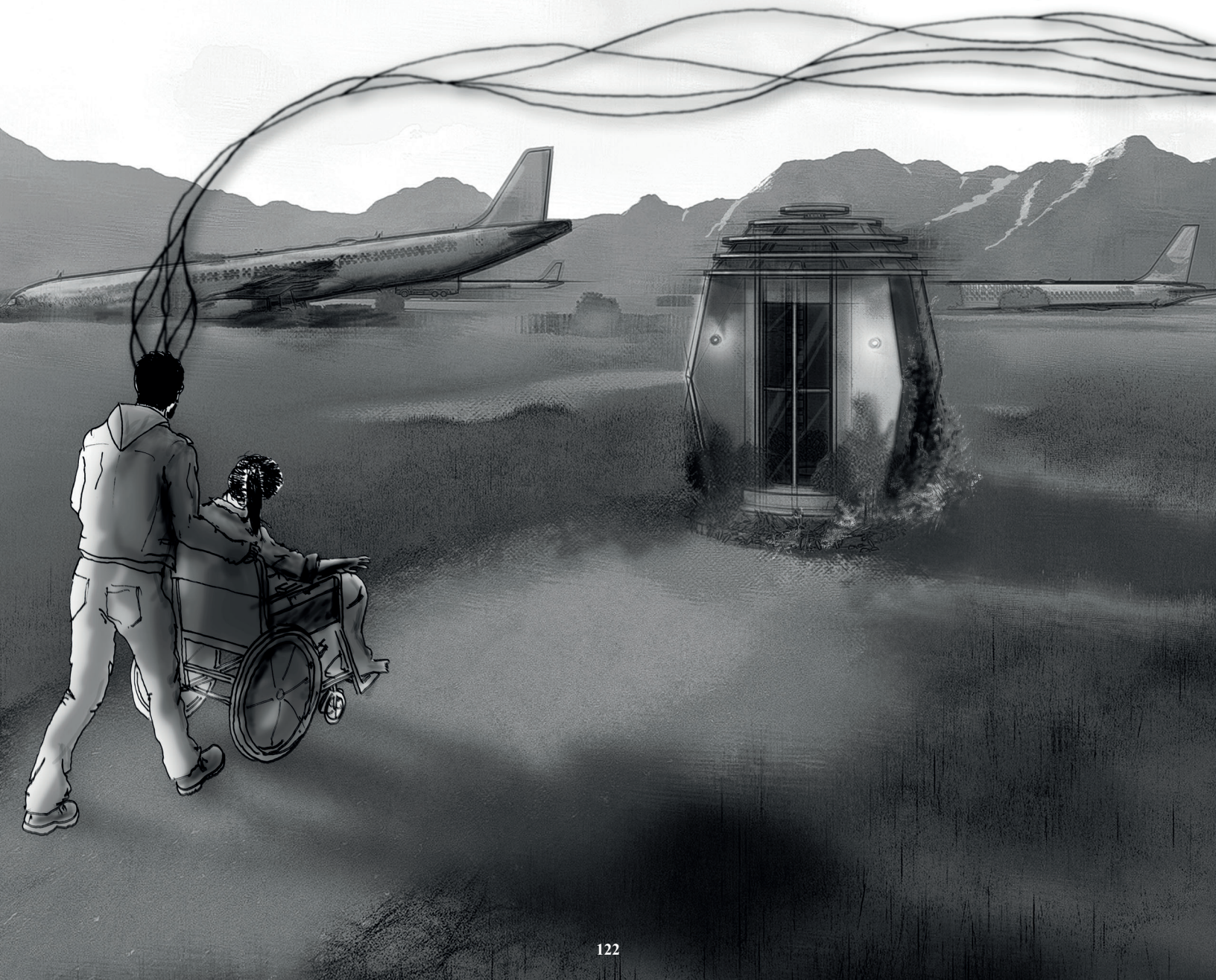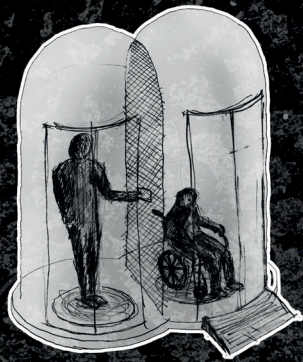
Automated Evacuation: Telepods could be equipped with an automatic wheelchair conveyor to help the person with a disability exit the telepod, allowing his/her companion to teleport after them.

Automated or Remotely Controlled Wheelchairs: This upgrade can be applied on wheelchairs to help them teleport with the help of an auto pilot mode or a second person controlling their wheelchair from distance.

Baby Telepods: Baby teleporters could easily, be added to the telepods to facilitate families with babies to teleport simultaneously with their child.

Dual Telepods: Two attached Telepods, separated by a transparent surface, which enable the person with a disability's companion to preserve a visual connection with him/her. The second telepod is controlled from the other side.

The miracle arrives in heels and a leather jacket. She may as well have stepped off of a motorbike, or right out of heaven. Our savior is gorgeous, strong and confident: a veritable Catwoman.

Isn't this thing connected to Toronto? That guy told me–

I need your help to teleport my girlfriend. She's unconscious and I can't trust these criminals.

Hi, excuse me, where are you headed?

What makes you think I'm not one of them?

Send her after me!

I don't see any other option here! Will you help us or what?

The stranger goes first to help Tara on the other end...

Figure 70: The one with the wheelchair

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At the other end...

They stay there all day, waiting for Sam.

2nd of April, 2029

Figure 71: The one where Sam goes missing

CHAPTER XV
SPLIT SOCIETY

A adaptation of technology is a necessity that

Reply: How come you are using this platform?

I can never trust new technologies!

I just think you are stupid!

Wasn't that your boyfriend who invented this disastrous machine? Now you're complaining when you let him fuck up our lives? You two deserved everything you got.

I can't even imagin life without teleportation!

I love teleportation! I have a lot of spare time in my days which previously used to be spent in traffic.

Follow me back Plz!

I teleport many times a day, and can't be more satisfied! He would have wanted us to enjoy it!

I too prefer the traditional ways of commuting, but they are just too expensive and not fast enough to let me stick to my daily plans.

Tara

6 years ago today, a Telpod took Sam from us . Every day I wish he'd never started working on this idea that has caused us so much pain. It was his dream to break barriers, and trying to cross them too quickly took him away. Sine that day I made the pledge not to use teleportation, and so many of you have joined me. My heart goes out to anyone who has been hurt or has yet to be hurt by this technology. We must stand together if we don't want to see this untrustworthy technology become more inevitable.

Posted on April 2, 2035

689,265 👍   1,547,154 👎

Reply: Change your job you idiot!

Every time I use a Telepod I have the feeling that It's not me coming out at the other end, but what can you do when work is 2500 kilometers away?

👍

I'm sorry for loss. At the same time, I believe he died for a good reason: to help reduce the dangers of older Telepods. He and other missing people are why we teleport safer now.

👎

Every technology has its own benefits and problems. Unfortunate incidents help us with learning about the problems and improving the new technologies.

👍 ... you are not consi...

👎

Damn you all! Teleportation is a Sin and not what God intended! I hope he is burning in hell for all the people he has made to conduct this sin every day!

👎

2nd of April, 2035

Figure 72: The post!

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CHAPTER XVI
THE TELEPORTOPOLIS,
THE CAR-LESS/BORDER-LESS UTOPIA

Ten years later,

When borders have faded from the face of the earth, now cleaner and greener than it's ever been...

Figure 73: The Teleportation world
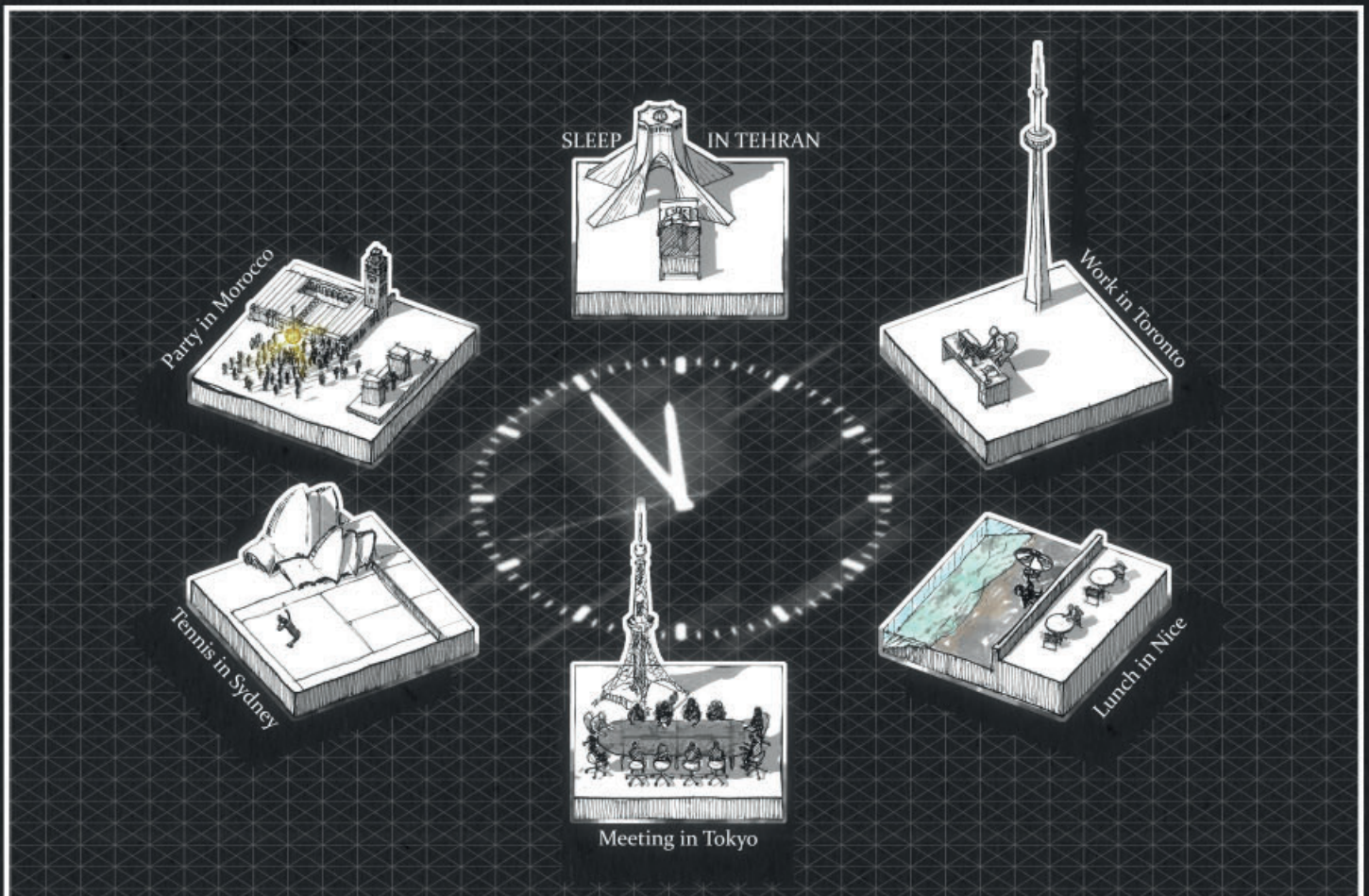
...when place is not inseparable from time...

...when working in Toronto, having dinner in Nice and sleeping in Tehran is not an unexpected routine...
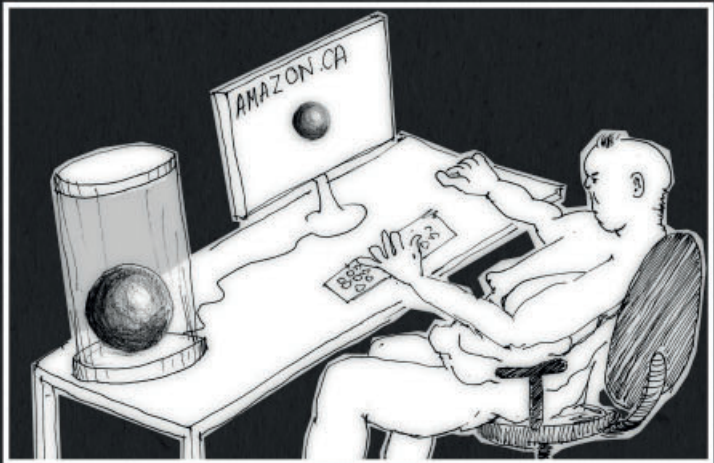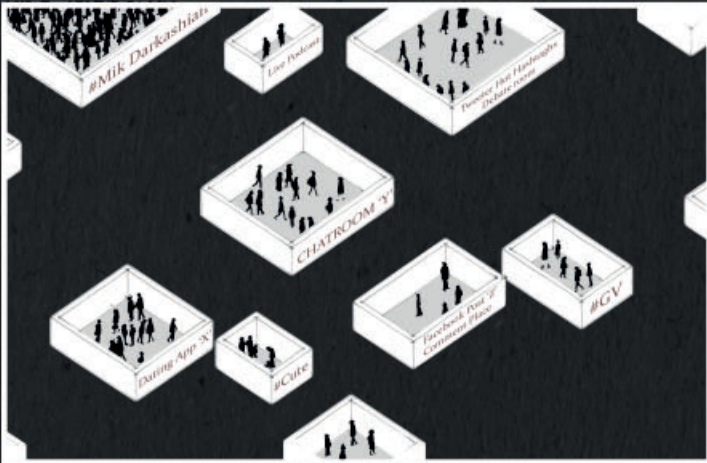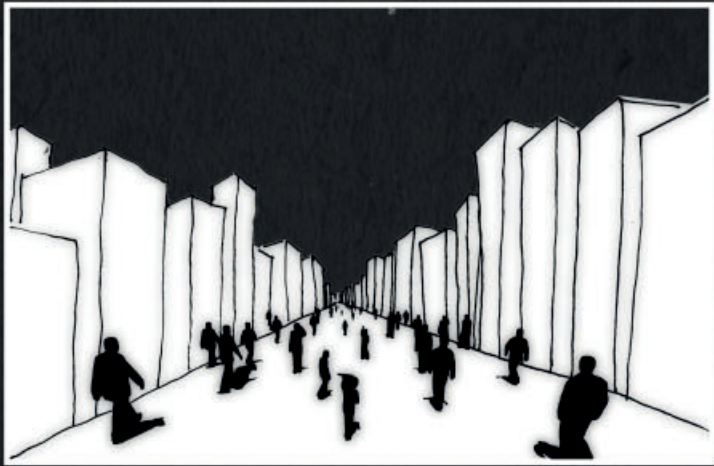
...when places are known by their coordination numbers or their domain names...

...when the next generation walks carelessly down the middle of the empty gaps between buildings...

...when the Internet and the physical world move at the same pace and are interwoven with each other more than ever; the lack of waiting time has erased from the process of online shopping, and chat rooms, dating apps and social media have evolved into physical places and experiences...

...when accessibility is guaranteed...

SLEEP IN TEHRAN

Work in Toronto

Party in Morocco

Lunch in Nice

Tennis in Sydney

Meeting in Tokyo
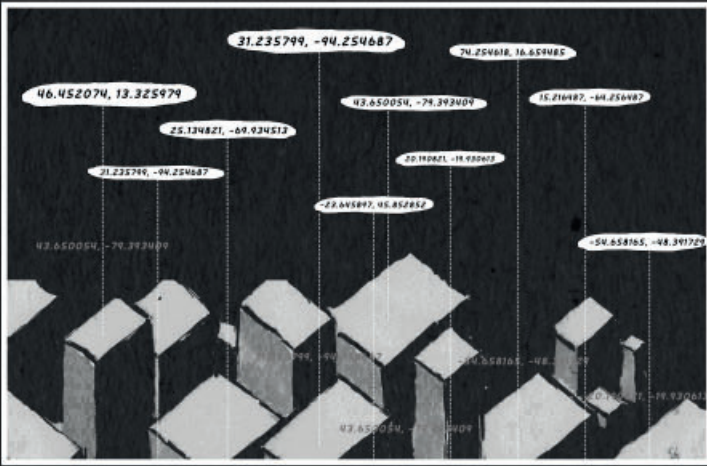
...when even energy is teleported and power lines remain only to orient people to the next town, if they have not entirely ceased to exit...

...when space exploration has moved to another scale, new galaxies are being found every day, and traveling to the moon and back is a day trip...

...when the recycling process happens inside garbage bins as they dismantle the waste they consume and send materials to sorted collections within seconds....
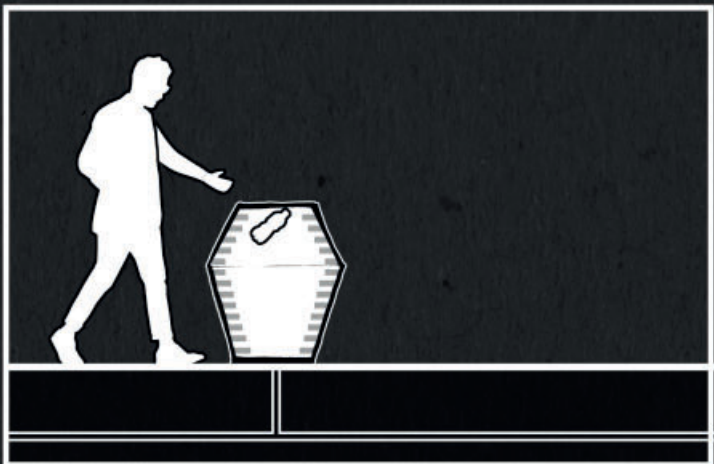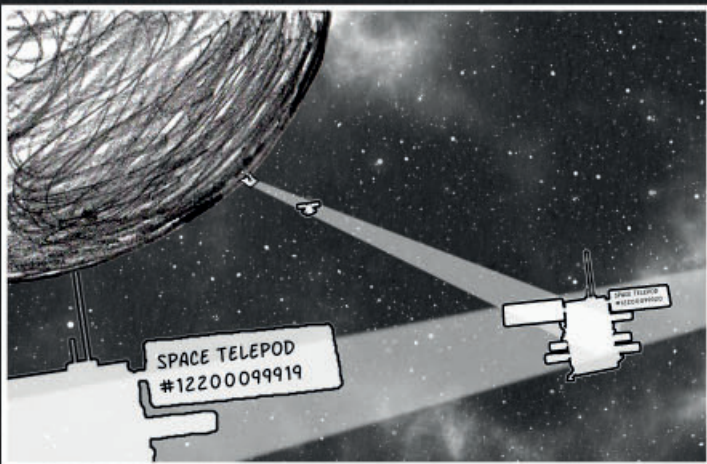
Figure 74: Teleportopolis-1

...when the only remaining motor vehicles are used for rare cases of emergency, the routes of which are elevated above the heads of people walking so as not to disturb their movements...

... and the transportation of heavier goods falls to drones...

...when remarkably swift movements in space are balanced with the slow moments of roaming around in urban environments which are now infiltrated by nature, colorful big and small kiosks, playgrounds, and street furniture and have been turned into spaces for socialization and enjoyment, enlivening the walking experience.

...when buildings and facilities, abandoned after the emergence of teleportation, have found new purposes...
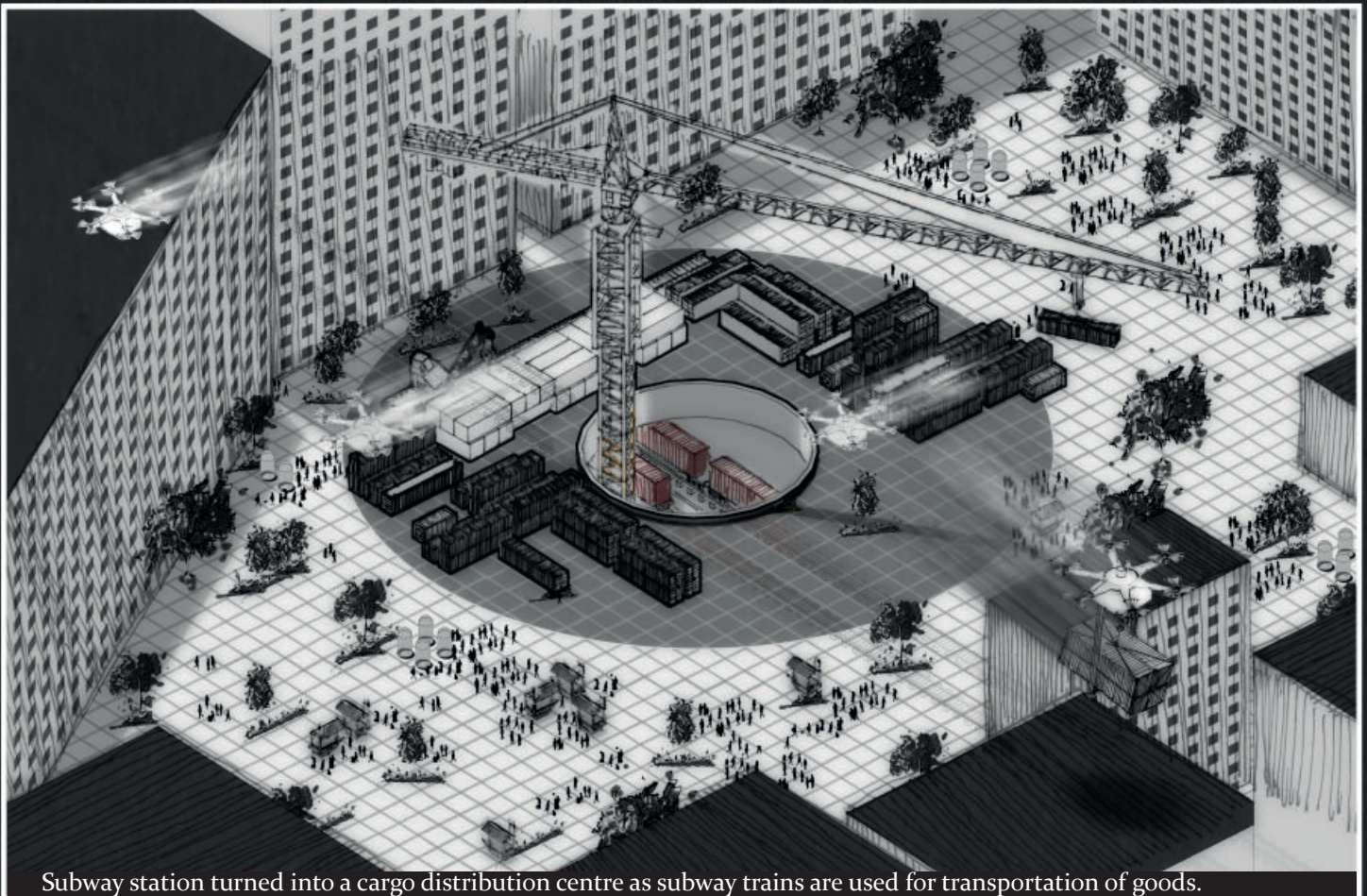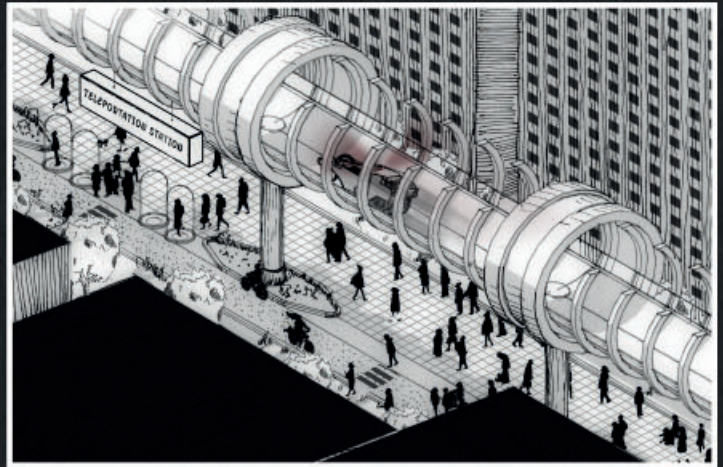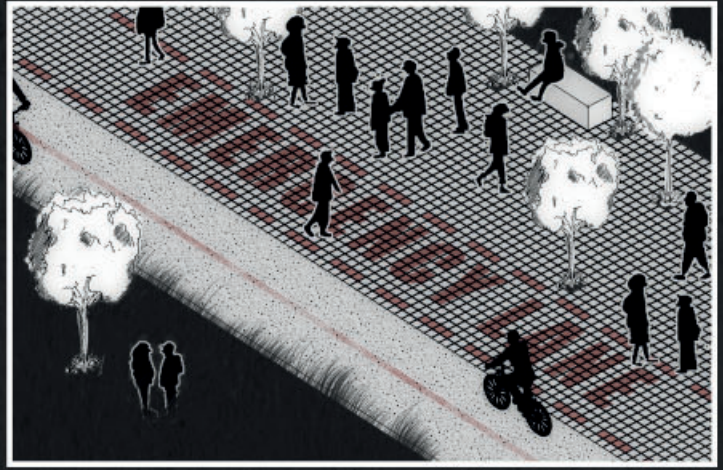
Subway station turned into a cargo distribution centre as subway trains are used for transportation of goods.

...when the many vast unused parking lots have repurposed to as homes for seasonal markets, parks or play grounds...

...when back lane garages have been turned into residential spaces...

...when, parcels are instantaneously mailed to their destinations through teleportation post boxes, called teleposts...

...when another row of buildings is added in the middle of the streets scaled for cars, wherever the height of the buildings allows for enough ventilation and daylight collection with an additional row...
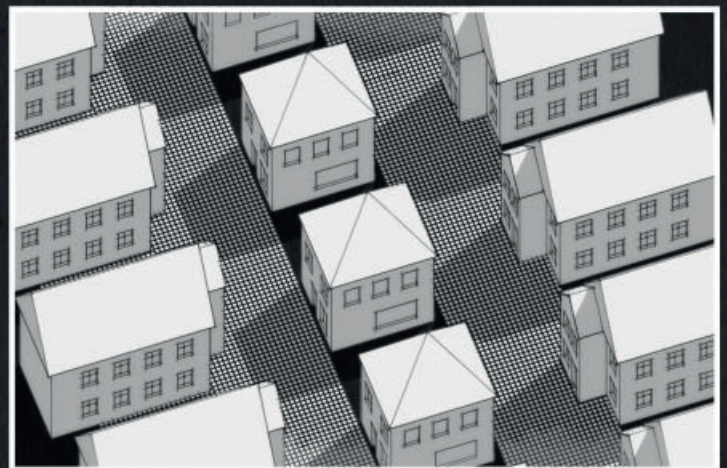
Figure 75: Teleportopolis-2

...From one vintage Telepod, exposed in the library of Toronto's museum of contemporary history, where some are enjoying the convenience of having their books arrive in the tiny Telepods next to the library computers, while others still prefer the journey, walking in between the bookshelves, touching the spines, rifling through the pages and judging a book by its cover...

I step out into the world even I never dreamed.
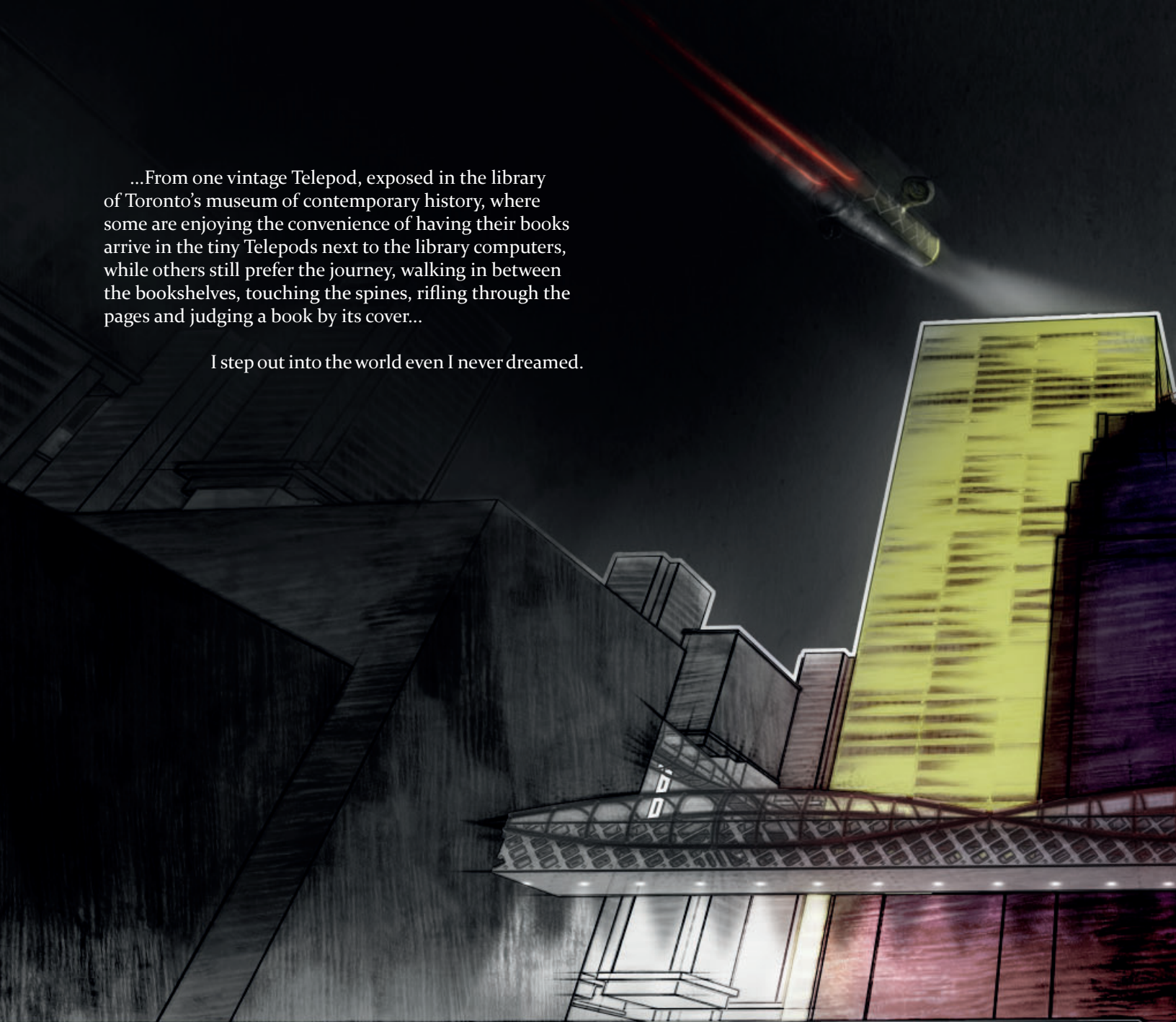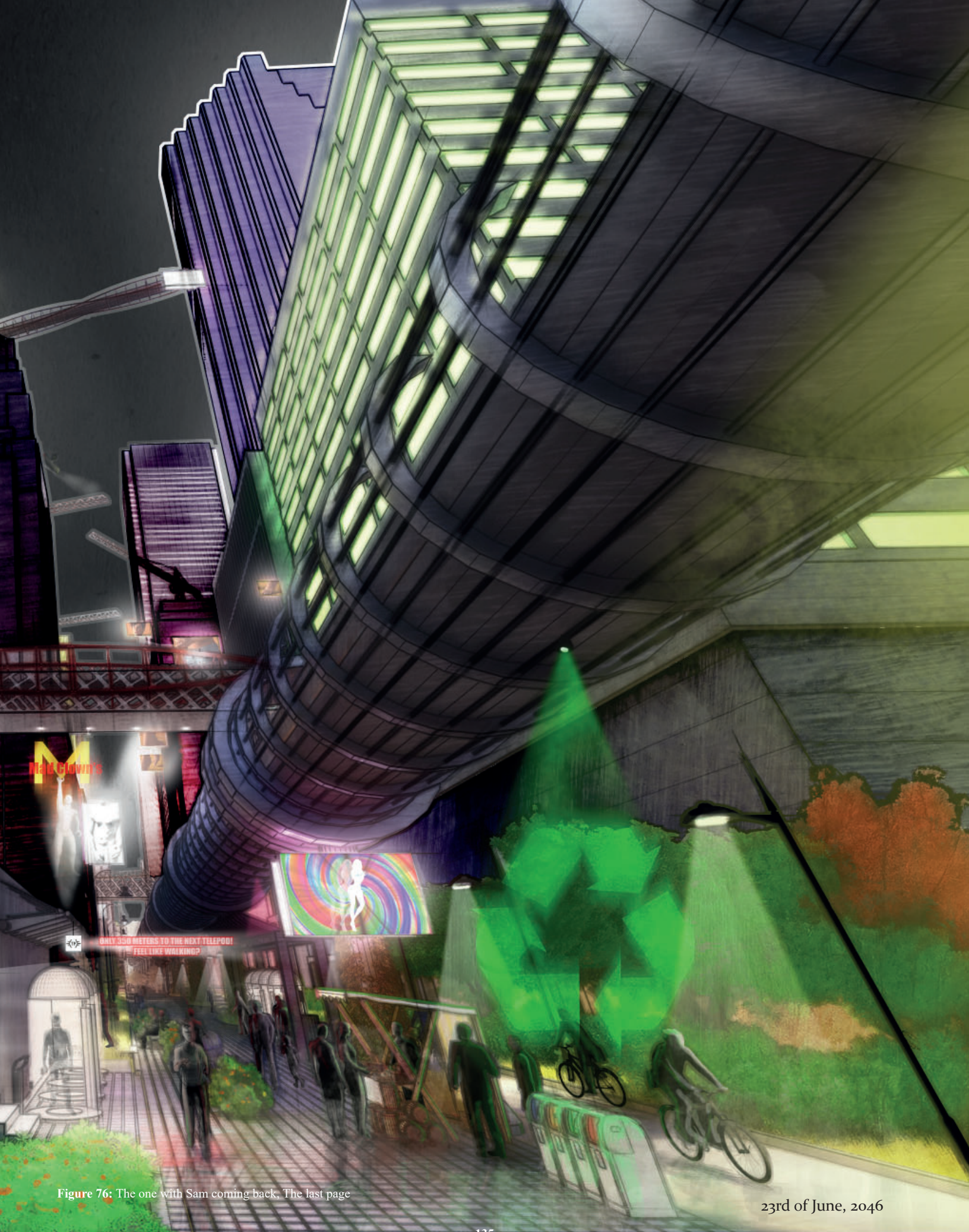
Figure 76: The one with Sam coming back. The last page

23rd of June, 2046

Figure 77: Back cover page

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