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## **Building the Virtual Space**

Concrete, as a material, single-handedly revolutionized architecture in the modern setting, enabling the industrial-era cities to develop into humungous organisms. Suddenly the building was set free from the constraints of gravity and straight lines, the building was now soaring in the skies in shape of sky-scrapers or creating unbelievable forms of architecture, such as Guggenheim in New York. Regardless, concrete was heralded as the perfect material for the modern world. A century later, when our concrete structures have crumbled and the material has itself run rampant throughout our cities and homes as a plague, our relationship with concrete is changing. Just as there was a yearning in the pre-industrial world to be set free from the clutches of traditional building material, a similar yearning seems to exist around the world today.

The material to overthrow the tyrannical rule of concrete on human-environment does not seem to be physical material, but a manifestation which does not exist at all in the physical world. Just as our villages and agricultural sites were succeeded by concrete industrialized cities, our cities will now be succeeded by cities of networks and information, a city of bits. The idea of “city of bits” first theorized by William Mitchell in 1995, was a response to technological innovation in the latter half of 20<sup>th</sup> century.<sup>1</sup> This “city of bits” now seems more plausible than ever before. In a time where our existence transcends geographical limits, the spaces we occupy are not constructed in an only concrete form either. Concrete, which for the past century and a half, has served as the primary container of our spaces is now faced with the task of constructing our spaces in “virtual world”, a non-physical abstract world which at least half of the human population now is connected to and occupies in some form or the other.

### Virtual World:

Since the time humans have created structures, there has only been one domain of building and that is the physical space. The architects, engineers, artisans have all built magnificent structures, monuments in the physical space, but now another dimension has been created due to technology. The dimension is the “virtual world”, space which exists beyond the three

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<sup>1</sup> William J. Mitchell, *City of Bits: Space, Place, and the Infobahn* (Cambridge, Mass: MIT Press, 1995).

dimensions of the physical space. With the spread and development of technology, the virtual world has invaded every sphere of life. Human activities which were once solely functioned in the physical space now occur in the virtual world. For instance, one does not have to physically meet a person in order to communicate with him, the virtual world offers text messages, video calling, and the internet which offer the same function. The idea of recreational activities now includes playing video games and reading online. The “shop” is no longer the only space where one can buy and sell goods, Amazon, eBay, Alibaba all offer the same services in a virtual setting. The extent of this overlap of virtual and physical space is such that terms once reserved for physical are used interchangeably for the virtual world. Terms such as “rooms”, “wall”, “stores”, “forum”, “gateway”, “ports”, “software-architecture” among others are all terms having roots in objects in the physical world. This phenomenon points to fundamental nature of the virtual world, according to Ettliger, is that *“the characteristics of places in virtual space are based on the characteristics of physical space, which serves as their initial point of reference.”*<sup>2</sup>

This statement shows that the virtual world cannot be devoid of the rules that govern the physical space because any attempt to do so would “paint a picture too ambiguous”. Ettliger uses the example of M.C. Escher’s “Relativity” to prove his point. The drawing although “defies” the laws of the physical space but its elements are still recognizable as components of the physical and that is why the viewer can make sense of it. Gale and Couclelis expanded on the idea of experiential spaces by defining three kinds of spaces, the physical space, perceptive space and cognitive space. Virtual worlds, although mimic physical spaces, are devoid of any physical space but instead are composed of perceptive space and cognitive space.<sup>3</sup> This “mimicry” can be in various forms, ranging from functional/programmatic mimics, spatial mimics and visual mimics and are employed to immerse the viewer in the virtual space. It is at this dichotomy between the representation of the physical world in virtual space and the actual building blocks of the virtual space that we further our inquiry. In this essay, virtual

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<sup>2</sup> Or Ettliger, “In Search of Architecture in Virtual Space: An Introduction to “The Virtual Space Theory “, *South African Journal of Art History* 22, no. 1 (2007): 10–23, <https://repository.up.ac.za/handle/2263/10337>.

<sup>3</sup> Carol Saunders et al., “Virtual Space and Place: Theory and Test”, *MIS Quarterly* 35, no. 4 (2011): 1079–98, <https://doi.org/10.2307/41409974>. : 1081

space refers to the entirety of the virtual worlds, inclusive of two-dimensional and three-dimensional spaces.

### Building Blocks of Virtual Space:

The human thirst for concrete seems to be insatiable at almost 1.5 -2.4 Billion tons of cement being produced annually for human-use.<sup>4</sup> This immense amount goes directly or indirectly into shaping our built physical environment. The building blocks of the physical world are tactile, real objects, while in the virtual space the building blocks are intangible strings of code relying on no more than ones and zeros (1s and 0s) to build everything. This code, much like the spaces it builds is inherently “anti-spatial” and negates any conventional geometry, relying solely on nodes, servers, optic fibre lines to exist.<sup>5</sup> On the surface, it might seem that the difference between the “concrete” of the physical world and the “code” of the virtual space is obvious but at closer examination, we begin to notice the similarities between the two materials. Concrete, fundamentally, is a formless material, it is shaped by the formwork that dictates the final form and shape of the building, similarly the code is just a combination of ones and zeros which are then organized by an entity, usually the programmer, to perform functions and become a program thus revealing the final virtual space.<sup>6</sup>

This common aspect of both the material can be better understood by using Heidegger’s understanding of technology. He describes all technology as “an act of revealing”, the man, not as its wielder or master but as a “standing reserve”, doing nature’s bidding to reveal and unearth the potential of nature.<sup>7</sup> If we are to accept this definition of technology then we can also understand that all technology is not unnatural but instead concealed in nature itself. Thus, even virtual space, which is entirely constructed by manipulation, ordering and

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<sup>4</sup> Stephen Phillips, review of *Review of Concrete and Culture: A Material History*, by Adrian Forty, *Journal of the Society of Architectural Historians* 73, no. 3 (2014): 417–19, <https://doi.org/10.1525/jsah.2014.73.3.417>. : 417

<sup>5</sup> Mitchell, *City of Bits*. : 8

<sup>6</sup> Phillips, “Review of Concrete and Culture”. : 417

<sup>7</sup> Martin Heidegger, *The Question Concerning Technology, and Other Essays* (New York: Garland Pub, 1977). : 19-20

“revealing” of bits of intangible codes, can be viewed as within the purview of nature much like the concrete building which is “revealed” to the world in one coherent form.

A question can, therefore, be raised, if technology and by extension virtual space is indeed part of the natural world then what is the experience of human “self” in this space, of the human which is the sole living occupier of this realm, unlike the physical world.

#### The “self” in virtual space:

According to Belk, the virtual space (referred to as the digital world by Belk) acts as an extension of the self.<sup>8</sup> It is important to note here that Belk does not view the self in the virtual space as different from what it is in the “concrete” world, a differentiation which various other researchers create. For Belk, the “self” inside the virtual space is not a separate entity but instead borne out of the self in the physical world. For him, this *“relationship between online and offline personas becomes a key to defining the self in a digital age.”*<sup>9</sup>

Belk introduces a five-fold approach of how the extended self in virtual space develops, starting from dematerialization, where physical objects are recreated or transferred into virtual realms, such as letters becoming e-mails or books transforming to e-books. Second stage is “Re-embodiment”, where the self is slowly re-created into the virtual world through increased dematerialization of our physical life or by means of an avatar in case of 3-D virtual environments such as video-games or MMORPGs (Massively Multiplayer Online Role-Playing Games). This is followed by “Sharing”, in the virtual space, the entire space is indirectly or directly constructed through the act of sharing, be it programs, content, information, media etc. Belk notes that the virtual website Facebook acts as a “key part of self-representation for one-sixth of humanity”.<sup>10</sup> This puts into perspective the scale of this phenomenon, whereby people, by extending themselves into the virtual space allow not only their own self but others to partake in this construction of self. By receiving feedback, comments, likes, ratings, followers, subscribers amongst many others, the “self” responds, learns and evolves, this is the stage of

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<sup>8</sup> Russell W. Belk, “Extended Self in a Digital World”, *Journal of Consumer Research* 40, no. 3 (2013): 477–500, <https://doi.org/10.1086/671052>. : 477

<sup>9</sup> Ibid. : 478

<sup>10</sup> Ibid. : 484

“Co-construction of Self”. The final stage is of “Distributed Memory”, where our extended selves over time acquire memories, associations and feelings (this is the “cognitive space” of Gale and Couclelis). A perfect example of this would be the “Facebook timeline”, which is a visual representation of all our past activities on the website going back to the “birth” of our extended self.

Belk’s analysis of the development of our “self” in the virtual spaces seems to provide a comprehensive framework of understanding the human experience as it evolves in the virtual space but it also highlights an alarming situation. His approach relies on the idea of “possessions” as the driving force in this experience of the self, a strikingly neoliberal interpretation.<sup>11</sup> It is the relationship of the “extended self” to the possessions that is the basis of each step. From the first stage, where dematerialization only occurs with our possessions, our physical cd-library transforms into a virtual library, a physical photo album is replaced by online one, it is the acquiring and owning of these virtual assets that act as fundamental to the existence of the “self” in the virtual space. When “sharing”, it is again the sharing of the possessions that acts as the driver of this stage, even something as intimate as a “thought” which is “shared”, “tweeted”, “posted” becomes a mere number on our posts/activity logs. The various forms of feedback turn the virtual space into highly competitive and pressurized spaces, where virtual-selves are judged through stars, ratings, likes, followers, all of them highly relative scales without any fixed/objective measures.<sup>12</sup> The shared space of the virtual worlds turns in to competitive spaces, not unlike the free-markets of neoliberalism which breed only competition.

The concrete, on the other hand, did not become a slave to any specific ideology. Adrian Forty although describing the use of concrete as a material of choice for the Soviet Union further comments on the commonality of concrete in all spaces of our era, referring to it as “a link of common visual and material language” throughout the globe.<sup>13</sup> It can be said that this neutral aspect of the concrete, its ability to adapt and respond to all contexts, has allowed this material to attain a critical role in shaping the industrial cities. The virtual space in present times, built

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<sup>11</sup> Ibid. : 476

<sup>12</sup> “Tell Me it’s Going to Be OK | Miya Tokumitsu”, *The Baffler*, no. 41 (3 September 2018), <https://thebaffler.com/salvos/tell-me-its-going-to-be-ok-tokumitsu>.

<sup>13</sup> Phillips, “Review of Concrete and Culture”. : 418

by the code and bits of data, can safely be understood to promote a neoliberal self-understanding, a hindrance that might contort not just the present experience of ourselves but the evolution of virtual space and in turn the human civilization.

Although the virtual space, even with all its advancements, complexities and nuisances, can still be considered to be in its infancy, it should not be overlooked that it is starting to influence the physical world with all the more tenacity. This influence does not flow directly from the virtual space into the physical world but instead through the sole medium between the two, the human.

### Cyborg Citizens:

Mitchell, when theorizing about the “city of bits” also comments on the “citizens” of these cities, he refers to them as “cyborg citizens”.<sup>14</sup> These citizens, due to their radical connections with the virtual spaces, networks would have infused their existence between the physical and the virtual. As the distinction between the two realms will keep on collapsing, the further the intensity of the connection will increase. Mitchell was not the only one to raise the question of Cyborg Citizens, Ihde and Verbeek also discussed this idea in their works. For Ihde, amongst four types of relationships between humans and technology, the first type was of “embodied relationship” where the technology extends human perception and sense of the world.<sup>15</sup> This embodied relationship allows the human to experience the world in a manner which would not be possible without technology. Verbeek also explores this idea where he establishes only two types of human relationships with technology i.e. “cyborg relation” and “composite relation”.<sup>16</sup> While cyborg relations go a step further than Ihde’s embodied relationship, where the technology can even “physically alter the human” such as in form of transplants, the “composite relation” enables in creating and altering the reality of the user.<sup>17</sup> One might be

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<sup>14</sup> Mitchell, *City of Bits*. : 28

<sup>15</sup> Johnny Hartz Søraker, “Virtual Worlds and Their Challenge to Philosophy: Understanding The “Intravirtual” And The “Extravirtual”, *Metaphilosophy* 43, no. 4 (2012): 499–512, <https://www.jstor.org/stable/24441850>. : 501

<sup>16</sup> Ibid. : 502

<sup>17</sup> Ibid.

mistaken to believe that these cyborg citizens are a future phenomenon, while in reality, we have already started on that path.

Our everyday life is highly connected to the virtual space, from our phones, watches, cars, houses to even glasses. The cyborg citizen is the netizen of today, not yet fully transformed but nevertheless suffering from the same phenomenon. This, of course, produces a series of concerns and questions which need to be addressed more effectively. Mitchell points out this infusing of technology, and by extension, the virtual space, with the human has effectively “shattered the unities” of architectural spaces and experiences.<sup>18</sup> Our existence, in many ways, is not limited by constraints of physical space anymore but flows freely in the virtual space in form of videos, calls, even holograms. The devices we wear and carry act as “organs” to our virtual selves enabling us to communicate, see and experience much as our physical organs do. With the increase of immersion in virtual space, the individual human would become more connected to each other (a mantra already reinforced by a plethora of online communities and services) and this would come at the cost of privacy. It is not the sacrifice of privacy that is concerning but the idea that the individuality of the person would come under serious threat. By sharing virtual space with thousands or millions of other users, your “extended self” would be possession of many others, “co-created” through their feedback, responses and active participation. This voluntary act of handing over our self to the world could fundamentally re-shape the structure of human society.

Søraker, in order to simplify the relationships between human and virtual space, refers to only two kinds of experiences, i.e. “extra-virtual” and “intra-virtual”<sup>19</sup> but carefully points that these experiences are not contained in one realm and tend to influence each other. “Extra-virtual” refers to any effect which is produced outside of the “virtual world” while “intra-virtual” events only influence the “virtual spaces”. These two distinct realms, due to not being contained in solely one sphere can create drastic effects. For instance, an *EverQuest* player committed suicide when he was robbed of his digital goods.<sup>20</sup> An intra-virtual event proceeded to create an extra-virtual event. This influence of intra-virtual and extra-virtual has also created ethical

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<sup>18</sup> Mitchell, *City of Bits*. : 44

<sup>19</sup> Søraker, “Virtual Worlds and Their Challenge to Philosophy”. : 499

<sup>20</sup> Belk, “Extended Self in a Digital World”. : 480



and moral dilemmas. Crimes in virtual spaces, especially in games such as SecondLife, World of Warcraft, which range from stealing, cheating to instances of virtual-rape has raised questions about how these intra-virtual events can be dealt in both intra and extra virtual settings.<sup>21</sup> On the face, these crimes deal no harm to the victim but reports of emotional distress, breakdowns and mental well-being getting affected are not uncommon, but they largely depend on the user. Cyber-bullying, until recently was not taken as a serious concern. This complexity, where not only the intra-virtual effects of events but also the extra-virtual events have to be examined creates a situation where our understanding of the physical world, the real world, might need to be adapted.

Unlike concrete, the digital code, the building blocks of the virtual space have not limited themselves only to the creation of the space in the virtual setting, these blocks have also influenced the human itself. The physical world, cast in concrete was shaped by man, the digital code, the future “concrete” will not only shape our physical and virtual environment but will also shape the human experience of life.

### Conclusion:

The reign of concrete in our physical environment might not end soon but with the emergence of the virtual spaces, both two dimensional and three dimensional it might not be our primary material in the near future. The increasing pace at which the virtual space and the physical space are fusing into each other, we would be faced with the task of understanding completely new and intangible material, the digital code, the 1s and 0s. This essay attempts to look at the peculiarities of this new material and how it could influence the spaces we occupy. The formlessness of the computer code offers infinite possibilities to be explored and manipulated, much like its physical counterpart, the concrete. Its control presently lies in the hand of select few, the computer programmers, who understand the language and thus actively shape our experience of these spaces, it could either be highly democratized in the future or fiercely guarded. This raises the questions of what kind ideologies would govern this unique material. While our present experience of the virtual space, to a certain extent, has been created in the

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<sup>21</sup> Ibid. : 493

image of neoliberal ideas, this could very well change in the future. It is quite evident that whatever the experience of virtual spaces is, they are not in isolation from physical self. The virtual space influences the physical space through its user, therefore the computer code becoming a material, directly, of virtual space, and indirectly, of physical space. This future “concrete” will go further than just shaping environments but influence the human itself and their daily lives. From our sense of morality to our association with ourselves, the structure of the human society could very likely be reshaped by this new material. It might be said that through this material, humans would be rebuilding what it means to be a human. This essay does not mean to describe the future as doomed but intends to highlight the potential that this new “concrete” offer for not just building space but for humans themselves.

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