Unraveling the Urban Metaphor in the Virtual Realm: de Digitale Stad/the Digital City as an Experimental Playground for the Early Web

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15 January 1994 marked a crucial point in Dutch internet history: de Digitale Stad, or the Digital City, opened its virtual gates. The Digital was essentially a digital representation of a city, offering users the opportunity to interact with each other and with the virtual space. The platform provided a range of services, including chat rooms, forums, and online events, allowing residents to engage in discussions, share information, and collaborate on various projects. The Digital City played a significant role in shaping the early culture of online communities and digital interaction. It was an experiment in creating a virtual public space, and its legacy can be seen in the development of subsequent social platforms and virtual worlds. Having existed from 1994 to 2001, the Digital City may not be as widely known as some contemporary platforms, yet its historical importance lies in its pioneering efforts to establish a digital community and explore the possibilities of online interaction.

The Digital City emerged as an initiative spearheaded by the institution De Balie in Amsterdam, which was at the vanguard of local cultural politics in the Netherlands, in conjunction with the computer periodical Hack-Tic, the progenitor of the renowned internet service provider XS4ALL. Co-founded by Marleen Stikker, appointed mayor of the virtual city, the platform represented a pioneering venture in the nascent stages of the internet, a period wherein approximately a sole three hundred individuals in the Netherlands possessed residential internet access. This demographic was characterized as a cadre of so-called 'net aristocrats', necessitating a command of net etiquette (netiquette) as a prerequisite for participation.

De Balie initiated the idea of the Digital City as a response to "the government who were on the lookout for ways to modernize the social and economic infrastructure of the country in the wake of a global economy" and elected politicians who struggled with "dwindling public support and sagging credibility (Riemens and Lovink, 330-1). They came up with a proposal and presented the concept to the Amsterdam City Hall. The Digital City was initiated as a ten-week electronic democracy experiment, coinciding with the municipal election campaigns in mid-March 1994. All too soon, widespread communication emerged among participants, with the notable exception being the absence of politicians on the new platform.

Despite the Digital City's inability to bridge the gap between politicians and the electorate, it rapidly became Europe's largest and most renowned public computer network or freenet. This translated into numerous dial-in phone lines, a complimentary email address for each user, ample opportunities for connecting and sharing information, and, most importantly, freedom from censorship and surveillance.

So, the Digital City was founded in a period when the Internet, and subsequently the World Wide Web, was not accessible to many people.[1] Only five years earlier the inventor of the Web, Sir Tim Berners-Lee, had written the proposal for an Internet-based hypertext publishing system that would help the company in scientific data-sharing in a rapid and border-crossing way. Following the NCSA's (National Center for Supercomputing Applications) release of its Mosaic web browsers in 1993, the Web, which initially emerged from academic and scientific background, took on its worldwide dimension. Cybercafes popped up on street corners, industries from all over the world started instruction courses on the Web for their employees and it was only a matter of time before alternative browsers and services popularized the use of the Web internationally. It was, to cite Mike Sendall's remark on Berners-Lee's idea, "vague, but exciting": this new online space was, for many people, unlike anything they had encountered before. Nowadays it is almost impossible to imagine, but there was a time when people had to be introduced to cyberspace. How could users make sense of the Web; and what should they be doing there?

The Digital City is an excellent example of how metaphors facilitate human-computer interaction. The virtual space of the City hosted a post office, where one could send and receive e-mails, meeting places, where people could chat with other online users, and a station, so one could 'leave' the Digital City and discover other places on the Web. Such metaphors play a significant role in shaping the understanding and adoption of the Internet by providing analogies and conceptual frameworks that make complex technological concepts more accessible to the general public.

In this thesis, I aim to unravel the complex dynamics of structuring digital space like a city. The Digital City, with its metaphorical elements mirroring physical entities, serves as a fascinating case study for understanding how individuals interacted with and navigated the early landscape of the internet. The concept of a city not only helps the user to navigate the digital space, for its urban representation helped in visualizing the internet as a spatial environment and thereby gives a sense of locality, but it also immediately transforms the user into an active participant. Whether we are a tourist or a citizen, we fulfill a certain social role in a city. Moreover, a city is often in a continual state of transformation. Factors such as economic forces, population growth or decline, and cultural and social shifts can change a city, may that be rapidly or in gradual shifts over time. All in all, there is an evolving climate that people can engage with.

Now, many cities that we know have a long history. Leiden, the city where I live myself, is approximately nine centuries old. Unlike Leiden, the Digital City did not have canals hundreds of years old, architecture built because of its location, and marketplaces reflecting their function from the Middle Ages. Nor did it have a set demography (although it would, over time). This entails that the city was open for reinvention and adaptation. In this transformative landscape, the Digital City took on the role of a playful metaphorical playground. The virtual representation of a city was not merely a structural framework; it became a canvas for playfulness, experimentation, and exploration. We shall see that this playful venturing is infused into the formal structure of the virtual city. That is why, aside from investigating what the city metaphor *does*, I seek to understand how

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[1] The World Wide Web — or 'the Web' — is the leading information retrieval of the Internet. Although the two terms are often used interchangeably, the Web and the Internet are two distinctly different things and should not be confused as synonymous. The Internet is the underlying system that conveys data for different applications, of which the Web is the biggest one of all. In this sense, the Web is an application that runs *on top* the Internet, in the same way a car drives on a highway and a train runs on tracks.

playfulness manifested itself in the Digital City and how users adapted to this playground so they could make the digital space their own. So, the research question I seek to answer in this thesis is,

> 'In which ways did the urban metaphor of the Digital City shape human-computer interaction, and what role do 'play' and 'playfulness' occupy in facilitating this process?'

In answering this question, I will focus on the third and last version (DDS3) of the website specifically and will concentrate on the very first years of the World Wide Web, which means that I will not be looking into any web elements that are older than 1997, when the use of the Web gradually become more common.

The first chapter, 'The Digital Home' treats the homepages of the city, which were presented as 'houses'. Every registered citizen of the Digital City would receive a digital house/homepage, which they could 'decorate' as they wished. Building upon Marianne van den Boomen's theory around the concept of icontology, I analyze the spatial structure of homepages 'built' by DDS citizens and look into the playful process of programming and assembling a house in a DIY (do-it-yourself) manner. Chapter 2 serves to highlight movement in the virtual space, keeping in mind the medium-specific qualities of the Web and tending to how these fulfill a role in the virtual city metaphor. In this section, I focus on the tactical movements of the digital citizen/tourist. The last chapter attempts to uncover how play and playful elements inherent to the platform expedite user engagement.

My method in researching the Digital City is media archeology, though this will remain largely invisible through my writing. I build upon media archeologists such as Kees Teszelszky, Scott Nicholson, and Jussi Parrika and their theories and methods. Web archeology "[means] that the focus is on actively uncovering the history of the web in its early days, emphasizing the role of 'digging' and 'reconstructing' as central methods in tracing material objects […] and born-digital objects" (Teszelszky 2019, 1). In this sense, digital archeologists mirror their analog counterparts in applying methods that help uncover and understand the culture of which these (digital) artifacts were a part. Taking into account that the technological capacities of the early internet days differ from now is extremely important when analyzing born-digital objects. However, we should also take note of how we interpret these objects from our own cultural and temporal position. Because of the interplay between past and present, my modus operandi in media archeology is largely influenced by art historian Jussi Parrika's *What is Media Archeology?* (2012) and the volume he co-edited with media historian Erkki Huhtamo, *Media Archaeology: Approaches, Applications, and Implications* (2011). What both these works demonstrate, is that media archeology encompasses a large number of disciplines — "theories of cultural materialism, discourse analysis, notions of nonlinear temporalities, theories of gender, postcolonial studies, visual and media anthropology, and philosophies of neo-nomadism all belong to the mix" (Parrika and Huhtamo 2012, 2) — and therefore is inherently heterogeneous. Furthermore, Parrika recognizes that media cultures are sedimented and layered. These layers of the past demand analysis in their singularity. The general claim that is being made by Parrika and the aforementioned media archeologists is that we need to be aware of the structure of, for example, a web page. It exists out of thousands of different, multi-layered elements, and while it is impossible for us to reconstruct all of them, we can carve out the aesthetic, cultural, and political singularities of such an element.

By looking through the lens of these theories, this thesis recognizes that looking into the Digital City's metaphor and the playfulness it invoked, it is necessary to combine semiotic digging and hermeneutically situating the digital artifacts.

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Chapter 1: The Digital Home

"Welcome to my place!".

As you stumble upon 'bugsb's[2] personal homepage, you are greeted warmly with this exclamation. Your visit is carefully kept track of by a visitor counter: 'You're number *x* to visit this place' since the date of publication, 'September 5, 1995'. Touching upon this date, the publisher of this site also included the last time they altered this digital house. Scrolling down, we see that this was on 'Saturday Januari [January] 25, 1997'.

Upon becoming an inhabitant/citizen of the Digital City, the user was provided a web space that functioned as a kind of 'house'. This house was situated somewhere in one of the city's building blocks, which each could hold twenty-five houses, and the owner could choose an image as representative of the house's facade.[3] Below, we see two of these houses in the Digital City, those of DDS inhabitants 'bugsb' and 'kovi',[4] respectively. The webpage of 'bugsb' contains a menu, or a *guide*, listing its content. Text in different fonts and colors, some hyperlinks and some not are accompanied by images and animated GIFs. The visitor can surf to 'bookmarks', where they can enjoy 'bugsb's' favorite websites, applications, and software, and to 'friends', where they can find the 'houses' of his RL (Real Life) and cyber friends. They are also able to navigate to 'sign guestbook', where they can leave a message for the owner of this house, Roeland, as he introduces himself in the 'about me' section.

Figure 1: the personal homepage of bugsb

[2] [https://web.archive.org/web/19990203192256/http://huizen.dds.nl/~bugsb/]

[3] 'Projectverslag De Digitale Stad,' *De Digitale Stad*, https://www.dds.nl/html/dds/jarig/3.0project/

[4] https://web.archive.org/web/19980130204346/http://huizen.dds.nl/~kovi/

He laments the inactivity on this guest book with a '*sigh*', but celebrates 'Doug's Chat Regulars Webring', the circularly structured collection of websites that bugsb's page is part of. 'Kovi', too, promotes their 'chat page', and says that if the visitor would like a 'cool talk' they first have to take a seat in the 'waiting room'. They greet the visitor with a capital 'WELCOME!!' and applauds their choice to *spend time* with them by coming to this website. Additionally, they note that this page 'is still under construction', speaking of the page as if it is a literal building that is in continual need of renovation.

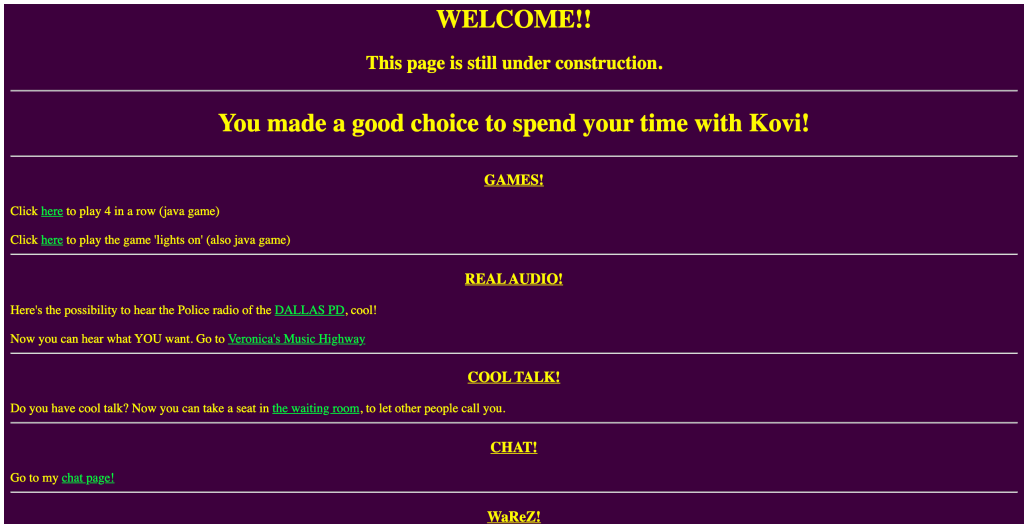

Figure 2: the personal homepage of kovi

What is noticeable in the description of the homepages of bugsb and kovi, is how the digital space is made sense of. The convergence of the word 'homepage' — 'home' and 'page' — illustrates the complexity that comes along with understanding the new medium, the Web. The homepages discussed are metaphorically structured, firstly, in spatial terms that reflect the village-like qualities of the Digital City: we are *visitors*, welcomed to a *place* that is a web *site*, which is *under construction*. Through icons and language, the homepage is framed as though it is a building, or more specifically, a house. The rhetoric used on these homepages, for example 'spend time' and 'chat' mirrors this house as a metaphor. Secondly, the use of media-based metaphors such as 'page', 'book' and 'guide' is important. In understanding the Web and its infinite uses, previous media forms are refashioned in the digital realm. The popular use of bookmarks, thus a method of storing websites, is an example of how an everyday media object makes navigating through the Web comprehensible through its metaphorical application.

In this chapter, I delve into the dynamics of the symbolism and iconography of homepages of the Digital City in order to understand how metaphors frame human-computer interaction. I will do this by building upon theories on metaphors within interface and computing, and how these metaphors invite (and efface) ways of interaction. In this, there are two aspects of importance. The first treats the way in which the (digital) city and its houses invite participation through their familiarity as metaphors. The second concerns a procedural interaction between the user and the computer. In other words:

1) how do the metaphors afford patterns of interaction
2) what kind of *process* do the metaphors afford

In what follows, I will first provide the theoretical framework of this chapter. With the help of, amongst others, Marianne van den Boomen, Janet Murray, and Lev Manovich, this chapter investigates how metaphors have decisive socio-cultural consequences. Secondly, I investigate how the metaphor of the media-based metaphor of the *page* invites modes of interaction. The page metaphor is not unique to the Digital City, but it serves to exemplify the theoretical ideas of this chapter. At last, I delve into the metaphor of the 'house', which initiates the process of what I call 'digital homemaking', a process that distinguishes the 'house' from the 'page' metaphor. Digital homemaking concerns the process of making a homepage to make new digital artifacts comprehensible, taking into consideration the proceeding of programming, assembling, and styling of a homepage. As such, digital homemaking is the act of making a house a home. In this last part of the chapter, I seek to place the concept of digital homemaking within the metaphor 'home/page' in the context of the Digital City.

The Affordances of the Metaphor

The standardization of the Web, facilitated by grass-root initiatives such as the Digital City, provided the chance for many people who were not necessarily versed in computing to not only navigate but also to be a producer in cyberspace. An HTML file in the form of a webpage — because that is just what a webpage is: an online file — afforded a possibility to be part of the Web. Notice how I used the term *afford*. What happens in the case of digital metaphors, is that certain action possibilities, or *affordances*, are constituted. In digital media, affordances are the features of a technology that make possible a certain action. They are "properties of the world defined with respect to people's interaction with it" (Gaver 1991, 80). Otherwise, media scholar Janet Murray describes affordances as "the functions that the physical properties of an object make possible" (Murray 2012, 60). It is important to note that in both of these instances, affordances are not synonymous with the properties of an object. Rather, they are what the object allows the human (or animal) to do with it.

Psychologist and designer Donald Norman (1988) used the term affordance in the context of design and human-machine interaction to refer to those action possibilities that are readily perceivable by designers and users, based on factors such as their beliefs, cultural background, and past experiences. Norman proposes a distinction between physical and screen-based products. He suggests that affordances, both actual and perceived, play a more important role in physical products than they do in the world of screen-based products, for which, he says, "cultural conventions are much more important" (39).[5] In design, the user needs to understand, preferably as immediately as possible, what to do: where to click on, where to type, etc. However, while cultural conventions are important in human-computer interaction, it is also important to note that the contextualization of the digital object matters just as much as that of the user. The action possibility manifests itself between these two. Affordances, thus, help us in understanding the different directions and developments of digital artifacts in a more cohesive manner — one that takes into account technology and the social actors involved.

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[5] In 'Affordances and Design' (2004), Norman makes a distinction between perceived and actual affordances. Actual affordances are static properties inherent to the material of an interface, while perceived affordances are the actions that the user perceives that are possible. In graphical design, Norman states, we always speak of perceived affordances, since the hardware sets the actual affordances in place.

When we draw the concept of affordances to the metaphors of the homepages, it becomes clear that symbolizing the digital affords certain ways of interaction. Especially when it regards new, unfamiliar technology, both user and producer are in need of patterns of recognition, interpretation, and accessibility. Metaphors can function as social schemata that give structure to and organize human-computer interaction by using the familiar to explore the unfamiliar (Van den Boomen 2014; Hutchby 2001). That is not to say that the Internet or the World Wide Web are a tabulae rasae waiting to be filled in by designers and users and hold no intrinsic qualities. Rather, it means that metaphors *frame* the way we think, talk, and act upon this computer technology. Metaphors, thus, constitute affordances by mapping affordances from source domains.

In order to understand how metaphors hold affordances, I build upon Janet Murray's book *Inventing the Medium* (2012). Here, she considers the four main affordances that pertain to every type of digital medium: 1) the participatory affordance, with which she means that the user is able to manipulate, contribute to, and have an effect on digital content and computer processing, 2) the encyclopedic affordance, which treats the immense amount of information in digital media formats, 3) the procedural affordance, which covers digital media's potential to execute conditioned responses,[6] and last, 4) the spatial affordance, which refers to the ability of a digital medium to represent space using all the strategies of traditional media, such as maps, images and video. We have seen all these four affordances in the description of the homepages above: first, the homepage itself is a way in which the user is able to be part of the Web: they can publish and alter their content. The encyclopedic affordance is found in the bookmarks and index, which fashions the infinite amount of information on the Internet. Procedural affordances refer to the rules, that must be executed for, for example, a homepage to exist. The fourth, the spatial affordance, is detectable in the semiotics of the homepage, of which the sentence that I started this chapter with is a striking example: 'welcome to my *place*'. We can think of the Web as having an urban or architectural design.

The affordances theorized by Murray are substantialized by metaphors. These affordances of technology are inherent to the machine object, yet need a translation, or, as Lev Manovich calls it, *transcoding*. In his book *The Language of New Media* (2021), Manovich names transcoding "the most substantial consequence of media's computerization" (63), as an intrinsic quality to any new media object. Transcoding entails the reconceptualization that occurs during the transformation of media into computer media. Borrowing the term from information technology, in which it covers the "digital-to-digital" (Van den Boomen, 19) data translation from one format to another, transcoding concerns the dynamics between what Manovich calls the cultural layer and the computer layer (Manovich 63), where "cultural categories and concepts are substituted, on the level of meaning and/or the language, by new ones which derive from computer's ontology, epistemology, and pragmatics" (65). Manovich's perspective on transcoding thus treats the digital-to-cultures process. However, in analyzing the homepages we just scanned, we identified not only the translation from digital forms to cultural forms (changing notions of identity) but also cultural to digital (how to translate code into a cultural object?). For this reason, it is important to view transcoding as not just directed from digital to cultural, but also vice versa (Van den Boomen, 19).

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[6] Murray's procedural affordance is similar to Lev Manovich's principle of automation: that repeated tasks can be operated by the computer that are involved in media creation, manipulation and access. This is due to the numerical coding (the first principle) and the modularity.

Transcoding helps us understand how metaphors are integral to the materialization of the digital. In *Transcoding the Digital: How Metaphors Matter in New Media* (2014), media scholar and internet pioneer Marianne van den Boomen examines how new media technologies rely on metaphors to cloak and highlight the possibility of digital action. Employing the concept of transcoding, Van den Boomen explores how metaphors structure the relationship between user and technology and how we can construe the role of these metaphors relative to the dynamic network of human and nonhuman actors. She introduces the term "depresentation" (Ibid.) in the process of "icontologizing" (37). The iconicity and indexicality present in digital objects represent both metaphors and the concrete machinic processes (14). Examples of such digital objects are the mailbox, the trash bin, or the battery, but also the cursor, the map, and the verb 'browsing'. The processual and material complexity of the digital object makes way for the icon, word, or concept, "equating and substituting the sign with its immediate object of reference as displayed by the sign, thus nullifying its indexical reference to the (twofold) dynamical object of digital and human code" (40). Without it, interaction with the machine would be much harder. Following Van den Boomen, we need metaphors to reify the complexity of new technology. This is what computer icons do: in the name of accessibility they *translate* complex processes to a simple representation of an object (trash bin) or place (exit). What it does, is that it takes the user's attention away from the underlying codes that are the make-up language of the analogy. As such, it *depresents* the operations of the actual technology of the machine. Van den Boomen sees this concealment of software and hardware processes as a "necessary and deliberate act against representation" (256). The machinic processes are purposely made invisible while the iconicity is enacted (41). As a result, the iconic screen representations are taken literally, equating them to their immediate referent: a phone *really* is a phone, and a mailbox is truly a mailbox.

Consequently, it colonizes all other aspects of mediation. This is what Van den Boomen coins *icontology*. As metaphorization of the digital depresent the complex processes of the machine, it absorbs and obscures other components that are involved in performing the task. Icontologized signs have a serious impact on human-computer interaction because they hold certain affordances.

In understanding the affordable actions that are encoded in metaphors, Van den Boomen's development of Katherine Hayles' notion of the *material metaphor* proves helpful. With material metaphors, Hayles underlines the transfer between a word, symbol, or concept on the one hand, and a physical artifact on the other hand. The material metaphor emphasizes the act of transference, the traffic, instead of its after-effect (as is what happens usually with metaphors), without disregarding this effect entirely (Hayles, 2002; Van den Boomen, 2014). What is striking in the case of the material metaphor, is that it "can actually *do* things in the world" (Hayles 2002, 22, emphasis mine). What Hayles means, is that material metaphors are not only capable of affecting what we do with it, but also how we think about the organizational structure of digital networks. How the homepage's material metaphors of both a house and a page do this, will be elaborated upon below.

The home*page*

First, I will discuss the latter part of the term homepage: 'page'. Like much internet rhetoric, the lexicon of digital cultural interfaces is largely made up of elements of other, already familiar media forms. In the description of the homepages by bugsb and kovi, we have seen how these webpages

build upon concepts from previous media, exemplified by the use of words such as 'page' and 'guide'. Such notions are metaphors that come from the domain of paper and print. What is so important about the home*page* is that it holds concrete action encoded into its metaphorical connotations: it is a material metaphor. The material metaphor of the page enables writing, drawing, turning, cutting, and browsing. This is not just because page-like qualities are attributed to these actions, but rather because such metaphors entail decisive action. The page metaphor in home/page affords certain actions and operations, but also a way of interpreting the Web, namely as something with paper-like qualities. Consequently, the page metaphor structures our interaction with it.

What I wish to stress here, is that a page, initially, is empty. It is important to note that I do not side with Belk and Llamas's statement that "[t]here were no templates, no norms and no rules" (2014, 76) in regard to creating homepages. Their idealist stance undermines the role of the computer-as-actor in human-computer interaction and thus neglects the page as a material metaphor. It implies that the computer, its applications, and its software are blank spaces that do not provide anything in return. Even if we were to compare an HTML document to an empty paper sheet (a page), we need to be aware that this paper sheet has certain qualities. Nevertheless, the initial emptiness of the page invites *participation*. It affords human action and manipulation (Murray, 433). Simply put, it asks to do something with it.

However, the material metaphor of the page does invite a participatory mode that is centered around paper-based media. It alludes to certain formats, such as diaries, novels, calendars, guides, newspapers, and encyclopedias. Based on these earlier media, the metaphor frames what to do with it and affixes — or rather, icontologizes — the homepage as a space that should be filled in with text and images, which can be 'cut' (as we do with scissors), 'copied' (printers) and 'written' (pencils). As the website is designed in this way, the procedural affordances of technology are limited to this utilization; meaning that the metaphor overshadows the computer's capacity. Furthermore, the page metaphor derives our attention away from one of the most media-specific qualities of the Internet: its non-linearity. While not considering webpages, Katherine Hayles' example of the book as a material metaphor is indicative of the icontological perils of the page metaphor:

> In addition to defining the page as a unit of reading, and binding pages sequentially to indicate an order of reading, are less obvious conventions such [as] the opacity of paper, a physical property that defines the page as having two sides whose relationship is linear and sequential rather than interpenetrating and simultaneous. (22-23)

Hayles highlights 'the binding pages', their sequentiality, and order. This is also what happens with homepages: the language and icons suggest linearity and structure. We detect this in the guides and indexes on homepages (complete linearity), but also in the 'webring', which we saw on bugsb's homepage (linear in function). On bugsb's homepage, the page metaphor was represented by 'next page' and 'skip it', conceptualizing the webpage as a book that one could *browse* (notice here how

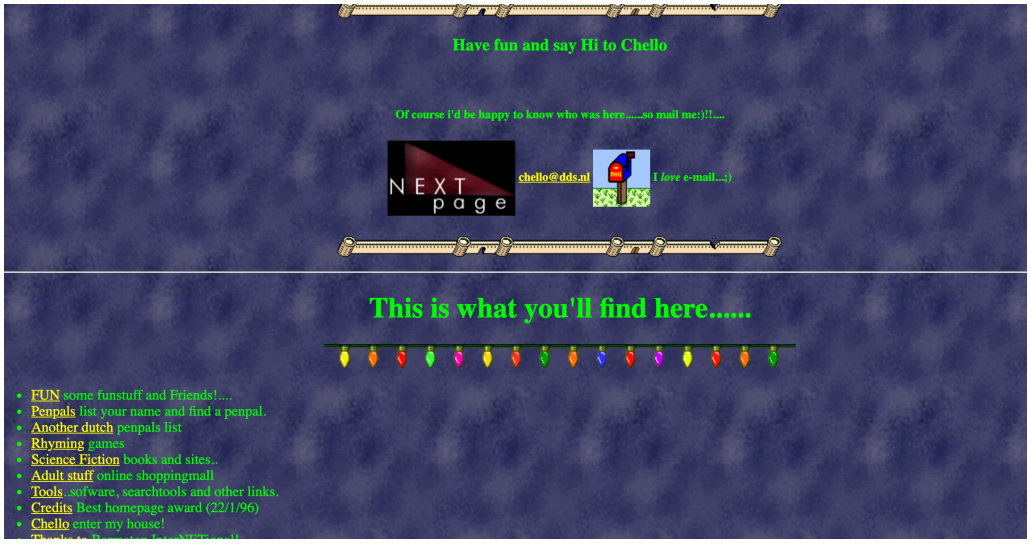

Figure 3: chello's homepage

the page metaphor enabled a certain articulation). On the homepage of DDS inhabitant 'chello',[7] which we see in the two images above, this act is illustrated by a GIF that shows a book with a page turning (image 3) and an image showing 'next page' (image 4).

Yet, the Internet and its underlying structure are non-linear and decentralized, resembling a 'rhizome' (Deleuze and Guattari, 1980)[8] rather than a hierarchical structure. This structuring of data exemplifies the procedural affordance described by Murray: it shows the computer's ability to "represent and execute conditional behaviors" (51), thus providing the illusion the user is in control (434). As early as 1994, communication scholar Marjorie Warmkessel observed that linear metaphors are "perhaps relatively easy to understand, [but are] also misleading" (3). For the sake of accessibility, the metaphor of the page obfuscates, thus depresents, the complex machine processes, representing a stable entity instead. As a consequence, (home)page collapses into the sign itself.

So, the metaphor of the latter part of the term 'homepage', where print-based media take a central position, invites ways of interaction. This metaphor generates its own affordances and constraints. Paper has strong connotations with craftiness. While we are bound to the capacities of paper, the metaphor of the page does open up a creative space, as we have seen on the homepages of bugsb, kovi, and chello. This creative, do-it-yourself space is chief in the metaphor *home* in homepage.

The *home*page

In the Digital City, the novice 'citizen' would get the service of a homepage which, from its very start, was called a house. The metaphor of the house stresses the first part of the term homepage: home. However, a house does not necessarily make a home, and a home is not by definition a house. For this reason, I first discuss the house as a material metaphor. In the second part, the process of

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[7] https://web.archive.org/web/19981202112735/http://huizen.dds.nl/~chello/

[8] In *A Thousand Plateaus,* Gilles Deleuze and Felix Guattari introduce the concept of the rhizome in indicating a system that has no sense of hierarchy, lacking organization and has no central hub. This concept has been applied to the Internet in order to take into account its complex multiplicity.

making this digital house a home stands central. I will argue that this adds another dimension to Van den Boomen's concept of icontology.

Unlike a home, a house is a physical architectural structure, built for inhabitation. Above all, a house is a *space*. It has one or multiple rooms and we can move through this space. Spatial metaphors for data and computer networks were, and still are, very common, which is reflected by terms such as 'cyberspace', 'information superhighway', 'sites', 'navigating', and 'enter'. Through the Digital City's framing of the homepage as a house, this spatiality was emphasized in the very specific context that it functioned as a place where one could live.

It is this spatiality that Janet Murray considers one of the four defining representational affordances of the digital medium. She states that,

> [d]igital environments can represent space using all the strategies of traditional media, such as maps, images, video tracking, and three-dimensional models. Unlike older media, however, and similarly to the experiential world and the designed spaces of landscapers, urban planners, and architects, digital media artifacts can be navigated. […] Navigable space is created by clearly distinguishing one place from another and creating consistent interaction patterns that support movement between spaces. (2001, 439)

The questions Murray attempts to answer with the spatial affordance is, where am I and how do I know where I am? One place on the Web needs to be clearly distinguished from another in order for the digital space to be navigable. The house metaphor in the Digital City mirrors this spatial affordance, and the language and iconography on the homepages illustrate how this metaphor greatly influenced the interaction patterns of the platform. 'Bonaparte' calls his homepage a 'huisje' (little house), which even has a 'library'. On bugsb's homepage, we are greeted with 'welcome to my place'. We are also welcomed, 'here', to 'say Hello' at chello's site. Additionally, some decorations in the form of colorful lights are strung at their site, and on all sites, we are invited to have a chat. Metaphorical signs such as 'visitor', '*guest*book', and 'under construction', but also imperatives such as 'look *here*' and 'take a look around' are oftentimes used. On 'gerrelt's[9] homepage, the house metaphor is taken literally: they built a thorough digital house with an entrance, a bedroom, and a study included. Such metaphors based on architecture and building interiors create usability through recognizability and give structure to the digital text.

The house, thus, functions as what Van den Boomen calls a 'sign-tool', which she describes as "not something to be read and interpreted by a cognitive human being, but a thing in the hands of a tool-using human being, a thing by which things can be done, things not yet present, things partly unknown or never seen before, but somehow prefigured – in short, virtual things" (41). These sign-tools make human-computer interaction easier, yet the very same danger of the icontologizing metaphor of the page exists on the homepage as a house: the material metaphor of the house both absorbs and conceals the indexical relations to the technological processes, "explain[ing] human code, but not the machine code" (260). The homepage is not a real house, it is a hypertext document on the World Wide Web that can only be displayed (or altered) by means of a browser.

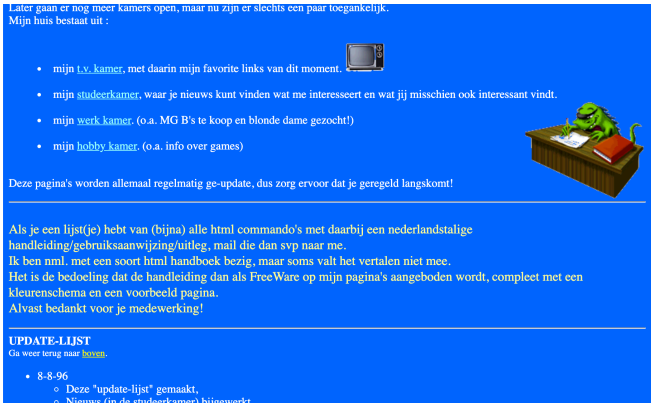
While the house depresents the software and hardware processes that are necessary for the functioning of the homepage, it enables procedural affordances of ownership (this is *my* house) and, consequently, a community (a house in a neighborhood). We see this reflected on the home pages of

Figures 4 and 5: gerrelt's and bonaparte's personal homepages

gerrelt and bonaparte. "When you're done (or sick of) my pages then visit one of my friends", gerrelt suggests on his page. Furthermore, they say, "So, this is *my* homepage", and on both homepages the users refer to links to houses of other DDS inhabitants, amplifying the communal aspects of the Digital City and their house situated in it. These owners show pride in their houses and those of other users. Having put work into the construction of their homepages, the activity of building their house has contributed to a sense of ownership.

With the process of building a house in the virtual realm, the house as a sign-tool helps in making the virtual space comprehensible. Consequently, the house metaphor constitutes another affordance as well, one that adds another dimension to Van den Boomen's concept of icontology: while the house as a metaphor *initially* camouflages the digital processes it truly is, it *enables* users to delve into code through what I coin digital homemaking. Here, the 'home' element in home/page is substantialized. I pose the question, what makes a house a home?

Home, in many accounts, is neither strictly a place nor a feeling, but comes about through the interactions between these two (Blunt and Dowling 611; Waitt and Gorman-Murray). The phrase 'feeling at home' is not necessarily contained within the locality of a place of residence, but rather expresses a sense of belonging. More than anything else, it 'feels' right because it 'feels' like home. Home also comprises a process: it involves history, memories, and experience for it to feel right. We can call this process homemaking, which requires interactions with social and material objects, and this creates social meaning, turning a dwelling into a home (Clapham, 2011; Baker, 2013; Gorman-Murray, 2008). Architectural historian Joseph Rykwert observes that "[u]nlike even the most elaborate animal construction, human building involves decision and choice, always and inevitably; it therefore involves a project" (1991, 56). Following Rykwert, a sense of meaning and identity is given to a place through the activity of the project, which I connect to the process of creating a homepage.



Figures 6 and 7: on his homepage, 'freddy-a's[10] admits he is still working on his 'virtual house' and asks visitors to e-mail him with ideas.

In allowing users to create their own digital home, which they could fill in with their own personal 'belongings', DDS gave users the opportunity to experiment with the multimodality of the Web. When constructing their homepages, the users tease meaning out of everyday experience and translate these interpretations into symbolic objects that they can share with a virtual audience. Digital homemaking, then, is the process of learning the digital know-how to be able to be a producer in the technological environment of cyberspace. This process allowed new users to also understand the technological language behind the 'house'.

First, in order to build a nice 'home' for themselves, the inhabitants needed to learn — at least basic — HTML, making the website builder aware of the underlying processes of the Web. DDS, XS4ALL, and the English server provider Demon contributed several courses on the language so that even the greatest 'dummies' could create their own webpage.[11] By learning and applying HTML, the user was made aware of the technology behind the homepage: this was not just a house, this was a digital artifact that held indexical relations to a larger machinic network. As the metaphor of the house becomes a home, the icontologized icon is deconstructed: the user is exposed to the procedures the metaphor of the house establishes.

Secondly, the 'collection' of the different elements of the homepage plays a crucial role in the act of homemaking. The inhabitant had to do a thorough 'surf' on the Web to find elements for their homepage. Writing on homepages and identity formation, Daniel Chandler and Dilwyn Roberts-Young (1998) state that "[h]omepages are 'assembled' rather than simply 'written'" (n.p.). They employ Lévi-Strauss' concept of *bricolage* to grasp the ongoing activity of creating a homepage:

> In the creation of personal homepages, graphics, sounds, text, and the code used to generate a particular format are often copied from other people's pages […]The adoption of existing materials is much easier in virtual reality than in material reality, since virtual *bricolage* allows appropriation without either purchase or theft. (n.p.)

Lévi-Strauss designated the notion of bricolage in 1962 to describe individuals who engage in whatever resources are 'at hand' to perform a task (17). Minding that Lévi-Strauss came from the field of anthropology, bricolage is the activity of selecting material from previous cultural formations and re-using them in new combinations. More than anything, bricolage, which translates from

[10] https://web.archive.org/web/20010609081623/http://huizen.dds.nl/~freddy-a/

[11] https://web.archive.org/web/19980207095741/http://www.homepagehelp.demon.nl/constructing.htm

French as "do-it-yourself" (DIY), involves a project (27). Lévi-Strauss linked the project to the formation of self-identity and material culture, saying that "the bricoleur may not ever complete his purpose but he always puts something of himself into it" (21). The omnipresence of the phrase 'under (continuous) reconstruction' and the self-referential admissions that the home is still in the making demonstrate that while the project may never be finished, it is the activity of building in which users could express their identity.

Accordingly, bricolage covers the creative and playful activity of employing multiple media in the articulation of the self. To fashion a personal homepage as they wished, the user needed to take a look at other pages on the Web as well. Naturally, some users were affiliated with computers and computer languages that needed less digital exploring, but for those who were in the process of learning and understanding, the results of this venture into the virtual were extremely fruitful. Through the metaphorical notion of homemaking, however literal that may be conceived by the user, website building becomes a method to grasp the Internet as hypermedia through self-exploration.

Much like personal belongings, interiors, and souvenirs show off our accomplishments and tell the story of our lives, the assembled homepage brings together a collection of text, graphics, photographs, and links to create a distinctive online presence. Identity is reflected in how these different media elements are similar or different from other homepages: their "inclusions, allusions, omissions, adaptations and arrangements" (Chandler and Roberts-Young 1998, n.p.). Take for example the homepage of freddy-a, pictured here above. He has copied formats, images, and GIFs from other pages, yet the way he organized his 'house' and the prevalent investment he put into it (even asking whether there are Dutch HTML manuals) reflects his interests and concerns. In his 't.v. kamer' (TV room) he bookmarked his favorite websites, GIFs of logos included and his 'hobby kamer' (Hobby room) shows several lengthy reviews of his favorite games, which are accompanied by images and GIFs of games' developers. Nowadays, we can easily find digital media objects with a quick Google search, but the search engines in the '90s operated far less optimal (Fleiss 2007, 3). By contrast, DDS users had to take inspiration and copy from social bookmarking websites or other homepages to get hold of GIFs, images, and fonts. When someone was interested in a specific kind of game, as is the case with freddy-a, it was necessary for him to look at websites and homepages that covered the same interest. Consequently, the user is made aware of the Internet as a network that goes far beyond the borders of one's home(page). Collecting virtual artifacts became a process of identity reflection (what do I want to show) and digital discovery (how can I find what I want to show?)

In conclusion, digital homemaking has the potential to make the user feel at home on the World Wide Web through the mental and virtual space it allows for creative freedom and identity reflection. While in the first instance the house as a metaphor purposely makes the digital operation invisible, homemaking demands the user to reflect on the underlying processes of the Web (through coding) and to endeavor the Web as a digital bricoleur.

Concluding words

In this chapter, the metaphorical representation of data on the homepages of the Digital City was investigated. The Digital City, already a metaphor in itself, provided an accessible way of navigating through cyberspace by representing homepages as 'houses'. We have seen how both home (house)

and page function as material metaphors: they reform the process of signification through their concealment of the indexical relations with their machinic processes. These material metaphors enabled affordances and constraints, mediating the interactivity between and homepage. Like much computer lingo, the *page* metaphor stems from the domain of print and paper. While it is not distinctive for the Digital City as a platform, the page metaphor has illustrated how the icontologizing of digital processes has socio-cultural implications in regard to human-computer interaction: in how the metaphor of the page has obfuscated the computational complexity behind it, and in how the metaphor of the digital page has adapted the signified 'page' itself. The (web)page has, as Van den Boomen says, "collapsed into a single sign" (27).

It is the material metaphor of the *house* that has set in motion a process of delving deeper into the technology behind the sign. The 'house' enables spatial and procedural affordances, shaping how we conceptualize digital information. Nevertheless, we speak of homepage rather than housepage, and it is in the process of making a house a home that opens up the icontological gap between the technical procedure and the cultural phenomenon of 'homemaking'. In the process of digital homemaking, the homepage builder (or rather, bricoleur) 1) needs to have (some) knowledge of HTML to make a home, and 2) is made aware of the hypermediality of the Internet through the navigation on the Web in a dynamic play of identity reflection and 'scavenging'.

So, Van den Boomen's elaboration on the perils of icontology in *Transcoding the Digital* does account for both parts of the home/page metaphor. I do find that the specific metaphor of the house in the Digital City has its affordances that fortify the urgency to really treat the homepage as a house. Not just because it is the name, but for the reason that all the different elements of the Digital City, working together as a whole, emphasize the domesticity of the virtual space of the homepage. Let us not forget that the 'homepage houses' were situated in building blocks and could be located anywhere in the city; that these could be 'colored' by graffiti-like comments and, from the 'outside' it was possible to open a 'front door'. The possibility to 'kraak' (squat) a house even existed — a phenomenon that will further be dived into in Chapter 3.[12] There was a metaphorical structure present in the Digital City, fueling the immersive and participatory experience of being part of a larger community. The interplay between the platform and its users instigated a cyber culture that only grew and grew.

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Chapter 2: Subverting the City

> *"No one is obligated to adhere to the city metaphor."*
> — Michaël van Eeden, initiator of the Digital City and programmer of the Digital Metro

I had to come from my home and study town Leiden to visit the Digital City, or at least, a mimetic reconstruction of it. After some hassle with the bus stops, a relatively short train ride, and a wild attempt to figure out Amsterdam's complex public transport network, our train slid into Amsterdam Central Station. Sometime later, as I was walking along the streets on my way to the depot of the Amsterdam Museum to research the case study of this thesis, something ironic happened: I had to be there at 10:15 in the morning and, not wanting to be late, I had carefully mapped out my route toward to the depot. If everything had worked out as planned, I would have been there at 10:06. Alas, that was not the case. While I initially was — would be — right on time, a couple of hundred meters before my arrival I discovered that the bridge separating me from the museum was under construction. I turned to my partner, who was with me, and stated, "Why couldn't this be a hyperlink? Then I could just click and be there right away!".

Of course, having lived there for some time, I am familiar with Amsterdam. I have been part of some of its communities, have been registered as an Amsterdam citizen, and even have had the honor to co-decide on its social landscape. As such, I have been an observer of its recent evolvements. Even more so, I know the streets, the districts, and the landmarks that color this city culturally bright. As my partner and I had to circumnavigate, I knew where to go and how to overcome the great obstacle that was the bridge under construction. Yet, I wonder, if I did not have this background, and these streets would not have been recognizable to me, would I have had this very same thought? Would I have wished to, seemingly magically, appear there where I wanted to be solely in the service of strict time management and hurried ambition? As for my visit, the city itself was not a main priority. Rather, it was the activity of visiting the depot that brought me to Amsterdam. But what if I was at the point of still getting to know the city?

For the tourists, inhabitants, and constructors, the Digital City — and the World Wide Web in general — was unfamiliar territory. Aside from the virtual city itself, the behaviors, the modus operandi, and the capacities of online venturing were unknown as well. We have to keep in mind that the spatial metaphors that were used to speak about the Internet are still relatively new. Roughly thirty years ago, such vocabulary was still in the process of coming into being. By employing spatial metaphors, such as cities, rooms, and frontier, ways of conceptualizing the Internet were developed. The Digital City was one of the first — if not the first — initiatives in the Netherlands to attempt to get people on the World Wide Web. By employing metaphors, individuals are permitted to understand abstract concepts and phenomena with which they have limited experience. By comparing it with well-known and concrete concepts such as places and objects, interaction is facilitated.

The name, interface, and design of the Digital City suggest that it operates as a city does. By doing so, the Internet becomes a space of locality and spatiality. The metaphor of the city affords certain patterns of behavior and communication that are the result of this topography. That is to say, if the web space is structured like a city, the users will treat it as such (Wilhelm 2000), and, whether they are an online citizen or a tourist, people are expected to interact in a certain way with

the virtual environment presented on their screen. Importantly, cities have an individual economic, social, organizational, and political infrastructure, which has stemmed out of historical practices, may those be global, national, or local. Cities emerge from tradition and social practice (Lynch 1960). While the Digital City lacked a rich cultural history, it did build upon existing notions of 'a' city through its design. Yet, as my anecdote has illustrated, a digital city does not function according to the rules of cities situated in our physical reality.

The goal of this chapter is to examine the consequences of designing the virtual space as a city and to uncover how this metaphor determines the way users interact with this space. As we have seen in Chapter 1, digital metaphors help users in giving structure to human-computer interaction by using what is familiar to us, while simultaneously depresenting the computer processes that lie

Figure 8: variations of the DDS avatar

behind the metaphor (Van den Boomen 2014). They also frame the ways in which we perceive, talk about and act upon computers. The spatial metaphor of the city is no different: because it is linked to earlier experiences, assumptions and notions of 'a' city, the metaphorical application of the term evokes certain ways of interaction that reflect this conception of the urban environment. In this chapter, I seek to understand what the affordances of structuring an online space as a city are. Here, I will focus on two specific sub-questions, namely:

1) How do the medium-specific qualities of the World Wide Web shape the affordances of the city metaphor?
2) How does the environment of the Digital City invite engagement through its design?

In my attempt to provide an answer to these questions, I draw on two concepts that form the building blocks of this chapter: *drifting* and *hypertext.* Here, I investigate the act of wandering through the city through the theories of the Situationist International, a radical art and political group of the 1950s and 1960s based in Western Europe, who developed a theory of 'psychogeography' as a means of exploring the city. I also examine how this wandering, or drifting, happens in the virtual realm of the Digital City, and how the hyperlink fulfills a role in this.

Figure 9: DDS1

Figure 10: DDS2

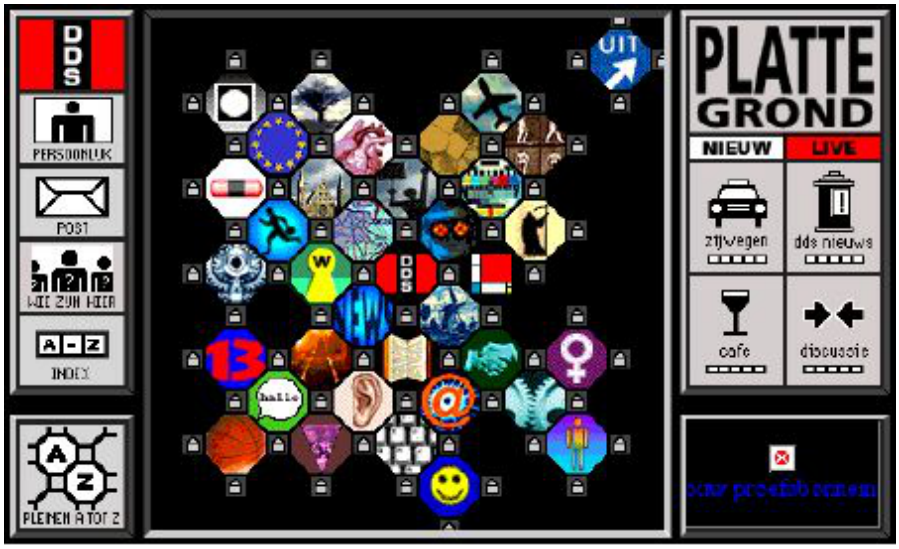

Figure 11: DDS3

Press Enter to Enter the City

It is spring 1994. You are sitting behind your computer, have made sure that your modem is connected to the device, and open the Freeport software application. Then you dial in: 020-6225222. Several moments later you find yourself in the black-and-white text-based environment that is illustrated below (see Figure 1). Neatly categorized from one to fourteen, locations such as the post office ('het postkantoor'), the city hall ('het stadhuis') and the Central Station ('het Centraal Station') are listed and can be accessed by typing in the number in front of them. This interface, inspired by the so-called 'Free-Nets' in Northern America, was built with the Bulletin Board System Technology that was popular in the 80s: a shared system that functioned much the same as the physical bulletin boards one might see in a public space. If you were to click on one of the locations, whether that is the kiosk or the university, you would once again land up in another text-based setting. This first design of the Digital City, lacking any graphical components, shows little similarities with the colorful, moving homepages we have seen in Chapter 1, yet the metaphor of the city is reflected in the organization of the interface. Nevertheless, can we *live* this text-based version of the Digital City?

The second design was introduced exactly nine months after its launch. From 15 October 1994 on, the Digital City could be entered through the World Wide Web. With this technological innovation, the Digital City became a website, enriched with graphics and, most importantly, hyperlinks. The user no longer needs a keyboard to go from one 'space' to another and is a mouse click away from visiting the houses, dropping by the store, or going to the pub, all of which have been added to the cityscape. The black background has been replaced with a vivid red and black image that shows a bird-eye view of rows of houses. Unfortunately, the introduction of this web-based interface also meant a step backward in regard to communication facilities: as a user would enter a place, they would leave the newly introduced web interface and start a Telnet session, meaning that they would be sent to the less user-friendly textual environment of DDS1.

This second version, consequently, would not last long: after several weeks the third version was launched. This version was, in the words of Albert, Went, and Jansma, "a truly interactive system, embodying the metaphor of a city" (2017: 149). Figure 11 shows the map of the last version of the Digital City. Here, the city consists of squares with cultural, civic, technological, and political themes. These squares are the location for both commercial information suppliers and non-profit organizations (Besselaar and Beckers 1999: 111). On the squares, companies and organizations could rent virtual 'offices', where they could sell products and services.

In this third and final version, registered users were represented by an avatar, also called a 'DoDo', which would be created by the avatar generator (152). This avatar was inspired by 'Beaker' from The Muppet Show, and each avatar would be a variation of its original appearance. However, the user could make alterations and customize their avatar as they wished, allowing them to reflect — or decidedly contradict — their personality in the virtual environment of the Digital City. As they would walk around, the user's avatar would be visible to other online users and give the opportunity for interaction. Facilities such as 'cafes' and the 'city square' further enriched the city experience. Citizens, thus registered users, could look into their mail at the 'post office', chat with other online users at a cafe and reach their 'house' by traveling across squares and through districts, which ultimately are just hyperlinks directing to each other. As such, a user could enter the Digital City and intuitively navigate the city.

As I will argue, the combination of being able to 'wander' through the city, made possible by hyperlinks that connect one digital space to another, and seeing oneself represented on the screen by an avatar provides a sense of involvement, or being there, that the first Telnet environment of DDS1 could not. Thus, the metaphor of the city is given substance through the addition of the many digital spaces to visit and interact with, but also how this interaction is made possible allows for more engagement.

The Hyperlink as Path

The moment a user 'enters' the Digital City, they are expected to move — or to click on an element so as to go to another space/page. Let us look at Figure 3 once again. the colorful squares, graphics of vehicles, and the cafe represented by a (full) wine glass: with a promise that there is something to be found behind these icons, they all invite the user to click on them. But where to click on? The user could go to one of the thematic squares, or they could check out the homepages of other users. Or they could visit the main cafe, and chat with other online people. From the homepage on, there are many possible itineraries a user might follow in the Digital City.

In *Cyberspaces of Everyday Life* (2006), Mark Nunes views the internet as a global space consisting of a network of linkages, with each link, webpage, or unit of information attempting to establish a sense of place. Nunes considers hypermedia as a relational space that is enacted and actualized by browsing as a lived practice (50). While the dominant form of the Web is produced by representations of space, such as hypermedia and their material form, browsing is the lived practice that articulates an event-like relational space. Nunes argues that the practice of interaction in a network operating at a global and individual level simultaneously is crucial for lived practice in hyperspace. At the global level, Nunes describes interaction as the "making links from text to text or site to site, the user literally maps, by way of lived practice, a cluster of material and conceptual connections" (51). At the individual level, each webpage not only functions as a node to the next, but overall as an enacted environment, enabling personalization and control from a situated perspective (76).

The hyperlink, thus, plays a vital role in traversing the digital landscape of the online city. It is essential to bear in mind that the urban metaphor was utilized in the Digital City to enable new users to comprehend and acclimatize themselves to the virtual realm. Nunes' assertion that browsing represents a form of customization takes on heightened significance when contextualized within the framework of a metaphorical city. The city affords to discover, to participate, and to wander, all of which are facilitated by hypermedia. As web designer and author Vincent Flanders notes in his book *Web Pages That Suck* (2002), the use of hyperlinks in this way can create a sense of excitement and engagement for users. He states,

> Hyperlinks are what the Web is all about. They are the magic that turns an electronic document into an interactive experience, and without them, the Web is just a bunch of electronic files sitting on a server somewhere. In short, hyperlinks are what make the Web the most powerful and exciting medium ever invented. (33)

Note how Flanders describes the hyperlink with words such as 'magic', 'exciting' and 'experience'. The phenomenon of the hyperlink is what makes a website come to life, as the user is invited to roam the different pages. In the same sense, the Digital City is composed of many virtual spaces and

interconnected hyperlinks. Users can wander, get lost, and discover the place as they would in a physical city.

These hyperlinks also bind the webpages of the Digital City together into one space. Like a physical city, the Digital City was a complex and dynamic environment with a variety of different 'neighborhoods' and 'districts' that users could explore. By moving through these different areas, users could encounter a diverse range of people and ideas, creating new connections and experiences in the process. Through the use of hyperlinks, users could, in the words of Flanders, *experience* the Digital City.

Exploring and experiencing in the Digital City happens, through hyperlinks, because they function as paths. They allow the user to go from one page/space to another, offer shortcuts, and occasionally lead to dead ends. Paths-as-hyperlinks provide a temporal dimension to the website. Because the user is not bound to one static page, they can browse the digital environment for hours, getting stuck in loops or losing themselves in the darkest corners of the website, yet it can also last shorter, for example when a user is simply not interested any longer. Additionally, hypertext can be ever-changing: the website a user visited a few moments ago, can hold more, or less, information than it had before.

This makes the hyperlink temporal in an ambiguous way because while the experience of browsing may last longer or shorter, the navigation of the cityscape is vastly different than from what it would be in a physical urban setting. This is because, in the realm of digital spaces, paths exhibit a distinct characteristic that distinguishes them from their physical counterparts: the ability to transcend the limitations of time. Unlike physical paths that are bound by the constraints of duration, digital paths enable users to overcome temporal boundaries and navigate through interconnected spaces instantaneously. The venturing into the Digital City thus depends more on the user than it does on the virtual environment. In a physical city, a person is dependent on paths and (public) transport, while the website of the Digital City offers innovative ways for exploration.

As illustrated in the introduction of this chapter, I was prevented from going to the Amsterdam Museum because I could not overcome the physical boundary of a bridge. If I had been a visitor of the Digital City, I would have simply clicked on the icon that would lead me there, and several moments later, I would have 'arrived' at my location. While my body wouldn't have moved an inch, the museum site would have presented itself to me. This is also how, aside from the temporal differences between the digital and physical exploration of a city, spatiality is transfigured in the experience of the city as well. In physical cities, spatiality is closely tied to physical movement and the constraints of the built environment. Paths are linear: the ability to navigate and explore physical spaces is limited by barriers, such as roads, bridges, and buildings, which can hinder movement.

On the other hand, in the Digital City, spatiality is not bound by physical barriers or limitations. The digital environment allows for instant access and navigation through virtual spaces. By clicking on an icon representing the Amsterdam Museum, I would have virtually 'arrived' at the location without the need for physical movement.

So, the metaphorical use of a cityscape in the Digital City facilitates users' comprehension and adaptation to the virtual realm, in which hyperlinks serve as conduits for exploration and discovery. Yet the manner in which the user navigates themselves through the urban environment is vastly different from the experience they would have in a physical city. The Digital City liberates

spatiality from physical barriers. The digital environment enables instantaneous access and navigation through the different districts and squares. By simply clicking on an icon representing a particular location, users can virtually 'arrive' at their destination without the need for physical displacement or linearity.

Drifting in the City

Aside from going to basic functions, such as the post office or the city hall, users could discover the various squares of the City, each of which focused on a certain topic: Women's Square, Culture Square, Movie Square, Government Square, TV and Radio Square, Technology Square, and so on.[13] They could chat with like-minded users, interact with the virtual objects around them, and observe their digital environment. While the metaphor of the city in cyberspace, set by the makers of the Digital City, helps the users in orienting themselves in the city, it also allows space for creativity, roaming, and subversion.

This novice way of experiencing and getting to know the city shows many similarities with the concept of the *dérive,* or 'drift', a concept developed by the Situationist International (SI). The Situationist International was a revolutionary European artistic and political movement formed in 1957. The group was known for its radical ideas about urban space, particularly its critiques of modern urban planning and architecture. Drawing upon the theoretical foundations of Karl Marx and Henri Lefebvre, the Situationist movement endeavored to employ a social critique of the conditions of society during the post-World War II era, primarily within France. The Situationists believed that modern society had become too controlled and predictable and that the built environment played a significant role in this (Sadler 1999, 12). They sought to disrupt and subvert the dominant logic of urban planning and to create new, more dynamic and spontaneous forms of urban life.

The idea of the *dérive*, which translates to 'drift' or 'drifting' (Bridger 2013: 3), is a "technique of rapid passage through varied ambiances" (Debord 1958) and is defined by philosopher Guy Debord, one of the key theorists of the Situationist movement, as entailing "playful constructive behavior […] which completely distinguished it from the classical notions of the journey and the stroll" (n.p.). Ultimately, the dérive was a method of exploring the city, in which individuals would wander aimlessly through urban spaces, letting themselves be guided by their instincts and desires rather than by predetermined paths or plans. By doing so, they hoped to uncover hidden aspects of the city and to experience it in a more authentic and unmediated way. The dérive, or the drift, is an aimless wandering in the city, which takes place according to specific systems (Hartman 2003: n.p.). The goal of the dérive is to subvert pre-given perception and movement and, with that, a transformation of everyday life. In doing so, the Situationists aimed to inspire individuals to create their own culture as a means to counteract prevailing societal norms and trends.

Psychogeography, a situationist neologism, is the 'theory' behind the dérive. It is a way of exploring and experiencing urban environments, focusing on the subjective and emotional responses individuals have to their surroundings. Psychogeography seeks to understand how the physical environment and architecture influence human behavior, thoughts, and emotions. It emphasizes the

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[13] See Peter van den Besselaar and Dennis Beckers' article "Demographics and Sociographics of the Digital City" (1999) for a thorough overview of the different squares of the Digital City.

idea that the design of cities and the arrangement of urban spaces have a profound impact on individuals' well-being and social interactions (Hartmann 2003).

I find the theory of psychogeography so befitting for the Digital City not only because the phenomenon is inherently urban in location and character (Elias 2010: 882), but primarily because of its subversive nature. We must understand that the Digital City grew against the backdrop of widespread political discontent in the Netherlands, and predominantly leftist Amsterdam, from which DDS originated. The politicians were frustrated by the lack of communication, resulting in decreasing credibility from their electorate (Riemens and Lovink 2002, 335). The Digital City was funded by them to provide a solution to this by stimulating political discourse in Amsterdam and making the relatively new internet technology accessible to a wider audience (Rommes, Van Oost and Oudshoorn 1999, 476).

The parties designing and developing the project, however, had different motives for building this online city. Geert Lovink sums this up by saying that "[t]he Digital City had other ambitions, political ones. It was important to get normal citizens involved in shaping the medium which until then had only been used by academics and hackers" (2009: 77). The creation of the Digital City emerged from the deep-seated passion of activists and artists alike who dedicated years to establish autonomous platforms (Wasielewski 2021: 225). Collectively, they wished to develop a platform that aimed to empower citizens, allowing them to shape their own ideas and communities (226). Furthermore, the Digital City was facilitated by Hack-tic, a group of anarchist hackers who were vocal in their advocating for the principles of freedom of expression, privacy, and open communication within cyberspace. The Digital City thus was based on principles of openness, freedom, and fairness, all of which were extremely important for these developers. Consequently, the governance structure of the city was designed to be inclusive and participatory, allowing users to have a say in the decision-making process. This approach challenged top-down hierarchical models of governance and promoted grassroots participation, potentially subverting traditional power dynamics. By creating a space that challenged traditional hierarchical power structures and encouraged citizen involvement in political processes, the Digital City was arguably inherently subversive.

In Situationist theory, citizens should not be mere inhabitants or tourists, but rather playful, critical participants who actively contribute to the dynamic process of social construction and deconstruction within a shared environment (Richardson 2003: 77). In contrast to Baudrillard's *flaneur*, who is primarily concerned with personal observation, reflection, and aesthetic appreciation, the purpose of the drifter is to explore the city by letting themselves be drawn by their instincts and will allow themselves free movement (Pichlmair 2008, 250). In the context of the Digital City, users would navigate through virtual spaces and digital environments rather than physically walking through the streets. The dérive concept aligns more closely with the idea of aimless exploration within the digital realm, where users can 'drift' through different online spaces. As a user of the Digital City, they were invited to go from one page/place to another so as to explore and engage with the rich environment that the city offered, which thus becomes a site for critical contact.

The interactive nature of the interface allowed users to explore the Digital City freely, much like the dérive encourages wandering and exploration in physical urban spaces. Users could click on hyperlinks, navigate through different sections, and encounter new content, fostering a sense of serendipity and discovery. Various interactive services were offered that users could access and

utilize. For example, there were online games, virtual tours, educational resources, and collaborative projects that users could engage in (Rustema 2001). Furthermore, the interface of the Digital City provided communication tools that enabled users to interact with each other, such as discussion forums or messaging systems. On the thematic squares, for example, they could connect with other users through the chat tools in the web cafés.[14] Upon stumbling on one of these cafés, the user could choose to have a chat with online users or to go on to visit the next page.

These elements correlate to the dérive's emphasis on embracing chance encounters and uncovering hidden aspects of the urban environment. An additional point of reference for the dérive is the concept of the 'possible rendezvous' as the foundation of the dérive (Debord: 67). During the dérive, one may encounter another individual with whom one might choose to talk. The dérive is aimed at studying a terrain on the one hand, and emotional disorientation on the other. To properly start the dérive, conversations are sometimes begun with a passer-by, and an engagement with the environment is produced. As contact was established, new ideas could arise and communities could be formed. The dérive is, as such, tactical.

Because the dérive is not intended as a practical method for establishing fixed patterns of behavior, but rather functions as a tactical device aimed at subverting established routines. As articulated by Michel De Certeau (1984), there exists a distinct differentiation between tactics and strategies. "Strategies are formulated and sustained when a subject with will and power […] can be isolated" (36). In contrast, a tactic represents a maneuver undertaken against a strategic position and is characterized by "a calculated action determined by the absence of a proper locus" (37). So, while strategies are typically driven by an established agenda and seek to achieve predetermined objectives, a tactic is a more spontaneous and adaptive maneuver employed by individuals or groups who lack formal authority or a fixed position.

Thus while a user had the option to build their own 'digital home', or homepage, and could even fashion this to their wishes in a do-it-yourself (*bricolage*) manner, as has been discussed in Chapter 1, they still had to pay for the space in order to own it. A tourist could not have a homepage, only an inhabitant could. This means that owning a homepage is not a tactic, as 1) it has been decided by the builders of the Digital City and 2) they could only alter their own homes.

Concluding words

All in all, this chapter has delved into the nuances of structuring online spaces as urban environments. The affordances of the city metaphor on the World Wide Web, exemplified by the Digital City, have been examined through the lenses of hyperlinks, drifting, and psychogeography. The hyperlink, acting as a digital path, transforms the virtual landscape into a dynamic space where users can navigate, discover, and engage. Unlike physical paths constrained by time and space, digital hyperlinks liberate spatiality, providing users with the power to transcend barriers instantaneously.

Drifting through the Digital City, akin to the Situationist concept of dérive, has emerged as a mode of exploration. Users are not mere inhabitants; they are playful participants, encouraged to embrace chance encounters and uncover hidden facets of the online urban environment. The

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[14] An example of one these squares is Gay Square, one of the popular places of the Digital City (Van den Besselaar and Beckers: 122). The chatroom/café of this square, alongside some others, has been rebuilt by old DDS enthusiasts and can still be accessed by the time of writing this thesis (and can even be used for live chatting!): http://city.deds.nl/gay/

subversive nature of this approach challenges traditional power dynamics, fostering a sense of autonomy and empowerment — several points that will be discussed in the next chapter.

As we reflect on the metaphorical use of a cityscape in the Digital City, it becomes evident that this virtual realm is not a mere replication of physical urbanity but a dynamic, ever-evolving space with its own rules and affordances. The affordances of the city metaphor on the World Wide Web, as showcased by the Digital City, invite users to participate actively, engage in serendipitous exploration, and challenge established norms.

Thus, the Digital City stands as a testament to the potential of metaphorical structures in shaping online experiences. By weaving the threads of hyperlinks, drifting, and psychogeography, the Digital City has not only facilitated navigation but has also fostered a digital urbanity where users are both creators and explorers of a rich, interconnected space.

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Chapter 3: Playing (in) the City

Games, avatars, customization: all of these features made the Digital City an environment to immerse oneself in. Let us not forget the bright colors of the website's interface and the impressive graphics that invitingly prod the user to click on it. Yet however grand and animated these features may be, there were serious implications that lay below the web pages and web elements. It has already been said that the Digital City was created for societal and political reasons, and these motivations are made clear in the very first interface of the website. In DDS1, option 9 would lead to the Election Centre (verkiezingscentrum).[15] Here, users were encouraged to discuss policy information and they could even contact a local representative by e-mail (Rustema 2021: 21). However, this was not how the website was used at all (22). Rather, users assembled in subgroups that focused on their interests, built (and squatted) online houses, played games, and drifted through the city as if it were their playground.

It is this last word, playground, that this third chapter focuses on, and specifically the first part: play. Play and playfulness, I argue, were at the heart of the Digital City's success and growth, and in this chapter, I set out to uncover how play and playful elements enabled greater participation on the platform and helped users to make internet technology one's own. Firstly, the concept of 'play' is defined, and look at how the Digital City can be seen as a (digital) playground. Secondly, the question of identity is broached and I seek de understand how the DoDo, the user's avatar, invites social spontaneity and playfulness.

All the while through this, De Certeau's concept of tactics and strategies and the Situationists' ideas on urban life, which were discussed in Chapter 2, are fleshed out so we can understand the interplay between design and playful drifting. I build upon two case studies in understanding how play(fulness) helped users to make the virtual city their own: the online squatting movement in the Digital City and the Digitale Metro, or the Digital Metro, which was a MOO that allowed certain people to participate in expanding and renovating the city and communicate in a text-based environment.[16]

Mapping the City

Playground — that is a word that I easily connoted with the Digital City. It was experimental and interactive and had role-play, competitions, and, just like any other game, rules. In this vein, the digital environment that makes the Digital City could arguably be seen as a 'magic circle' as described by Johan Huizinga. He wrote on the concept of this magic circle: "All play moves and has its being within a play-ground marked off beforehand either materially or ideally, deliberately or as a matter of course" (10). Huizinga talks of *play* as a step out of 'normal reality' into a temporary sphere. The concept of a 'magic circle' refers to a space or environment that is created within a certain set of rules and boundaries, separate from ordinary life, where play and interaction occur.

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[15] See figure 9 in Chapter 2.

[16] A MOO, denoting 'MUD, Object-Oriented', represents a distinctive genre within the domain of online text-based multiplayer virtual reality systems. Derived from the broader category of Multi-User Dungeons (MUDs), MOOs are characterized by their object-oriented framework, wherein the virtual environment is structured around manipulable objects that users can create, modify, and interact with.

He further argues that any location has the potential to serve as a playground, a magic circle where individuals can temporarily transition from their ordinary experiences to engage in play (11).

However, Sybille Lammes and Chris Perkins criticize Huizinga for his static views on gameplay, saying that the magic circle "as a theoretical concept depend[s] too much on pre-given, unchangeable and stable boundaries" (2016: 18). I wholeheartedly agree with this critique. Not only is the boundary between the 'magic circle' of play and the real world not as clear-cut as Huizinga proposes, but it also denies the fluidity of play: contexts and negotiation can change the nature of the game and can alter the 'borders' of the playground. As Lammes and Perkins state, "Luck, risk, fate or failure become foregrounded as shape-shifting factors of playful mapping assemblages when play takes place in situ" (17). Consequently, they propose an alternative to Huizinga's magic circle by approaching the 'playground' (or in their terms, 'playful contexts') as fluid and as an outcome of process. This perspective challenges the idea of a playground as fixed and isolated by portraying play as a dynamic, interconnected network of nodes. The strength and nature of these playful contexts depend on the relationships between participants and the ongoing process of interpretation and interaction within the play environment.

The idea of playful contexts as dynamic becomes all the more relevant when seen in the digital age. With the rise of digital gaming and virtual environments, the notion of a temporary and isolated magic circle seems moot. In online multiplayer games and virtual worlds, players often carry over experiences, relationships, and consequences from one session to another. The persistence of digital environments challenges the idea that play exists within such spaces, as the consequences of actions within these environments can extend beyond individual play sessions.

But how is play defined here? Both play studies and cultural studies have revealed that play extends beyond light amusement or entertainment; rather, it serves as a cultural praxis intricately linked to power (Lammes and Perkins: 16). Following this perspective, play is defined as active engagement in activities that provide individuals with pleasure, yet do not inherently lack seriousness or depth. This corresponds with game scholar Miguel Sicart's (2014) exploration of the notion of playfulness beyond formal game structures. He states that playfulness is not exclusive to games but can permeate everyday life (30). This perspective expands the understanding of play beyond specific rules and boundaries, also undermining Huizinga's concept of the magic circle since it challenges the idea that play only occurs within a designated and separated space.

It is important that we approach play and playfulness as blurring the lines between reality and the game, especially in the context of the Digital City. The immersive and interactive nature of the digital environment allows for a seamless integration of play and everyday life. In this setting, play is not confined to a physical space or limited by temporal boundaries but becomes an integral part of users' experiences as they navigate the digital landscape.

Cracks and hacks

Earlier, I discussed how users employed tactics to subvert the structure of the Digital City's virtual environment through 'drifting', or the 'dérive'. The Situationist International, the group of avant-garde artists and intellectuals that was discussed in the previous chapter, introduced the concept of *psychogeography* and advocated for playful urban interventions as tactics to subvert the alienating effects of the capitalist city (Sadler 1999: 5-6). Their *détournement*, or the hijacking and repurposing of existing elements in the urban environment, serves as a tactical approach to re-appropriate space

for alternative uses (Debord 1956: 3). These tactics are inherently playful, seeking to disrupt the expected flow of urban life and encourage new ways of perceiving and interacting with the city. Yet this tactical approach worked in other ways as well: by tweaking online identities, subverting the digital landscape through 'squatting', and expanding the city in unexpected ways.

But what exactly do 'tactics' entail? Michel de Certeau's seminal work, *The Practice of Everyday Life*, initially published in French in 1980, serves as the foundation for his exploration of the everyday, wherein he introduces two pivotal terms: strategies and tactics. In this dichotomy, tactics manifest as spontaneous and improvisational forms of resistance, countering the systematic controls exercised by powerful entities, such as governmental bodies or institutions, which are prevalent in contemporary urban landscapes. Tactics, then, encompass a cunning means of resistance, and challenge, infiltrate, or contest the established norms and prescribed behaviors imposed by higher authorities. De Certeau writes, "[t]he space of a tactic is the space of the other. Thus it must play on and with a terrain imposed on it and organized by the law of a foreign power […] It must vigilantly make use of the cracks that particular conjunctions open in the surveillance of the proprietary powers" (37). All in all, de Certeau sees the tactic as a means by which cracks are exploited.

These tactics open up room for play. Amanda Wasielewski, author of *From City Space to Cyberspace* (2021) elaborates on these 'cracks', saying that "[i]n art, cracks often find expression and form through play or playfulness" (2021: 18). These cracks, which can be interpreted as imperfections or disruptions, are often expressed and take on a form through the playful elements. Play, according to Wasielewski, is a way for individuals to make sense of their surroundings. It involves rehearsing or performing various aspects of human life within a smaller, contained representation of the surrounding environment (19).

It is important to note that the Digital City was a tactical movement in itself: the project was an initiative that wasn't spearheaded by business entrepreneurs or corporate entities; instead, it emerged as a collective effort to establish an open, democratic, autonomous space by a group of idealistic artists, activists, and anarchists who collaborated to create a platform. The focal point of this platform was to revolve around art, politics, and culture, emphasizing these values over monetary exchange. "It was an independent platform dreamed up by a group of cyberpunk hackers and veterans of the squatters' movement, who saw the emerging internet as an opportunity to organize, communicate, and create" (Wasielewski 2021: 354). As a consequence, we can conclude that the design of the website was — at least in the beginning — purposefully made playful with enough 'cracks' for the users to engage in tactical activities. Play and playfulness, thus, were inherent to the interface and structure of the platform.

Playing Identities

Brian Sutton-Smith (2009) emphasizes the paradoxical and ambiguous nature of play. He argues that play can simultaneously embody elements of pleasure and pain, freedom and constraint, fantasy, and reality. Play, for him, often involves the exploration of alternative identities, scenarios, and emotions, blurring the boundaries between what is considered 'real' and 'make-believe' (7; 139; 164). When the user is online, they are not bound to their body, their social circles, or their everyday lives. Rather, they were presented on screen by firstly, their own customized name and, secondly, their DoDo, the Beaker-inspired avatar. This virtual representation of the player within the digital world allowed users to feel more connected to their digital presence. The Digital City website knew

an 'avatar generator', which would produce a random avatar for the digital citizen, which later on could be changed and manipulated by the user (Alberts, Went, and Jansma 2017: 151). The 'DodoS' were, although anthropomorphic, non-human, and genderless, which gave users the advantage of the feeling of anonymity.[17] As such, the DoDo embodies a playful nature by enabling users to let go of their everyday humdrum and adopt different identities. I find that this homogenization of virtual outward appearances opened up a space for users not only to let go of their 'real' lives but also that it allowed the user to express their innermost interests and desires on the platform of the Digital City that, without the anonymity, the web provided, would have been left undiscussed.

This 'second-life'-like concept corresponds with the ideas of Sherry Turkle, who writes in her book *Life on the Screen: Identity in the Age of the Internet* (1995) that this anonymity and disembodiment offered by online interactions allow individuals to transcend the limitations of their physical bodies and societal expectations. The adage created by Peter Steiner in 1993 — 'On the internet, nobody knows you're a dog' — demonstrates this approach to identity expression. In cyberspace, new forms of identity, stripped of the body and its characteristics (Asian, black, white, female, male, disabled, pierced, tattooed, etc.) that we so often regard (and regarded) as a site of identity, were made possible. Users can adopt different usernames, create new personas, and engage in conversations without revealing their offline (gender) identity. Turkle observes that individuals often take advantage of this freedom to 'play' with their identity (178). They may adopt gender-bending or androgynous usernames, engage in gender-swapping role-play, or deliberately present themselves in ways that challenge conventional (gender) stereotypes.[18]

All in all, users can *play* with their identity and enjoy anonymity. This brings another dimension to the earlier discussion on online venturing or drifting. For Debord and his fellow Situationists, the act of drifting was an important tool in their revolutionary project of appropriating and hacking the existing cultural norms to allow new situations to arise, and *play* and *playfulness* fulfilled a great role in this process of subversion. As we have seen, the dérive requires the drifter to be guided by the implicit resonances of the (digital) city, to move with sensitivity to its psychogeographical influences, and might therefore be understood as a playful decoding of infrastructure. Specifically, the drifter has "to drop their relations, their work and leisure activities, and all their other usual motives for movement and action, and let themselves be drawn by the attractions of the terrain and the encounters they find there" (n.p.). Anonymity provides users with a sense of freedom to explore and experiment within the digital city environment without the constraints of real-world identity. Users may be more inclined to engage in unconventional or spontaneous behaviors during a dérive. Furthermore, the 'DoDo' anonymity minimizes the social judgments and expectations associated with real-world identities. This reduction in social constraints

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[17] It should be noted that users had the ability to give their avatar earrings, a mustache or lipstick, thereby making the DoDo 'gendered', but this was the user's choice.

[18] In their collaborative effort to dig up the 'avatar generator', five students at the University of Amsterdam wrote an essay on their process. In this, they gave an example of gender-swapping:

"The website of DDS was one of the very first world wide web pages that had interactive avatars. These avatars could be changed and manipulated by the user himself. Michaël van Eeden recalls one of the very first encounters where a man imitated a woman. A 'woman' contacted Mieg with the question to meet up in a bar in real life. When he got there he did not see this woman but it turned out to be a man who wanted to know how people interact with women, since he wanted to do a gender transformation; this man could practice the interaction inside DDS" (De Vries, Went, Avis, Van Hoesel, Kerkdijk 2015: 31).

allows individuals to engage more authentically with the digital environment and each other, fostering a potentially richer and more diverse range of interactions.

However, anonymity also facilitates the adoption of fluid identities and the ability to engage in role-playing scenarios. Users can experiment with different personas, which is illustrated in the project report of DDS3: "Some women specifically choose a male or neutral login name to avoid unpleasant situations. On the other hand, some men sometimes opt for a female login name to attract extra attention".[19] At last, anonymity can lead to a state of 'deindividuation', or "reduced social accountability and reduced self-monitoring" (Madigan 2016: 14), where individuals may feel a diminished sense of personal responsibility for their actions. This can result in more spontaneous and unrestrained behaviors, adding an element of unpredictability to the dérive.

In conclusion, the users have to let themselves be guided by whatever feels right at the moment, rather than what the architecture/interface of the (digital) city tells them to. In this sense, the Digital City drifters were exploring "the free space of movement within a more rigid structure" (Salen and Zimmerman 2004). The interface affords what to do, the users enjoy the freedom that appears within the boundaries of that frame.

The Digital Metro

Playfulness and experimentation were considered crucial for psychogeographical exploration. The Situationists proposed various strategies and games to disrupt the ordinary experience of the city, such as *détournement*, which involved subverting or repurposing existing elements of the urban landscape to create new meanings and interactions (Debord 1956: 3-4). This playful intervention aimed to provoke critical reflection on the dominant urban structure and its impact on human experiences (5). Here, I would like to return to the Digital Metro, where users could explore the city without its graphical features and use code to add buildings and objects to the virtual environment. Thus, the Digital Metro was a virtual space where users could actually be co-creators of the environment.

The Digital Metro was a text-based multi-user domain (MUD) designed to mimic the experience of a physical metro system within the digital realm. It functioned as an 'underground' space that, unlike the graphical interface of the rest of the Digital City, was completely text-based. In his *The Rise and Fall of the DDS*, Reinder Rustema writes that "[the Metro] was not owned by anyone, it is a neutral ground where people would play, talk and create without any plan or structure in mind" (27-8). Interestingly, he remarks that the Metro was not easy to access and that one "would have to spend time to advance in the labyrinth" (27). Thus, users had to venture and engage to become a 'construction worker' (bouwvakker)/programmer in the Digital Metro.

The required effort and willingness to delve deeper into the digital environment relates to the Situationist concept of the dérive in the sense that both emphasize the importance of active participation and exploration. Users had to invest time and effort to navigate the structure of the Digital City and uncover its possibilities. If they did come across the Metro, they would have the chance to alter the existing architecture of the city. The process of exploring the city is mirrored in the interface: at first, as we have seen, the user is presented with a literal map of the Digital City (see

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[19] Translated from Dutch:
Sommige vrouwen kiezen speciaal voor een mannelijke of neutrale login-naam om vervelende situaties te vermijden. Aan de ander kant kiezen mannen soms voor een vrouwelijke login-naam om juist extra aandacht te krijgen.

Figure 11). This map can be seen as a representation of the pre-existing urban structure and its prescribed paths, reflecting the established order and intended routes of the city (Pinder 1996: 407). When a user proceeds to click on a hyperlink, they deviate from this bird's-eye view of the city and embark on a digital drift, akin to meandering through streets. Yet, note how even when visiting a district, the map-like structure remains (see Figures 12 and 13). In this way, the interface of the website still determines the established routes a user might take, and the user is constantly reminded of the city map by the icon in the bottom left corner. They function as landmarks that are perpetually present. Only when one would visit a homepage or a chatroom, these grey blocks would disappear, leaving the user less influenced to follow predetermined paths. As an accumulation, the Digital Metro was stripped of all these elements, leaving only the textual base of the city. The user could construct, deconstruct, and, thereby, subvert.

In an interview with Geert Lovink, Michaël van Eeden, one of the initiators and programmers of the Digital City and creator of the Digital Metro, spoke of how the Metro was meant for 'underground' builders, which alluded to digital tunnels and stations based on the metro stations of Amsterdam. He was surprised to see that people also began construction overground. "Soon, you had different scenes, such as Star Trek fans who had recreated the Starship Enterprise, which was floating somewhere in the air", he says.[20] As a construction worker in the Metro, a user was given thirteen 'building blocks', which could be anything from a street, to a building or an object. Van Eeden remembers,

> An element could be a street, but also a room or a walking robot. This also led to people collaborating to gather the missing parts together. That's how you got the Waterlooplein station, built by someone, with a pigeon that would sit on your (virtual) head and keep saying 'roo-coo-coo' all the time; that was built by someone else entirely.[21]

Individuals within the virtual environment of the Digital City were actively engaging in the construction and manipulation of various elements to create unique and unexpected combinations. This process of collaborative creation and recombination can be seen as a form of *détournement*, as users are repurposing and remixing elements to generate a novel and playful outcome. Here, we are also reminded of the *bricolage* users employed when they were building their homepages/houses. It is extremely interesting to see what users do with the digital elements at hand. However, unlike building a homepage, the Digital Metro was a group effort, as one could be surprised by what other 'bouwvakkers' could do with their digital construction.

Moreover, the mention of the Waterlooplein station with its peculiar features, such as the pigeon that interacts with users, exemplifies the subversive and transformative nature of détournement. By incorporating unexpected elements and introducing unconventional behaviors, individuals challenge traditional expectations and disrupt the established norms of the virtual environment. Through collaboration and skill, they made the virtual space their own.

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[20] 'Ondergrondse verhalen uit De Digitale Stad'. Interview with Geert Lovink: http://www.demetro.nl/sociaal/artikels/mieg.php

[21] Translated from Dutch:
Een element kon een straat zijn, maar ook een kamer of een robot die rondloopt. Dat leidde er ook toe dat mensen met elkaar gingen samenwerken om de ontbrekende onderdelen bij elkaar te krijgen. Zo kreeg je het station Waterlooplein, door een iemand gebouwd, met een duif die op je (virtuele) hoofd ging zitten en de hele tijd 'roekoekoe' zei; die was weer door heel iemand anders gebouwd.

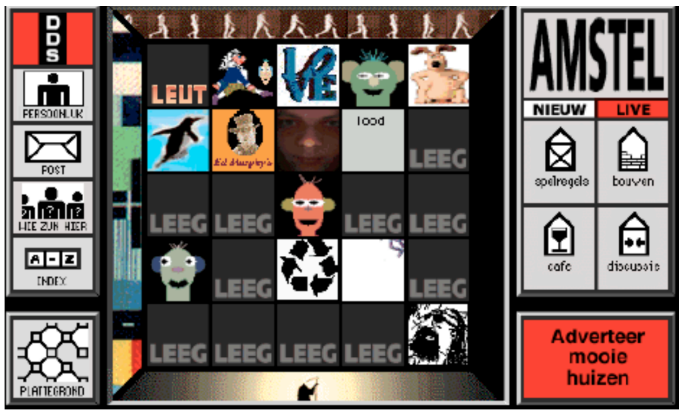

Figure 12: Amstel Square

Figure 13: Travel Square

Squatting Homepages

This creation and recombination happened in a different way as well — one that grew as the Digital City progressed: squatting, or 'kraken' in Dutch. Kraken, which translates to 'to crack open', is a term used for squatting, where individuals or groups move in and use the property without legal authorization, but also for hacking.

Squatting was a prominent movement in the '70s and '80s, specifically in Amsterdam, the city upon which the Digital City is loosely based, and it stretched out to the digital realm, too. Squatting takes on a metaphorical meaning within the Digital City. It refers to the practice of users taking over or occupying unattended digital spaces, specifically homepages or 'houses' on the platform. Users would metaphorically squat in these virtual properties, creating a parallel to the physical act of squatting in abandoned buildings. As 'houses', or homepages, were left unattended for a longer period, other users could squat them, so they could inhabit a house that was part of a particularity popular street they wished 'live' at.[22] This was an affordance of the website, yet it was programmed out of necessity. In a report of the archeological service of the Digital City,[23] it is stated that "[a] place in a residential neighborhood became so scarce that the city government allowed residents to squat a spot if the original occupant did not put in enough effort to maintain their place".[24] Because there was a 'housing shortage' in the Digital City, people jumped at the chance to squat a house when they saw the possibility.

It is crucial to note that the possibility of squatting digital houses was an intentional design choice. This intentional affordance acknowledges the importance of user agency and creativity within the digital space. Users are not merely consumers of the platform; they are active participants who can shape and personalize their virtual environments. If the act of squatting is explicitly allowed or even designed as a feature within the Digital City, it does not strictly align with de Certeau's concept of tactics as a subversive and resistant practice against established norms.

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[22] 'Projectverslag Digitale Stad'. https://www.dds.nl/html/dds/jarig/3.0project/

[23] 'De Archeologische Dienst'. http://www.vankan.dds.nl/dds/verjaardag.html

[24] Translated from Dutch:
Een plaats in een huizenwijk werd zo zeldzaam dat het stadsbestuur het bewoners toestond een plek te kraken als de oorspronkelijke bewoner zich niet genoeg inzette voor zijn plekje.

Instead, the programmed aspect of squatting is a designed flexibility that empowers users to engage creatively with the platform. In this context, users squatting in virtual houses becomes more of an intended play within the rules of the system rather than a subversion of it. While it still involves user agency and creativity, it is not necessarily a tactical resistance against a system that seeks to control or limit. So, while the phenomenon of squatting/kraken may be tactical in real life, it is not so clear-cut in the case of the virtual space of the Digital City.

I argue that the affordances of squatting and programming in the Digital Metro can be considered both strategic and tactical. First, these affordances align with de Certeau's concept of tactics as the creative and adaptive practices of individuals within a system. Users engaging in squatting or 'working' in the Digital Metro took advantage of an opportunity provided by the Digital City's design. They creatively appropriate unattended virtual spaces, expressing their identity and contributing to the communal aspect of the platform. In this sense, squatting is a tactical move within the immediate framework of the digital environment.

Secondly, from a strategic perspective, the intentional inclusion of these affordances suggests a broader plan to encourage user engagement, creativity, and community building, which reflects the activist goals on which the platform was built. In this sense, these affordances are a strategic decision that shaped the long-term development and identity of the Digital City. Nevertheless, the tactical and strategic dimensions are not mutually exclusive. Users employing squatting as a tactical move contribute to the strategic goals of the Digital City. The intentional design of squatting as an affordance acknowledges and incorporates user tactics into the platform's larger vision. The interplay between individual user actions and the Digital City's overall strategy creates a dynamic relationship where tactical moves contribute to strategic objectives, and vice versa.

In conclusion, the Digital Metro and squatting the Digital City can be viewed as both a tactical response by users within the immediate context of the platform and a strategic decision by the platform's designers to shape the platform's identity and encourage user engagement. The dual perspective highlights the complexity and interdependence of tactics and strategies in the evolving early landscape of digital environments.

Concluding words

The Digital City's emphasis on creativity, freedom and participation was reflected by its design in a playful manner. In the vein of Situationist ideologies and Michel de Certeau's conceptualization of everyday urban practices, the Digital City serves as an arena where users engage in a playful exploration reminiscent of the 'dérive'. As the Digital City emerged from a collaborative effort among artists, activists, and anarchists, it centered around ideas like open democracy rather than existing because of profit-driven motives. The anonymity afforded by DoDo avatars becomes a pivotal feature, liberating users from real-world constraints and allowing for the fluid adoption of diverse digital personas.

Both the online squatting movement and the Digital Metro exemplified a digital manifestation of Situationist principles, where playfulness, experimentation, and collaborative creation became powerful tools for reimagining and reclaiming the virtual environment. Simultaneously, the intentional inclusion of, what first may seem, tactical elements highlights strategic decision-making. Users engage in squatting as a form of tactical play within the established

rules, expressing identity and contributing to a communal space. This dual perspective emphasizes a symbiotic relationship between tactical user actions and the platform's strategic objectives.

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Conclusion

In closing, the Digital City stands as a pioneering experiment in the discourse of digital environments and has embodied a unique fusion of play, identity, and resistance. This exploration of the platform's dynamics has revealed a multifaceted landscape where users actively shaped their own experiences, blurring the boundaries between play and seriousness and physical and virtual.

The Digital City's urban metaphor was elaborated most cohesively: districts, shops, houses, landmarks, and public transport gave recognizable points for navigating the platform, and consequently, the Web. However, not only physical elements were brought over to the digital realm. In addition, procedures, activities, and events helped people familiarize themselves with the Web. As users engaged in the creation of homepages, played in the cityscape, and participated in the unique opportunities offered by the Digital Metro and the phenomenon of squatting, for example, illustrating the dynamic nature of user engagement. These interactions were not confined to a rigid delineation between tactics and strategies but rather showcased the interplay between creative user agency and the intentional affordances designed into the platform.

As we return to the main question of this thesis — "In which ways did the urban metaphor of the Digital City shape human-computer interaction, and what role do 'play' and 'playfulness' occupy in facilitating this process?" — the answer unfolds through a narrative of active user involvement. The Digital City's urban metaphor provided a structured yet flexible framework, allowing users to navigate and contribute to the digital landscape. Play and playfulness emerged as pivotal elements, weaving into the fabric of user experiences and interactions.

The Digital City and its design celebrated a 'do-it-yourself'/DIY culture. As the first chapter has illustrated, these opportunities for *bricolage* helped users understand the multilayeredness of the Web and the complexity that lies behind a seemingly simple webpage. When a citizen was provided a homepage, one had to learn how to navigate the Web in search of elements such as GIFs and images and master at least the basics of HTML in order to 'decorate' their virtual abode. So while Marianne van den Boomen states that metaphors *depresent* the intricate machinic processes, which to me sounds very true in many cases, the homepage-as-a-house allegory helps users get a grasp on the Web and how it functions.

Furthermore, the city metaphor alluded to *movement*, which was discussed in Chapter 2. With so many places to go and see, the user is invited to travel from one page to another. As a user would go from, for instance, the City Hall to a chatroom, they had to visit several different web pages in order to go there. This focus on movement helped users in familiarizing themselves with the hyperlink, which in turn inspired them to employ the hyperlink in designing/building digital spaces. An illustrative example of this is the way in which houses held multiple rooms/pages, or clicking on a post-it note on a virtual wall wall that led to a poem.

The Digital City, with its emphasis on creativity, freedom, and participation, exemplified Situationist ideologies and De Certeau's conceptualization of everyday urban practices. The anonymity granted by 'DoDo' avatars played a large role, liberating users from real-world constraints and enabling the adoption of (diverse) digital personas. Moreover, the online squatting movement and the Digital Metro acted as digital manifestations of Situationist principles, where playfulness, experimentation, and collaborative creation became powerful tools for (re)imagining and (re)claiming the virtual environment.

The third chapter has shown that the playful nature of the Digital City, rooted in the collaborative efforts of artists, activists, and anarchists, transcended traditional notions of play as mere entertainment. It evolved into a cultural praxis intricately linked to power dynamics, where users engaged in activities that provided pleasure while also maintaining depth and seriousness. As this thesis has shown, the Digital City gave individuals not only an opportunity to familiarize themselves with the World Wide Web but also to express themselves on it. This departure from conventional play was particularly evident in the fluidity of the digital playground, challenging Johan Huizinga's concept of the 'magic circle'. The Digital City integrated play into users' everyday experiences, thereby defying the notion of a confined and temporary magic circle. In this context, play was not confined to a specific space or time but became an integral part of users' experiences as they navigated the digital landscape.

I once again revisit Mike Sendall's remark on Sir Berners-Lee's report on the World Wide Web, "vague, but exciting". Projects such as the Digital City certainly helped in making the Web less 'vague' and more 'exciting'. When the platform would ultimately go offline in 2001 due to issues around privatization, the struggle around ownership, and emerging alternatives after the popping of the dot-com bubble, it had left its mark on the virtual world. In retrospect, the Digital City project lays bare the excitement, playfulness, and anxiety that existed in the early days of the Web and how different our perspectives on it are now, so many years after the establishment of the Digital City. The commercialization of the Web and the subsequent proliferation of social media platforms have transformed the online landscape into something far removed from the experimental and communal spirit of the Digital City. Yet, the legacy of projects like the Digital City persists, reminding us of a time when the virtual realm was an uncharted territory filled with possibilities, creativity, and play.