Virtual memory. Remembering through, within, and towards virtual worlds.

Stefano Caselli

Institute of Digital Games
University of Malta

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Supervisor Professor Stefano Gualeni

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Abstract

This thesis concerns the relations between virtual worlds and memory. It aims at enquiring and analysing how virtual worlds mediate memory, and the role memory plays in our engagement with virtual experiences. To that end, I will analyse a specific set of virtual worlds, i.e., digital games, to provide a theory of virtual memory that is generalisable to every other kind of virtual world. In doing so, I will both contribute to the field of virtual worlds research and to the specific field that aims at analysing and discussing digital games, game studies.

Although many approaches in game studies imply and/or indirectly refer to memory, very few of them explicitly approach memory as the distinct and complex concept it is. Many of the most discussed and relevant concepts in game studies, I will argue, will benefit from a more thorough and theoretically consistent approach to memory. This thesis aims at filling this gap, and to that end, I refer especially to memory studies as a companion to game studies and to virtual world research. A same thing can be said concerning virtual worlds research in general: although many accounts of virtual world research implicitly deal with memory, at the current state they still lack a comprehensive theory of virtual memory.

Like other virtual worlds, games mediate memory both on the collective level, representing and simulating shared versions of the past, and on the individual level, allowing users to develop virtual memories as they adopt a subjective standpoint within them. By intertwining these levels, I achieve a comprehensive understanding of virtual memory.

To address the relations between virtual worlds and memory, I approach the former by emphasising their dimension of technologically mediated experiences, of artefacts open to interpretation, and of interactive fictions. To that end, I use postphenomenology, and especially refer to Don Ihde and Peter-Paul Verbeek, and then merge approaches from philosophy of fiction and hermeneutics, considering especially Hans-Georg Gadamer and Kendall Walton. I therefore approach digital games in particular by using an operational definition of virtual worlds, inspired by David J. Chalmers, as the intertwining of digital and fictional worlds.

'Memory', on the other hand, clearly indicates a variety of (at times widely) different phenomena, depending on the context of reference. With the intent of addressing the complexity of the term, the aim of this thesis is to provide an understanding of memory that gathers individual and collective forms of memory, intertwined. Drawing from contemporary

memory studies, and especially from Astrid Erll, I contend that it is only by conceiving the interrelations between individual memory and collective frameworks of remembering that we can address the variety of phenomena we term 'memory' as parts of a consistent whole.

To address the different relations that virtual worlds have with memory, I understand and analyse them, and digital games in particular, as both hermeneutic and embodied memory technologies. As hermeneutic technologies, virtual worlds can be understood as 'virtual sites of memory' (inspired by the concept of 'site of memory' introduced by the forerunner of memory studies Pierre Nora) that represent and simulate the past way beyond the boundaries of literal depictions of it. With reference to historical game studies, I emphasise the role of mnemonic functionalisation in conceiving games that engage with the past, and therefore provide a taxonomy of different ways for them to represent or simulate the past. As embodied technologies, virtual worlds favour the enactment of virtual memory as a capacity that dynamically intertwines fictional and actual memories. When users engage with virtual worlds, they adopt subjective standpoints within them. I tackle the role of memory in the development of selfhood through existential philosophy, more precisely from Martin Heidegger and Jean-Paul Sartre, and then frame such roles towards virtual worlds. Since memory is pivotal in our developing existential projects and in our constructing a consistent understanding of ourselves, this is also the case for virtual experiences: the virtual selves we develop, the standpoints we adopt, and the choices we make all draw upon virtual memory. Virtual memory is therefore pivotal in considering the existential implications of virtual worlds, and digital games in particular.

I conclude the thesis by framing virtual memory towards the transformative potentials of virtual experiences, and by considering the role power relations play in how we design and enact virtual memory. By borrowing the concept of 'apparatus', I describe virtual memory as designed within and towards hegemonic worldviews. This has, and cannot but have, both hermeneutic and existential implications: I describe how digital games and virtual worlds in general, as hermeneutic and embodied technologies, can provide users with hegemonic virtual memory. Virtual memory can also be used to 'resist' hegemonic frameworks: by referring to the concept of 'counter-memory', introduced by Michel Foucault, I then overview different ways in which practices of virtual counter-memory can be used to resist power relations.

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Statement of Originality

I declare that this thesis was composed by myself, that the work contained herein is my own except where explicitly stated otherwise in the text, and that this work has not been submitted for any other degree or professional qualification except as specified.

Stefano Caselli

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Introduction.

What do we think about when we consider the relation between memory and virtual worlds? Many things, probably. The first things that come to my mind, being a digital game player, are maybe several memories I have of virtual experiences: the struggle before finishing *Final Fantasy IX* (Square 2000) and therefore leaving the characters and the world I loved so much, that time I accidentally discovered a hidden wall behind a treasure chest in the action role-playing game *Dark Souls* (Miyazaki 2011), the desperate attempt to avoid hurting and killing Ellie in *The Last of Us part 2* (Druckmann 2020), the need to entirely redo a 100-hours long playthrough of *Persona 5* (P-Studio 2016) just to defeat an optional enemy I discovered I had missed after completing the game.

I remember many events depicted, many actions and feelings experienced, and even what surrounded those experiences. Not only things that happened within those worlds but even outside of them, around them, as I engaged with them. I was in the living room of my parents' house in Italy when I found out that regardless of my efforts, I couldn't fulfil the promise Sora made to Kairi in *Kingdom Hearts* (Nomura 2002); and I was at my girlfriend's house when I met The Transcendent One in *Planescape: Torment* (Black Isle Studios 1999) and could finally find out why I lost my memories. Many games remind me of habits or rituals I used to have. For example, I used to meet my cousin to play *Hitman: Blood Money* (IO Interactive 2006) together and we used to repeat the mission on the Emily, a boat on the Mississippi River over and over, just because guards were more permissive and allowed us to show no mercy and avoid stealth approaches. It is hard to choose which examples to mention and which to exclude. I have been playing with my parents, with my girlfriend, with many of my friends, and in many different houses, places, nations, as well as during many travels. I have also played with many different hands, and many different eyes, so to speak: those games remind me of themselves as much as of the environment I was in, the clothes I was wearing, the things I was thinking and I was concerned about, and so on and so forth.

Another thing that comes to my mind when thinking about memory and virtual worlds are save-states and digital memories. I have a fresh memory about these ones: some months before writing these words, my laptop died, and I had to get it fixed. Eventually, I could have it back –just to discover that some data were lost forever, including the most recent version of this thesis. From that moment on, I store my data online from time to time, to

the point where whenever I write something, I instinctively break the flow every ten minutes just to click on the 'save' button and upload an updated version of what I am writing on the internet. My experience of this specific virtual world, a text editor, has therefore increasingly become an experience of uncertainty and constant anxiety of losing my job – things that would be outside of consideration in case, for example, I decide to write non-virtually, with pen and paper. Still on the subject of digital games, many of my favourite games of all time give utmost importance to saved data: both *Undertale* [Fox 2015] and *Nier: Automata* [PlatinumGames 2017] explicitly deal with the meaning and significance of saving data, as well as of the threat of losing saved data or the choice of deleting them purposefully. In both, saved data appear in the game to remind you about the artificiality of the experiences you are having, i.e., to remind you that you are playing a game, and at the same time function as a tool for the game to speak directly to you as a player.

Memory is also at play, in virtual worlds, through referentiality. Many times, I have been analysing and writing about digital games to find out how they follow transmedia trends, and readapt cinematic clichés, myths, and grand narratives. Many elements over time triggered my memory. Once, I had to use the internet to look for the source of the quotation "good night, sweet prince", which I heard playing *GreedFall* (Spiders 2019). I realised I remembered it from a scene of *The Big Lebowski* (Coen 1998), which itself quoted Shakespeare's *Hamlet* (Shakespeare 2017[1599-1601]). I have always been fascinated by intertextuality, and I have always enjoyed transmedia franchises, which play with referentiality too – for example when, playing *Final Fantasy VII Remake* (Square Enix 2020), I discovered that the plot had changed and differed radically from that of the original game.

I think, eventually, about all the historical games depicting the past, and maybe allowing players to change it – when, for example, I shot Adolf Hitler from a safe distance in Berlin in *Sniper Elite V2* (Rebellion Developments 2012). I have never been a fan of educational and historical games but I have always enjoyed historical fetishism, and in general the use of historical cliches within fantasy, horror, and fiction – I have played the 'Nazi zombies' mode of *Call of Duty: World at War* (Treyarch 2008), where you have to survive in an abandoned house surrounded by undead Nazi soldiers, more than the standard campaign of the game, set during the Second World War. Fantasy games also led me to learn something historical I did not already know. By playing *Valkyria Chronicles* (Sega 2008), for example, I learnt about anti-tank weapons operated by single soldiers – how they worked, the risks they entailed, and their very existence which I had ignored before.

All the phenomena mentioned above, although seemingly unconnected, may fall under a definition of 'virtual memory'. Memory plays a central role, albeit largely unexplored, in how we establish interactive (and creative) relationships with virtual worlds and digital games in particular. The present thesis aims at deepening our understanding of the connections between games, users, and memory. More precise definitions (of what I mean by 'memory', by 'virtual worlds', and therefore by 'virtual memory') are needed and presenting them will be one of the main aims of this thesis. But before dealing with that, one may ask why exactly one should focus on memory, among other phenomena, on virtual worlds among other experiential fields, and on digital games as a specific medium of reference.

Scene-setting: memory, technology, and virtual worlds.

Depending on the sociotechnical context, 'memory' clearly indicates a variety of things and processes. Nonetheless, a thing we shall agree upon regardless of the context of use is that human beings construct their selves, as well as the identity of the communities they take part in, through memory (Brown & Reavey 2015, 132; Conway et al. 2004; Reavey 2017, 108; Schacter & Welker 2016, 1). As individuals, we remember places we visited, the concepts we learned, the people we have met, the experiences we had as children, the news we saw on TV, the choices we made, the feelings we have felt, the films, novels, photographs we have seen, the music we have listened to, and so on and so forth. The image we have of ourselves, the beliefs, the drive towards our present choices and behaviours are also constructed through memory, as highlighted by existentialist philosophers (see Sartre 1962 [1936], 43). At the same time, our shared memories lie at the basis of our identities as communities, groups, societies (Halbwachs 1980[1950], 86). Commemorations, representations of the past within media, museums, and monuments are all phenomena of shared remembering that take part in how we interpret, imagine, and re-tell our past, both to others and to ourselves.

At the same time, we also construct ourselves through technology (Ihde 1990; Verbeek 2008). As I am writing this thesis, I am using a laptop and at the same time I am reading what I write through eyeglasses, with the noise of the air-conditioner in the background and looking at my smartphone from time to time to check if I receive e-mails. I am writing this thesis through technology, therefore building my knowledge and reflections through digital data, most of which I downloaded from the internet, and without technologies I could not write it – without my eyeglasses, for example, I could not even type correctly.

Our experience of the world is always mediated by technology - and this is also (increasingly) observable with memory technologies.

We have been remembering through technology at least since the first cave paintings, oral myths and poetry, way before the advent of writing and of digital memories. Nowadays, we rely on digital photographs and archives, on digital recordings, emails, not to mention the technologically-mediated phenomena I have been mentioning by speaking of shared memory – we remember through movies, museums, diaries, through blog posts, comments on social media, playlists, and documentaries. Just like it is almost impossible to list all the technologies we use extensively, it is almost impossible to map all the technologies we use to record, keep track, represent, re-tell, or re-imagine the past.

All these memory technologies do not only represent and interpret the past, but most importantly they actively shape our remembering, and therefore the way in which we recall past events and think of our memory, as well as the aspects of the past we remember or forget. Just as technology in general is not a neutral 'intermediary' between human beings and the world (Verbeek 2005b, 114), memory technologies are not neutral tools that simply empower our remembering (Irwin 2018, 185). They affect, constrain, and even limit how we re-access the past, and do so due to the affordances they have but also the needs they are produced to fulfil, and therefore the economical, ideological, political, and more broadly socio-technical and cultural systems they are produced and used within. To understand how human beings remember, it is therefore necessary to address the complexity of the memory technologies they use, as well as their being positioned towards broader, heterogeneous networks systems of production, use, and reception.

Within this thesis, I focus on a specific kind of memory technology: virtual worlds. Digital technologies, nowadays, have increasingly made the experience of virtual worlds widespread. I am experiencing a virtual world by using this text editor, for example, and I engage with virtual worlds every time I play a digital game, switch on my computer, and share a post on a social media – the list could go on and nonetheless would not be exhaustive. Virtual world experiences are increasingly becoming pivotal for our engagement with memory too (memories we store, record, re-access, and create within virtual worlds, as well as historical memories, shared interpretations of the past, and so on). Considering this spread, it is almost surprising that the relationship between memory and virtual worlds is so understudied.

To delve into how virtual worlds engage with memory, I analyse a particular instance of virtual world experiences: digital games. Digital games make the characteristics and potentials of virtual worlds as memory technology observable in an unprecedented way, as the phenomena of virtual memory they disclose, and which within them emerge so clearly, can be found in every other existing virtual world – by analysing how digital games engage with memory, this thesis will therefore contribute to our understanding of the role memory plays in the engagement with virtual worlds in general. At the same time, I will also contribute to the academic field of game studies by framing memory, both theoretically and methodologically, towards many different topics and arguments that are already discussed by game scholars.

Gaps in research.

Among the fields that have tangentially dealt with the relationship between memory and virtual worlds, the most influential are digital memory studies, avatar studies, and historical game studies.

More precisely, digital memory studies is interested in the potential digital technologies have for both individual and collective memory (see, e.g., van Dijck 2010; 2017; Hansen et al. 2009) but does not address extensively the possibility of digital technologies to disclose world-like experiences. Whilst an increasing number of game scholars have been gaining insights from memory studies to address how a specific kind of virtual worlds, digital games, engage with the past (Hammar 2019b, 28),[1] memory studies in general have rarely dealt with virtual worlds such as digital games (see de Smale 2019b, 20; Kansteiner 2017) and with how they mediate memory.

Avatar studies (as well as existential ludology), on the other hand, puts emphasis on phenomena of embodiment, knowledge development, and the engagement with virtual subjectivities in digital games (see, e.g., Kania 2017; Rehak 2003; Ryan 2006; Westecott 2009) but without addressing the role memory has in such processes. Being that memory is pivotal in how human beings develop existential projects, construct their selves, and both phenomenologically and existentially engage with the world, I contend that defining virtual

[1] See Begy 2015; Chapman 2016b; Cooke & Hubbell 2015; de Smale 2019a, 2019b, 2019c; Hammar 2017, 2019a, 2019b, 2019c; Hammar & Woodcock 2019; Kempshall 2015; Kingsepp 2007; Pötzsch & Šisler 2016; Šisler 2016; Sterczewski 2016, 2019.

memory and addressing our relationship with virtual memories will provide meaningful insights for both fields. By addressing both the complexity and the multifacetedness of virtual memory beyond the boundaries of historical representation, and the existential implications of the engagement with virtual pasts, this thesis will also enrich the focus of historical game studies, aimed at considering how a specific kind of virtual worlds (digital games) re-imagine and re-interpret the past (see, e.g., Chapman et al. 2016; Lundblade 2020).

With this research, I expect to support all these (and further) academic fields. I build a coherent framework to understand virtual memory and be able to harness it as a significant phenomenon within and towards digital games, and from the perspective of both players and designers.

There are also specific approaches that this thesis will support. Studying memory in virtual worlds has already been demonstrated as useful to approach digital games through the lens of philosophy of fiction (Van de Mosselaer & Caselli 2022) and is useful for close readings of representations and procedures within digital games, from the existential, aesthetic, and narrational perspectives (Caselli 2018). Notwithstanding the fact that the present framework is rooted in philosophy – and especially in philosophy of technology, postphenomenology, philosophy of fiction, existentialism, and hermeneutics – the analysis of virtual memory it provides can be useful for many other approaches, including cultural semiotics, material culture theory, and historical theory, all approaches that I consider and borrow from within this thesis.

Research questions and methods.

Virtual worlds represent and simulate both past events and memory, and at the same time they constrain how we remember, construct ourselves within them, and experience the past – either actual or fictional, either individual or collective, either human or technological, or rather as a fluid mixture of all these attributes. With this thesis, I aim at defining, analysing, and problematising different forms of remembering within and towards virtual worlds.

To explore the significance and features of virtual memory means to reflect on how virtual worlds mediate, affect, represent, and simulate memory, and to address the blurring of in-

dividual and collective levels of memory, as well as of its organic or mediated dimensions, especially once they are framed towards virtual experiences.

In doing so, I will address questions that were previously outside of our range of philosophical inquiry on the matter, such as: how do virtual worlds mediate memory? How can this mediation be understood compared to those of other non-virtual technologies? What are the specificities virtual worlds have as memory technologies, compared to non-virtual ones? How do virtual worlds take part in the construction of memory, both on the individual an on the collective levels? What potentials do they have for memory and which risks do they entail? How should we deal with our virtual pasts, and how do we already relate with our virtual memories?

To answer these and further questions and considering the heterogeneity of the concept of memory, I will adopt a multidisciplinary approach and discuss several theoretical and methodological perspectives.

Technology and memory are concepts so broad, fluid, and problematic that they risk being all-encompassing. At the same time, it is exactly by considering these concepts as dynamic that, I contend, that the study of virtual memory can be framed in its complexity, therefore enriching the respective fields interested in the matter. After a first part dedicated to definitions, in which I will provide relatively stable accounts of technology, virtual worlds, and memory, I will therefore construct and test hypotheses by merging many often unconnected fields, including memory studies, philosophical hermeneutics, philosophy of fiction, existential phenomenology, cultural semiotics, philosophy of technology, historical theory, historiography, and literary studies, translating insights from them into the field of virtual world research.

Being an object of study so broad, and the fields inspected to tackle it so numerous, the risk is of providing an account fragmented into as many parts as the approach addressed (and correspondent kinds of memory, or human-technology relations). Fragmenting and keeping conveniently distinguished the different objects of study I choose is also necessary to avoid conceptual confusion as I deal with them. I shall therefore, and before proceeding, introduce how the thesis is structured.

Structure of the thesis.

One of the main efforts of my research, as will be evident throughout the text, has been to make the operational distinction introduced less strict and more fluid, since it is only within a dynamic and constant intertwining of all the aspects described that virtual memory arises as the powerful, and yet dangerous as well as vulnerable, phenomenon it is.

The first three chapters of this thesis lay the theoretical foundations of what follows; in the second part, chapters 4 to 8, I introduce, analyse, and problematise different kinds of virtual memory.

In chapter 1, I define virtual worlds by adopting a (post)phenomenological perspective and provide different understandings of virtual world experiences that will become useful throughout the rest of the thesis. In particular, I lay the foundations of my understanding virtual worlds as providing access to the past in many ways: as technologies co-constituting human beings; as texts and simulations 'remembering' the past; as embodied artefacts through which our subjective remembering is empowered and constrained at the same time.

In 1.1, I start by defining what a 'world' is from a phenomenological perspective. In 1.2, I define virtuality as the interaction and co-constitution of two dimensions: digitality and fictionality. Basing on these theoretical premises, in 1.3 I define virtual worlds. I then explore some dimensions of virtual worlds that will be pivotal in considering how they mediate and re-mediate memory: I approach them as technologies (1.4), as texts in a hermeneutic sense (1.5-1.5.2) and as interactive fictions (1.6). In 1.7, I introduce the subset of virtual world I will dedicate most attention to, and explain the reason behind such a choice.

The second chapter is dedicated to memory. As a concept, 'memory' describes many seemingly unconnected phenomena, and it is only in their connections and dynamic relations that we can interpret remembering by focusing on the concept's complexity and multifacetedness. My understanding of memory includes both individual and collective phenomena, and either the material, mental, or social dimensions of remembering, as well as memory as a psychological phenomenon. It is only by understanding how organic, bodily, and individual remembering is oriented towards intersubjective, technological, collective, and socio-technical contexts that the complexity of memory can be correctly analysed.

In 2.1, I attempt a definition of memory by addressing the current debate in the field of memory studies. After having introduced the definitional issues of the concept, I refer to the umbrella-definition of cultural memory (2.2) and provide a mapping of its different levels, forms, and dimensions. In 2.3, I introduce the concept of memory technology and subsume the excursus on memory studies under the postphenomenological theoretical framework provided in chapter 1. 2.4 Complements the previous section by describing the (both qualitative and quantitative) shift implied by contemporary, digital memory technologies.

The third chapter functions as a bridge from the theoretical and conceptual frameworks provided throughout the first part of the thesis and what follows. There, I lay the foundations for the following chapters by using mediation theory to map and introduce several kinds of memory technologies (3.1-3.1.1). In particular, I suggest that we interpret virtual worlds as hermeneutic technologies that interpret the past, and that we can approach as texts, and as embodied technologies through which we can remember either actual, fictional, or virtual events – the two perspectives that I will explore thoroughly over the rest of the dissertation (3.1.2-3.1.3). In 3.2, I provide a first overview of how virtual worlds provide access to different types of memory, through a provisional taxonomy that introduces many of the criticalities I will delve into within the following chapters. A particular attention is dedicated to connective and prosthetic memory (3.2.3-3.2.4)

The second part of the thesis is dedicated to the definition, analysis, and problematisation of different kinds of virtual memory. Virtual worlds interpret the past as hermeneutic memory technologies and can therefore be seen as representing it and simulating it. At the same time, they can be understood as embodied technologies through which we remember. I therefore make a distinction between virtual memory-making, i.e., memory-making favoured and made towards the interpretation of certain virtual representations and processes, and virtual memory, i.e., the capacity of remembering we enact as we adopt a subjective standpoint within a virtual world. Lastly, I consider the transformative potential that both forms of virtual memory can have and conclude by addressing how both virtual memory and memory-making arise within hegemonic socio-techno-cultural frameworks and can either be manipulated within certain power relations or used to counter them, aiming at self-construction. Whilst, except for the brief introduction in 1.7, the first part of the thesis has been dealing with virtual worlds in general, from chapter 4 on I systematically use digital games as examples to clarify and corroborate my observations. As a conse-

quence, the second part of the thesis is also in dialogue with game studies and related fields.

By considering virtual worlds as hermeneutic technologies, I analyse how they remember the past before we do, in a textual fashion, through representation and simulation. Then, inspired by one of the most referred to concepts in memory studies, I define them as 'virtual sites of memory' and provide a taxonomy of many ways in which they 'interpret' the past.

Chapter 4 is in dialogue with the field that is most concerned about digital games and the specific ways in which they engage with the past: historical game studies. In 4.1, I clarify how memory and history can be seen as companions to approach texts dealing with the past rather than irreconcilable opposites. In 4.2, I explain how my hermeneutic approach broadens and partly diverges from that of historical game studies. In 4.3, I clarify how texts can be understood I define every representation provided by, or within, virtual worlds as itself 'virtual', or conditional. In 4.4, I explain how virtual memory-making can also be understood in terms of simulation, even of events that did not occur (4.4.1). In 4.5 and 4.6, I introduce the term 'virtual site of memory'.

Chapter 5 provides a taxonomy of virtual sites of memory, and a framework to analyse and approach their dimensions (collective and individual, representational and simulative) as dynamically intertwined. The framework is aimed at describing both literal interpretations of the past, and therefore historical virtual worlds, and virtual sites of memory in the broadest sense, including representations and simulations which are totally uninterested in the past. In 5.1, I describe different kinds of representations that can be functionalised as virtual sites of memory by drawing on the analysis of 'mimesis'. In 5.2, I describe how virtual sites of memory simulate the past.

By considering virtual worlds as embodied technologies, I address instead the relationship between virtual memory, subjectivity, and the self. I consider how virtual memories affect human beings, and why they are pivotal for the understanding the development of virtual selves and of virtual subjectivity. This allows me to approach virtual memory from an existential perspective instead of a hermeneutic one.

In 6.1, I analyse the relationship between subjectivity, memory, and selfhood by drawing from existential philosophy, and emphasise how memory is pivotal for our construction of ourselves and our development of existential projects. In 6.2, I deal with existential ludology, avatar studies, and virtual existentialism to frame these observations towards virtual worlds, therefore defining in 6.3 what I mean by 'virtual memory'. In 6.4, I describe the role of virtual memory in the construction of virtual selves. In 6.5, I explain how virtual memories can take part in the construction of our selves intended as multiplicitous and constructed through the interaction and intertwining of different world experiences (in this case, including virtual ones).

In chapter 7, on these bases, I consider how virtual memory can be experienced as transformative by users (7.1). To that end, in 7.2, I identify two transformative uses of virtual memory: 'vibration' (7.2.1) and virtual memory design (7.2.2). In 7.3, I conclude by describing virtual memory as multiplicitous, hybrid, and transformative by virtue of these characteristics.

After having described how virtual worlds engage with the past as hermeneutic technologies and can therefore be understood as 'virtual sites of memory' favouring virtual-memory making, and after having explained how virtual memories can be understood as in-between memories that we can remember through virtual worlds intended as embodied technologies, I deal with the vulnerability and manipulability of virtual memory and virtual memory-making. They are interpreted as not only complementary but rather interacting and intertwined: virtual worlds are experienced as hermeneutic and embodied memory technologies as the same time, and the two enactments of memory they favour cannot be separated except for analytic purposes only.

Virtual memory arises within socio-techno-economic and cultural networks of production, consumption, and reception, and is framed towards hermeneutic horizons of interpretation and representation of the past which are not neutral – but rather hegemonically, ideologically, and historically biased. I therefore introduce power relations into the frame, and consider how virtual memory is, and cannot but be, hegemonic. On the other hand, by drawing from Foucault, I consider how users can enact virtual memory also to 'resist' the power relations they are within and to aim at self-construction.

In 8.1, I introduce the concept of 'apparatus' to describe hegemonic virtual memory and to describe different kinds of hegemonic virtual memory: blocked (8.1.1) and manipulated (8.1.2). I therefore emphasise how virtual memory, more than other forms of memory, is vulnerable and subject to manipulation. In 8.2, I explain how even if there is no virtual memory outside of power relations, it is always possible for users to aim at self-construction and freedom through virtual memory. In 8.3 and 8.4, I discuss how this can happen, i.e., through virtual counter-memory and utopian memory thinking. 8.5 concludes the chapter emphasising once more how aiming at self-construction through virtual memory means at the same time, by drawing from Foucault, refusing being 'objectified' by apparatuses of power through it.

Chapter 9 concludes this thesis by first providing a summary of its content (9.1) and then a list of main contributions to relevant fields of research: memory studies (9.2) and game studies (9.3). Lastly, 9.4 is dedicated to the limitations and further avenues of this research.

Chapter 1. Virtual worlds.

The aim of this thesis is to investigate how virtual worlds mediate, represent, re-mediate, reinforce, produce, and provide us access to novel kinds of (as well as novel ways to think of) memory. Before proceeding further into concepts and ideas that can prove useful to develop this perspective, it is first necessary to define the matter at hand, i.e., what we mean when we think about 'virtual worlds', on one hand, and what we mean when we think about 'memory', on the other. Being that my perspective is based on the intersections (and mutual influences) of two often unconnected fields, namely that of memory studies and that of virtual worlds research, a first definition of how the two terms 'virtual world' and 'memory' are defined within each field will prove helpful for what follows. This will require using a multidisciplinary approach and choosing how the debate within the scholarly field of memory studies and virtual world research can be of help for my present purpose.

This first chapter will be dedicated to virtual worlds: my aim is to provide theoretical and methodological foundations for the 'lenses' I will use to deepen memory within (and towards) virtual worlds. I will proceed by steps, providing operational definitions of the matter at hand and presenting the approach I will adopt to inspect them.

To approach the broad set of phenomena that we may group under the term 'virtual memory', I choose to introduce many interconnected concepts. First, I introduce the concept of 'world' and of 'virtuality' from a postphenomenological perspective (1.1-1.2); then, define virtual worlds on these bases (1.3). I therefore proceed to approach virtual worlds as technologically mediated experiences, through which human beings extend their possibilities, either physical or cognitive, and which in turn affect and constrain human behaviour and existence (1.4); as texts, i.e., artefacts open to interpretation from a hermeneutic perspective (1.5-1.5.2); and as (interactive) fictions (1.6). This will allow me, later, to tackle how virtual memory-making arises from interpretation, within a hermeneutic horizon, and towards broader socio-cultural frameworks of meaning. I conclude the chapter by focusing on the specific subset of virtual worlds I will refer to over the rest of the thesis: digital games (1.7). I explain why I choose to reference mainly to digital games among other virtual worlds, why they can be understood as virtual worlds, and which specific features they do have as such.

1.1 Defining worlds.

To avoid any theoretical and terminological ambiguity, I will start with an at least brief definition of what a 'world' is or can be, postponing the moment I will deal with virtuality by some paragraphs. To that end, I will mostly draw inspiration from postphenomenology, perspective that I will explore into detail within this first chapter, and especially from the accounts of human-world relations provided by Don Ihde and Peter-Paul Verbeek.
Postphenomenology will be my main theoretical and methodological focus for two main reasons: firstly, it is an inclusive systematic theory that provides "a vocabulary that is as rich as possible" (Verbeek 2005b, 162) and aims at finding "concepts with which to make visible and understand as many aspects of reality as possible" (ibid.), therefore providing me with a framework which is suitable for both human-world and human-technology relations. Secondly, it provides a "balanced and constructive interpretation of technologies as actively co-shaping people's being-in-the-world – their perceptions and actions, experience and existence" (Gualeni 2015, 10) and intertwines such an interpretation with pivotal concepts in classic phenomenology, which allows me to link worldy experiences to experiences disclosed by technology. By approaching virtual worlds and virtual memory through postphenomenology, I will look at remembering from two perspectives intertwined: the phenomenological and the existential one, both already implied by Ihde and Verbeek.

According to postphenomenology, I would start defining a world as "reality as disclosed by human beings" (Verbeek 2005b, 108). Whilst classical phenomenology aimed to "counterbalance the alleged alienation caused by the scientific and technological approach of reality" (ibid.) by looking at 'the things themselves', this "more radical interpretation of phenomenology" (idem, 112-113) emphasises that not only that 'the things themselves' might exist outside of the range of how human beings could perceive them but, most importantly, that human beings are what they are only in relation to things as disclosed by them (Verbeek 2006, 122; see also Rosenberger & Verbeek 2015). In other words, it focuses on the context-dependence of human knowledge (Gualeni 2015, 10).[2] According to postphenomenology, the 'subjectivity' of human beings and the 'objectivity' of the world:

> "*[C]onstitute* each other. Not only are they intertwined, but they coshape one another. Human beings can only experience reality by relating to it, which does not in-

[2] This must be interpreted as a furthering of concepts that phenomenologists already implied and discussed, even without the same degree of systematisation: see Husserl's conceptualisation of 'life-world' (German: *Lebenswelt*), as both individual and intersubjective, and including socially, historically, and culturally defined world of meanings and pre-judgements (see Husserl 1989[1936]).

> volve any reality-in-itself but rather reality-for-them. […] reality is always reality for someone; in their engagement with reality, human beings always disclose it in a specific way. At the same time, humans themselves are constituted in this relation. The environment with which they are involved always codetermines in which ways they can be present to the world and each other. In the encounter between humans and world, each manifests itself in a particular way" (Verbeek 2005b, 112, emphasis of the author).

In other words, "the development of a relationship between human beings and reality precedes the theoretical establishment of a subject and an object of observation" (Gualeni 2015, 11): human beings are always caught in an intricate network of relationships with the world they inhabit – and in that network of relationships subject and object are not only intertwined but they give meaning to one another (Verbeek 2011, 28). Once the constitutive encounter between human beings and reality happens, both a specific 'objectivity' (a world) and a specific 'subjectivity' arise (Verbeek 2005b, 130): "reality arises in relations, as do the human beings who encounter it" (idem, 113).

This idea, i.e., that human beings "can never be understood in isolation from the reality in which they live" (Verbeek 2008, 388) and vice versa, is what traditional phenomenology terms 'intentionality'. According to the phenomenological tradition, the concept of intentionality explains how we can understand the relationship between humans and the world. I therefore borrow the emphasis that postphenomenology puts in how the structure of human experience is inherently intentional, or in other words, in how human beings are always directed toward their world. This means that humans, as experiencing beings,

> "[C]annot simply 'think,' but they always think something; they cannot simply 'see,' but they always see something; they cannot simply 'feel' but always feel something. As experiencing beings, humans cannot but be directed at the entities which constitute their world. Conversely, it does not make much sense to speak of 'the world in itself' either. Just like human beings can only be understood from their relation with reality, so can reality only be understood from the relation human beings have with it" (ibid.).

By referring to such a 'relationality' of every human-world relationship (Ihde 1990, 25), my aim is to avoid dealing with any idea of reality as things as they 'authentically' are, which is

the main focus of traditional phenomenological accounts (see, e.g., Ihde 1990, 3-25).[3] Such attempt is motivated not only by the postphenomenological framework for digital technologies and virtual worlds I will provide; it also derives from the fact that when referring to the past, memory itself prescinds from 'authentic realities'.[4] I find here a theoretical resemblance between how we perceive a world and how we remember things and events within it in a phenomenological sense – but I will deal with this later.

For a more thorough definition of a world, I will also reference the Heideggerian definition given by Gualeni and Vella and used as a framework to understand virtual worlds. Accordingly, I will understand a world as "a set composed of beings that are understood with all their (detectable) properties and mutual relationships [...] as experienced by one of the beings involved in it" (Gualeni 2015, 6). In order to be identified as a world, "such experience need to be persistently perceivable and behaviourally consistent for the beings experiencing it. Those qualities make that experience emerge as an (intelligible) world for a being within a certain spatial-temporal context" (ibid.; see also Vella & Gualeni 2020, xxvii). Such an additional claim is useful to distinguish worlds, and virtual worlds accordingly, from imaginations, dreams, or hallucinations (see also Chalmers 2017). This is not to say that, on the other hand, other experiences such as hallucinations cannot share with worlds some of the characteristics I will deepen into as follows. Nonetheless, I contend that worlds "are recognized as worlds precisely because [...] they emerge in ways that are repeatable and relatively stable [...]" (Gualeni 2015, 6).

Once clarified such a definition of 'world', my point is to distinguish between the actual and virtual worlds now.

[3] The emphasis on subject-object relations does not imply that a 'world-in-itself' does not exist. It does not result in relativism, i.e., in reducing reality to interpretations or contexts (as in postmodernist philosophies). To do so, according to Verbeeek, would result in re-affirming "the dichotomy between subject and object, with the weight merely being shoved to the side of the subject" (Verbeek 2005b, 113). To claim that human-world relations are context-dependent does not imply that 'reality itself does not exist'; rather, it suggests that technological mediations are the only ontological structure through which subjects and objects co-shape each other. That is to say, the world out of technological mediation is inaccessible for definition, and the world we engage with is always a 'world for us' as disclosed by technology or by our technologically co-shaped mindset (Verbeek 2008; 2005a; 2005b). I may also link the present framework with the reinterpretation of phenomenologist Edmund Husserl's thought, provided by Alfred Schutz, which emphasises the role of intersubjectivity as the basis for living and sharing the understanding we have of the 'life-world' we inhabit (see Schutz 1945; 1966).

[4] See chapter 4, 4.6.

1.2 Defining virtuality.

In accordance with the above-provided definition, I understand a virtual world as a relatively perceptually stable interactive experience disclosed by a computer-generated environment, that can be recognised as a world precisely because it can be accessed, experienced, and returned to at will and in ways that are persistently intelligible in both their mechanical and aesthetic aspects (idem, 22; see also Vella & Gualeni 2020, xxvii).

As it may be evident from the previous section, I define 'world' as an experience rather than an object or set of objects. This also allows me to emphasise the distinction between my use of the term 'world' and 'environment'. Whilst the latter is to be intended as a set of objects, the former points to the experience that arises from the engagement with those objects. In other words, two different subjects can experience two different worlds by engaging with the same environment: a virtual forest is always experienced as a virtual environment; on the other hand, "our interacting with it makes it emerge in our experience as a virtual world" (Vella & Gualeni 2020, xxvii).

But what does 'virtual' imply as a concept, and what do we exactly mean when we speak of virtuality? Inspired by virtual worlds research, I will define virtuality as intertwining two dimensions: digitality and fictionality.

My use of the term is informed by the connotation given by Pierre Lévy, according to whom "the virtual, strictly defined, has little relationship to that which is false, illusory, or imaginary. The virtual is by no means the opposite of the real" (Lévy 1998, 16). Common sense leads us to think about the "misleading opposition between the real and the virtual" (idem, 23) in terms of absence of existence (virtual) versus tangible material embodiment or presence (real). According to the author, I would suggest opposing 'virtual' and 'actual' instead of 'real', and interpreting 'actual' and 'virtual' as "two different ways of being" (ibid.) within reality instead of using 'virtual' as a more generic antonym for 'real', 'actual', and 'physical' (Brey 2008). Moreover, in conformity with this view, my understanding of 'virtual' is also informed by that of David J. Chalmers: "virtual reality is a sort of genuine reality, virtual objects are real objects, and what goes on virtual reality is truly real" (Chalmers 2017, 309). Conversely, I will use 'actual' to indicate that some things or events are currently the case in the world that we natively inhabit as biological creatures. A virtual

world is therefore not 'actual', in the sense that it is experienced during the engagement with a computer-generated environment; nonetheless, it is indeed a 'real' experience.[5]

The first dimension of virtuality I am introducing deals exactly with such a continuity between virtual and real experiences. Chalmers terms this thesis 'virtual digitalism' (idem, 310) and claims that:

> (1) virtual objects really exist, i.e., they are real digital objects within the 'base reality' we experience on daily basis;
> (2) events in virtual worlds are (digital) events that really take place; and which
> (3) we can experience as we experience other non-virtual events, i.e., non-illusorily;
> (4) virtual experiences of a virtual world are as valuable as (or at least comparable with) non-virtual experiences of a non-virtual world (idem, 311).

According to this view, virtual worlds are to be intended as primarily digital worlds. Furthermore, actual worlds and virtual worlds are not only comparable but they constitute a continuum: we perceive virtual worlds as part of reality:

> "[T]he virtual world of *Second Life* [Linden Lab 2003] involves virtual bodies (avatars) in virtual space [...]. We really have these virtual bodies, as well as having physical bodies [...]. These virtual bodies really inhabit virtual space, where they are really a few (virtual) meters apart" (idem, 316-317).

[5] It is also useful to provide a definition of what reality is before attempting to consider why virtual worlds can be understood as real. Just as the definition of 'world', that of 'reality' tends to be elusive and non-systematic, and therefore opaque or inherently ambiguous (Gualeni 2015, 51-52). Without deepening into ontological definitions of reality, I shall follow Gualeni's phenomenological approach and opt for an indexical definition of reality: in his wake, I will define 'base reality' as "the most basic level of existence, the fundamental background for the perception of phenomena and the development of ontologies" (Gualeni 2015, 53). This definition is useful as it refuses two of the most discussed theoretical understandings of reality: reality as ontologically stable; and reality as something present to our senses (ibid.). As it is made evident by Gualeni, both these definitions apply to digital worlds too – i.e., digital worlds are ontologically stable, they can be accessed and re-accessed as consistent sets of objects, or phenomenological worlds; and they are present to our senses, as we perceive them visually, aurally, and physically (it is enough to consider, for example, VR simulators, augmented reality games, or the vibration feedbacks of console controllers).
For now, suffice it for me to claim that I will refer to reality as the most basic level of existence and background for the perception of phenomena, and that within reality one can find both actual events and virtual events, both actual environments and virtual environments. Such virtual environments can favour the emergence of worldly experiences, i.e., they can be experienced as worlds. Such worlds, differently from dreams, delusions and hallucinations, fictions, and interactive novels or text adventures, can be experienced as real worlds (Chalmers 2017, 346-348).

I find this first view particularly suitable to a broad understanding of virtual worlds for two reasons. First, it is suitable for both for an ideal "permanent and perfect virtual reality [and] the temporary and imperfect virtual realities that are possible with [e.g.] current VR technology" (ibid.), as it depicts virtual worlds as emergent by virtual environments made by digital or computational objects, events, and properties made of bits. It therefore encompasses almost every kind of virtual world we can think of: from digital games to text editors, from VR simulations to abstract digital experiences (the list could obviously be lengthened). Second, it allows me to observe virtual worlds in line with other human-world experiences, in agreement with the postphenomenological account I will give later in chapter 1.

To explore a virtual forest means moving through an environment that, although digital, is real and there to be explored. At the same time, to claim that such an environment 'is' a forest, and that exploring it means to move through a forest where we are stepping on leaves and driftwoods surrounded by trees, and not merely through a set of data or bits, implies pointing out another dimension of virtual worlds: fictionality.
In other words, it implies using the virtual world in question as a prop for a game of make-believe, according to which certain sets of bits stand for some trees, certain others stand for some bushes, and my digital movement stands for a solitary exploration.[6] This second dimensions aligns with the perspective that Chalmers terms 'virtual fictionalism', according to which:

> (1) Virtual objects are fictional objects;
> (2) Virtual events take place only in fictional worlds;
> (3) Experiences in virtual worlds involve illusory perception of a fictional world;
> (4) Virtual experiences have the limited sort of value that engagement with fiction has (idem, 315).

According to this view, virtual worlds are to be intended as fictional worlds. In other words, there is no substantial difference between the fictional world that emerges from a digital game and a fictional world that emerges from a pen and paper role-playing-game, from a movie, or from a novel. By engaging with all these experiences, users can make experience of a fictional world, i.e., of a world that exists "only fictionally" (Walton 1990,

[6] I will carefully address this dimension later, in 1.6.

205; Lamarque 1981). Even though virtual digital worlds are just one among many possible fictional worlds, in this sense they share with other fictional worlds a primary reference to interpretation and imagination: fictional worlds emerge from how users interpret and experience certain elements of a work of fiction,[7] and depend on users interpreting the virtual world in question (Chalmers 2017, 335).

Without dealing further with philosophy of fiction or interactive fiction theories, accounts of which can be found within the enquiries of several scholars (Aarseth 2007a; Robson & Meskin 2012; 2016; Van de Mosselaer 2020; Willis 2019), I will provide an operational definition of virtual worlds that merges both virtual digitalism and virtual fictionalism, taken as complementary rather than mutually exclusive perspectives.

1.3 Defining virtual worlds.

Basing on the arguments presented so far, I will use the term 'virtual world' to refer to experiences disclosed within human engagement with computer-generated environments, and refer to both:

- *Virtual worlds as digital worlds*. Here 'virtual' is opposed to 'actual' and is in continuity with 'real'. In other words, data structures and bits are distinct from actual, physical bodies and objects, but both virtual bodies, environments, objects, and events and actual bodies, environments, objects, and events are to be intended as real, i.e., as things that exist in reality and that are experienced within it. Every computer-generated environment entails digitality.

- *Virtual worlds as fictional worlds*. Here 'virtual' is opposed to 'real' and points out 'non-real' bodies, environments, objects, and events to be imagined, and more specifically arising from games of make-believe and interpretation. Whilst the digital world is always present when one engages with a virtual environment, the fictional world can be viewed as 'optional' (Chalmers 2017, 335) as it depends on the interpretation of the user: whilst every virtual environment involves a digital world, only some are experienced as also fictional worlds (ibid.).

[7] With this, I don't want to imply that users are totally free to construct their own fictional world regardless of the features of the text they are interpreting, or the experience they are having. As we will see in 1.6, interpretation and imagination in make-believe games are both constrained by the props in use and by the cultural context surrounding the players (see Walton 1990; see also Arjoranta 2015; Gadamer 1977; 2006).

The distinction between these two dimensions of virtual worlds will allow me to frame memory in relation to them, since I will look at memory both as

- something performed, in a phenomenological sense and in the real world,
- as well as mediated by texts in a hermeneutic sense, and therefore to be interpreted (or imagined).

Speaking of memory towards virtual worlds means considering how we can remember within them virtually, i.e., intertwining actual and fictional aspects. By speaking of virtual worlds, I will focus on both the experience of them as digital worlds and fictional worlds without setting priorities between the two.

Such a definition is so broad and comprehensive to include experiences disclosed by widely different technologies, from VR to text editors, as explained by Gualeni and Vella (2020, xxvii). Since new virtual reality technologies are increasingly produced and designed, and since tackling their variety and specificity would take me far from the matter in hand, I do not find it useful to have a comprehensive and precise list of technologies that are suitable for my analysis. Rather, I may opt for an inclusive definition of virtual worlds.[8]

Such a definition is also thought to be broader than many of the existing definitions of virtual worlds, and therefore to forgo some defining characteristics that are usually associated to virtual worlds. I will briefly overview them and explain how (and why) does my definition engage with them.

- *Space and agency*. As noted by Gordon Calleja, "the salient characteristic which links the concepts of virtual environment and virtual world is the dialectical relationship between space and agency" (Calleja 2008, 13). According to this view, the

[8] As I am defining them here, virtual worlds can for example be experienced even through AR (augmented reality) technologies. If VR or computer games 'replace' the actual world during the experience (see Mann et al. 2018), augmented reality adds the computer-generated content onto, or embeds it into, the actual world experience (see also Azuma 1997; Milgram et al. 1995): "while virtual reality […] completely immerses users in a synthetic world without seeing the real world, AR technologies *augments* the sense of reality by superimposing virtual objects and cues upon the real world in real time" (Carmigniani & Furht 2011, 3). Though my interest is not that of deepening such technologies, I will point out how they can be assessed through my framework as well: AR technologies can be interpreted as props for games of make-believe and can transform actual spaces in virtual spaces by superimposing onto them computer-generated events or things. At the same time, they allow interaction and can be understood only on the basis of their digitality, despite the fictional content they may have. I could easily claim, therefore, that AR technologies can provide the experience of a virtual world as I am defining it during this chapter.

capability of users to 'do things' and to 'become perpetrators' of virtual events (from the definition of 'agency' given in Giddens 1984, 9) is encouraged by the spatiality of virtual worlds, and in turn 'validates' their spatiality (ibid.). In accordance with this perspective, my definition does imply a 'perceptual space delineated by the computer' (idem, 13) – virtual worlds are disclosed through both digital environments to experience and fictional spaces to engage with; as well as it does imply agency, understood as an although minimal possibility to 'do things' within a digital-fictional environment. In contrast with Calleja (2008, 14), nonetheless, I shall contend that:

also chat rooms, web pages, blogs, and webcam applications can allow users to exert agency in a computer-generated spatial domain.

My definition of virtual worlds is in other words so broad to consider any digital environment as a computer-generated spatial domain, and any action undertaken within it as agency. Even text editors, in this sense, are "worlds you can move in [...] in contrast to the imagined worlds of non-digital fictions [...]" (Klastrup 2004, 27). From the perspective of memory and memory studies, there is no qualitative difference between the above-mentioned technologies as they can all provide users with virtual worlds to experience, as soon as they disclose both fictional and digital experiences.

- *Persistence and vastity*. Another element that is usually associated with renowned definitions of virtual worlds, often coupled with persistence, is vastity. According to many scholars, and especially those who use the term to refer especially to MMORPGs, not only virtual worlds exist persistently, meaning that they are to a degree independent from both their users and developers, but (perhaps most importantly) they are also too big to be imagined in their totality (both spatial and experiential). In accordance with this, my definition of course encompasses persistence and consistency, at least to the degree needed to distinguish virtual worlds from dreams and hallucinations (see Gualeni 2015, 6). This degree of experiential, phenomenal, and aesthetic persistence is also present in single-player digital games and in text editors. From the perspective of virtual memory, in other words, there is no qualitative difference from virtual worlds that remain active when users do not access them and others that instead must be reactivated at every access. The same could be said for vastity.

It would not make sense to separate vast from small worlds in defining virtual worlds: both the experiences are virtual, and both can favour the experience of virtual memory.

Additionally, it would be hard to define 'vastity' towards a scenario in which technologies increasingly disclose bigger and bigger worlds to explore and inhabit.

- *Intersubjectivity*. Another element traditionally ascribed to virtual worlds, and usually considered in the recent debate about virtual experiences, is intersubjectivity (see Castronova 2001, 2003, 2005; Bartle 2004, 4; Klastrup 2004, 27). Virtual worlds have been defined as 'evolving and unending collective dramas' (Castronova 2001, 6), and usually being disclosed by multi-user shared environments has been considered one of the main characteristics of such experiences. Again, although I recognise that intersubjectively shared virtual worlds attain a specific phenomenological status, I will focus on virtual memory as disclosed through interpretation, representation, and simulation – all processes (and related phenomena) that take place both in shared and in non-shared virtual worlds. Although virtual memory can be framed towards certain community and intersubjective memory framework, in other words, I contend that:

  there is no qualitative difference between how single-user and multi-users virtual worlds engage with memory, at least from the phenomenological and existential perspectives I am interested in discussing within this study.

Now that I have defined what I mean by 'virtual world' experiences, I will introduce the operational framework I will use to understand and analyse how virtual worlds allow users to engage with memory in peculiar ways. More precisely, I will overview some implications of the above provided definition(s), namely: how do virtual worlds mediate our experience of the world as technologies; what does it mean that virtual worlds demand interpretation; and what does it mean for them to be experienced fictionally.

1.4 Virtual worlds as technologies.

Virtual worlds can mediate our memory, and therefore both empower and constrain it, as well as allowing us to engage with virtual forms of it. But how can virtual worlds be so im-

pactful on a capacity that is inherent to human beings? How can certain inherently technological experiences disclose, as we will see, both phenomenological and existential scenarios that were previously unavailable?
To answer these questions, and to lay the foundations and theoretical background for the rest of this dissertation, it is necessary to define how human beings and technologies do interact in a first place, and how in turn they engage with the world. To that end, I will briefly return to postphenomenology.

There is a long tradition in philosophy of technology that considers technology, just as media within media theory, as an extension of human bodies and minds.[9] Already in 1877 Ernst Kapp, coining the term 'philosophy of technology', claimed that technologies are 'organ projections' (Kapp 2018 [1877], 25). Other authors (e.g., Kittler 1999; Latour 1994), and especially postphenomenologists such as Ihde or Verbeek (Ihde 1990; Rosenberg & Verbeek 2015; Verbeek 2011), accordingly insist on how technologies do not simply empower (i.e., 'extend' or 'project') human bodies or minds but rather reshape human nature, producing "brand-new relations with the world" (Romele & Terrone 2018a, 2). Technological mediation "form[s] and structure[s] how we perceive and understand the world around us" (Deuze 2011, 138), and is "so intrinsic to our nature that it seems legitimate to wonder if it really makes sense to speak of an immediate relation of human beings with the world" (Romele & Terrone 2018a, 1).

This also means that technology "form[s] the physical bases of all human societies *past and present*" (idem, 217, my emphasis), and "is not a product of 'high-tech age.' On the contrary, [it] was first adopted by our evolutionary ancestors two species before we became homo sapiens, roughly two million years ago according to the best current evidence from paleoanthropology" (ibid.). In his *Technology and the Lifeworld* (1990) Ihde observes that "[t]here are no known peoples, now or in historic or even prehistoric times, who have not possessed technologies in some minimal sense [...]" (Ihde 1990, 11). Simply put, technology can be seen as 'constitutive' for humanity: "humanity is an invention of technology, rather than the other way round; human beings exist by realizing themselves technologically [...]" (Verbeek 2008, 388). Of course, recent digital technologies favour both a quantitative

[9] Technologies can be seen as mediators between human beings and the world. This is why most of the definitions of 'media' given by influent media scholars can be applied to them as well. If we can understand media as "artefacts whose primary function consists in widening our experiential and cognitive horizons" (Romele & Terrone 2018a, 1) or, to use the words of sociologist and media scholar Marshall McLuhan, "any extension of ourselves" (McLuhan 1994 [1964], 7), same things can be said concerning technologies.

and qualitative shift in our engagement with them.[10] Nonetheless, technologies have always 'dovetailed back' (Clark 2003, 7), even before the digital era. In a sense, we have always been cyborgs: *homo sapiens* is "a technological animal [that uses] extrasomatic means to survive in natural, built, and socio-cultural environments" (Wells 2014, 6).

The relation between human beings[11] and technologies, in other words, is and has always been one of co-constitution. Technologies are not the sole access that human beings have to the world they inhabit but, most importantly, human beings and technologies co-constitute one another.

Among other approaches, postphenomenology[12] understands technology and human beings as co-constituted in their mutual relationships rather than simply intertwined (Verbeek 2006, 122), but there are also several perspectives that focus on human and non-human interactions in sociology (Callon & Latour 1981; Callon 1986; Latour 1988; Law 1986) and that give technologies "a precise role [as] *actors* […] and not simply the hapless bearers of symbolic projection" (Latour 2005, 10).[13]
I choose to align to postphenomenology in particular not only due to its broadness (that will allow me to map different forms of remembering within, through, and towards virtual worlds in chapter 3) but also due to the theoretical and methodological perspectives it discloses. More specifically, postphenomenology allows to distinguish between two fundamental dimensions of classical phenomenology: one, inclined towards hermeneutics (hermeneutical phenomenology), examines how reality is interpreted and disclosed, present for human beings; the other, inclined towards existentialism (existential phenomenology), focuses on how human beings realise their existence and therefore are present in their world (Verbeek 2005b, 10).

[10] I will deal with this later, in 2.4.
[12] One may object that also some animals can create, use, and be influenced by technologies at least in a minimal sense. My focus on human memory and human technology is not an ideological choice but rather is aimed at providing fruitful insights for my humanistic enquiry, "[…] as our minds and identities become ever more deeply enmeshed in a nonbiological matrix of machines, tools, props, codes, and semi-intelligent daily objects" (Clark 2003, 7).
[12] It is worth pointing out that my use of postphenomenology will be limited to hermeneutical and existential perspectives on technology (and therefore, as we will see, memory). The reason for this reduction of the postphenomenological approach is that both the existential and the hermeneutical perspectives on memory, as we may see, prescind from ethical implications or design. Such implications, rather than being unnecessary, will eventually be the objects for further developments of this study.
[13] The so-called actor-network theorists, similarly to postphenomenologists, aim at overcoming a radical subject-object dichotomy and focus primarily on subject-object relations, thus retaining subject and object lined with each other (Verbeek 2005b, 163; see also Latour 1993, 57-58). Despite having two widely different vocabularies, actor-network theory and postphenomenology can contribute to each other in several ways, as suggested by Verbeek (Verbeek 2005b, 168).

Accordingly, I will follow both these perspectives to address the relationship(s) between memory and virtual worlds:

- *Hermeneutic perspective.*
  In hermeneutical terms, virtual worlds as technologies can mediate how we access to our actual world.[14] This view allows me to understand virtual worlds as artefacts open to interpretations, and as fictional worlds human beings interact with, therefore implying a closer look at how virtual worlds can convey meaning and refer to the cultural framework they are produced and interpreted within.

- *Existential perspective.*
  This view will allow me to consider how virtual worlds can mediate human existence. The existential perspective consists in interpreting virtual worlds as 'existential structures' that affect how human beings understand and attribute meaning to their own existence (Gualeni & Vella 2020) or attempt at self-creation and personal freedom (see Dorrestijn 2012).

I choose to borrow this twofold approach from postphenomenology operationally, despite acknowledging that other philosophical methods, such as existential hermeneutics (see Taels 2017; Hansen et al. 2020), slightly complicate this distinction by addressing how individual existence is also based on interpretation. I will nonetheless keep them distinguished to separate the analysis in two different moments, one concerning virtual worlds as representations (hermeneutics – in chapters 4 and 5) and the other considering virtual worlds as 'technologies of the self' (existentialism – in chapters 6 and 7). This for the purpose of clarity and conciseness.

Once I have introduced my understanding of technology and the postphenomenological approach I draw inspiration from, I will focus on the textual dimension of technologies. This will allow me to introduce concepts such as meaning, interpretation, and fiction, which, as it will be evident, are pivotal for virtual world experiences.

[14] Postphenomenologists extend the classical hermeneutical approach within phenomenology (Ihde 1991; 1998; Verbeek 2005b). Traditionally, hermeneutics involved the interpretation of texts as well as the processes and conditions of such an interpretation. Verbeek and Ihde argue for a 'more material conception of hermeneutics' (Verbeek 2005b, 141) and claim that not only it is possible to interpret texts hermeneutically but also things (i.e., technologies). This implies that even forms of non-linguistic interpretation do exist and are worth discussing, including virtual worlds.

1.5 Virtual worlds as texts.

Virtual worlds are technologies, and therefore can be understood as affecting and co-constituting human subjects. At the same time, they are artefacts subject to interpretation and meaning-making, and therefore co-constitute human culture. To address such a dimension of virtual worlds (and technologies in general), in this section I will approach them from the perspective of philosophical hermeneutics.

Before I begin, it is worth noting that even postphenomenologists acknowledge how cultures influence technologies: both Ihde, and Verbeek use the term 'cultural multistability' to define them as having functions and meanings that are never pre-determined but rather always affected, appropriated, and defined within relations that change among different cultural contexts. Not only can a same technology be used and understood differently across different contexts, but most importantly, different cultural contexts can produce different technologies to realise a same goal (Ihde 1990, 146-149). In other words, technologies are 'culturally embedded' (Ihde 1990, 125; see also Verbeek 2005b, 136), as they possess intentionality and multistability not only at the individual level but even at the cultural level:

> "Technologies are always interwoven with culture, they are always in a position to transform that culture – not 'in themselves', but from the position that the cultural definition has given them. When a cultural relation with an artefact is initiated, there arises a 'cultural intentionality' within that relation, a cultural space mediated by technology, thanks to which technology is able to give indirect form to the interpretations and experiences of human beings, as well as directly mediating sensory perception" (Verbeek 2005b, 139).

Technologies are not mere 'projection screens' (Verbeek 2005b, 137) for cultural frameworks of interpretation (i.e., 'ways of seeing', see ibid.). Rather, technological intentionality appears at the cultural level 'over and above' (ibid.) the perceptual/experiential level discussed so far (Ihde 1990, 162-191).

Once acknowledged that technologies co-constitute not only human subjects but also cultures, postphenomenologists approach such an interdependence in terms of mediation: they are interested in how technologies 'shape their culture' and not, like the semioticians,

in their 'sociocultural function' (Verbeek 2005b, 207). I will instead take a different route and address the co-constitution of virtual worlds and culture in terms of textuality. The reason behind this choice partly derives from my interest in memory and partly from the choice of virtual worlds as specific technology of reference. First, as I will claim in chapter 2, to deal with memory means also addressing how memory depends on cultural frameworks of meaning, interpretations, and references that can only be addressed through considering culture from a hermeneutic angle, i.e., as built also upon signs, interpretations, and texts. Second, differently from other technologies and artefacts, virtual worlds perform a sociocultural function that is not 'secondary' to their 'mediating role' as phenomenal objects (see Verbeek 2005b, 207) – on the contrary, such a function is arguably one of their most discussed and analysed one, reason why it would be limiting to stick with their artefactuality of technologies when dealing with how they affect (and are affected in turn) by culture. In other words, I may argue, virtual worlds (and especially their engagement with human memory) can be fruitfully approached only if conceived as also textual experiences.

A brief clarification which concerns my use of the term 'text' is needed before I go any further. I will use the term according to the extension that it has undergone to cover all kinds of artefacts that require interpretation (see Ricoeur 1981, 145-164, 169), every meaningful activity (idem, 197-221), as well as "any type of sign" (Aarseth 2001, 231). Nonetheless, like Jonne Arjoranta, I contend that there is no point in defining virtual worlds as texts (Arjoranta 2015, 29). My aim is rather to show how they can be productively addressed as texts in the hermeneutic sense of the word: understanding virtual worlds is, in many ways, like understanding texts according to hermeneutics, and therefore it is better to understand my application of the hermeneutic framework as 'an argument from analogy' (idem, 30). This because, when we engage with a virtual world, we are conscious of its artefactual nature (Currie 1990) just like we are conscious of the artefactual nature of other kinds of texts. As a matter of fact, therefore, human beings need to interpret them as any other text or artefact: "[a]ctually, hermeneutics argues that [...] interpretation is always necessary when texts are encountered" (Arjoranta 2015, 29), i.e., when we encounter artefacts that we perceive as constructed to convey certain meanings (Van de Mosselaer & Gualeni 2020).
I will adopt a hermeneutic approach to deal with how virtual worlds are interpreted, differently from actual worlds, precisely due to their artifactuality – i.e., as texts. In doing so, I will focus on how every interpretation of a text is contextually framed and relies on the figure of an implied author. These two elements are pivotal in any understanding of the interpretive process, and I will give them utmost importance in dealing with virtual memory

as raising from the interpretation of virtual worlds, and within precise cultural frameworks.

1.5.1 Context-dependency.

Philosophical hermeneutics scholars emphasise how every interpretive process is ultimately context-dependent. To explain this, I will draw inspiration from Hans-Georg Gadamer, a student of Heidegger's who aims at criticising earlier hermeneutics and focuses on human interpretation and understanding at large (Gadamer 2004 [1960]).

Gadamer focuses on what surrounds, influences, and determines how we interpret something, coming to theorise what he terms 'prejudice' (German: *Vorurteile*)[15] as a prejudgement ever present in interpretation (Gadamer 2004 [1960], 273). Prejudices for Gadamer are 'fore-structures of understanding', a lexicon that he borrows from Heidegger (Heidegger 1962 [1927], 1959), and as such they are shaped by the surrounding cultural context (i.e., the context we are thrown into, in existential terms).[16]

This also means that every interpretation possesses a precise historical dimension (Gadamer 2004 [1960], 268): when we interpret something, we are always historically, socially, culturally 'situated' (idem, 293), and affected by prejudices "inherited from our past" (Schmidt 2006, 99). Being that humans are 'historical beings', they cannot but interpret texts 'historically' (Gadamer 2004 [1960], 301), i.e., "always already affected by history" (idem, 300; see also Arjoranta 2015, 37).[17] In this sense, interpretation consists in an "[...]

[15] In German, *Vor-* means 'pre-' and *Urteil* means 'judgment'.

[16] For an overview of the idea of 'thrownness' (German: *Geworfenheit*), see Heidegger (1962 [1927]; 2008). In a way, the fact that for Gadamer, culture exerts such a great influence on how human beings perceive and interpret texts reminds us of importance of what existential philosophers define 'facticity' (Sartre 1956), i.e., the basis of our 'existential situation' (idem, 127). We will further such a concept later, by speaking of existentialist perspectives on virtual worlds, in chapters 6 and 7.

[17] This is also in line with the model of the hermeneutic circle, introduced by Friedrich Schleiermacher and elaborated by several authors to become one of the most used towards hermeneutics (Schmidt 2006; Linge 1973). It describes how interpreters can understand the details of a text only by relating them to the whole of the text itself and vice versa (Schleiermacher 1998 [1838]), i.e., how "one cannot understand the whole until one has understood the parts, but that one cannot understand the parts until one has understood the whole" (Schmidt 2006, 15). Such a whole-part interdependence exists on different levels. The reader cannot but interpret the sentences on the basis of the words that compose them, and vice versa. Even the meaning of each sentence is not just interpreted according to the overall meaning of the text composed by them, and vice versa. We can go even further and notice that even the overall meaning of a text can be interpreted as de-facto part of a corpus of texts made by a certain author, or a certain group of authors, and vice versa, that every corpus of text cannot but be interpreted according to the meaning of its elements, and so on and so forth (Schmidt 2006, 14-15). A theoretical remark on this model, implied in its first articulations but increasingly more noticeable in subsequent usages, is that meanings and interpretation cannot but be contextually defined or framed. We can in other words rephrase the claim by Schmidt and contend that, with respect to the whole the contextual framework towards which interpreters can understand the details, 'one cannot understand

interplay of the movement of tradition and the movement of the interpreter" (Gadamer 2004 [1960], 293).
Since it is built upon a tradition of previous interpretations, intended as that process of transmission in which past and present are constantly co-constituting (idem, 290), our own cannot but derive from a nexus prior to the subject-text separation that gives rise to the hermeneutic experience (something that resembles, in hermeneutic terms, the subject-object relation between human beings, technology, and the world towards postphenomenology; see also Linge 1973).

Gadamer terms the historical context-dependency of interpretations 'situation' and explains it with the metaphor of the horizon (Gadamer 2004 [1960], 301): prejudices "constitute [...] the horizon of a particular present, for they represent that beyond which it is impossible to see" (idem, 306). As such, hermeneutic horizons are not pre-determined and fixed ("we speak of narrowness of horizon, of the possible expansion of horizon, of the opening up of new horizons, and so forth [...]" – idem, 301), and most importantly are never truly closed[18] (human beings are "never absolutely bound to any one standpoint [...]. The horizon is, rather, something into which we move and that moves with us" – idem, 303). A consequence of this is that cultures tend to evolve and change, and that different possible meanings of a same text get actualised in different historical and cultural contexts (see Arjoranta 2015, 37).

1.5.2 (Implied) authorial intent.

The second aspect to consider when dealing with how we interpret virtual worlds as texts is authorial intent. Being artefacts that have been created by human beings, we interpret them also according to the intentions of their creators, i.e., to what we assume they convey and to what we assume they have been created for.

Just like artefacts are interpreted according to the function they are supposed to have, i.e., on the basis of what their creators created them to be (Evnine 2016; McLaughlin 2001; Millikan 1999; Thomasson 2007), texts are interpreted according to what their authors are

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the context until one has understood the parts it frames, but one cannot understand such parts until one has understood the context towards which they are framed' (rephrased from ibid.).

[18] The concept of 'moving horizon' also echoes that of the 'wandering viewpoint' of the reader described by the literary scholar Wolfgang Iser. According to Iser's 'phenomenology of reading', the reader of a text can never understand it as a whole but only traverse it through a continuous process of adjustments based on expectations, memory, and understanding. Our comprehension of a text is therefore never fully closed and determined but constantly evolving and transforming (see Iser 1978, 118).

supposed to claim with them. Earlier hermeneutic thinkers such as Paul Ricoeur (1981, 200-201) and Friedrich Schleiermacher (Schleiermacher 1998 [1838]) understand interpretation as the reconstruction of the original intent of the author. Schleiermacher even claims that the very goal of hermeneutics is to understand the author's psychology (psychological hermeneutics) as well as the environment the author operates within and the subject matter that he/she explores (Schleiermacher 1998 [1838], 23).

According to Gadamer, instead, I will understand interpretation as recreation: interpretation is the recreation of the meaning of the interpreted text/artefact, in relation to the present historical and cultural horizon. I therefore suggest replacing the initial emphasis on authorship placed by earlier hermeneutics with the more recent idea of 'implied authorship' by Wayne C. Booth (1983 [1961]) and Wold Schmid (2009). This idea is particularly useful as it overcomes the difference between original authorial intent and further interpretation by placing authorship on the side of the interpreter, and will be useful to analyse virtual worlds as sites of memory (see 4.5).

Booth (1983[1961]) defines the implied author as a picture of the author's second self, or 'official scribe', constructed by the reader but favoured, created by the author himself (Booth 1983[1961], 70-71). By developing this idea further, Schmid (2009) contends that the implied author is a dynamic construction that is only negotiated and implied by the reader as she engages with a text: "it is grounded in the indexes of the text, but these indexes are perceived and evaluated differently by each individual reader" (Schmid 2009, 161). In other words, the implied author is both the result and the ground for every interpretation of a text. Just as every reading constructs a novel interpretation, every reading constructs a different implied author, whose characteristics will be influenced by the socioocultural frameworks in which the interpreter lives, reads, and understands.

Inspired by Nele Van de Mosselaer and Stefano Gualeni (2020, 3), I may contend that when we engage with a virtual world we construct an implied designer, in all akin to the impliled author, on the basis of our dynamic interpretation of the world in question (as a text). Since we cannot but acknowledge the artifactuality of a virtual world, in other words, we cannot but interpret it as designed by someone according to certain intentions – and such awareness contributes determining the meaning we give to the virtual world in question.

When we interpret virtual worlds as texts, furthermore, we dynamically construct the figure of an implied designer as the maker of the events, characters, and choices that happen within it – in other words, we associate the implied designer to, among others, 'the world of the story' (Currie 2010, xvii) of the virtual world in question. This because virtual worlds are not only associable to texts in a hermeneutic sense, i.e., open to interpretation that are hermeneutically situated, but most importantly they are associable with a precise kind of texts, i.e., with fiction. I shall then enrich my hermeneutical framework with an overview of how virtual worlds can be interpreted as raising fictional worlds.

1.6 Virtual worlds as fictions.

Now that I have introduced how interpretation can be theoretically understood through the lens of hermeneutics, I shall consider virtual worlds as a specific subkind of texts, i.e., fictions. This claim needs to be clarified and deepened before moving on.

First, with 'fiction' I mean something that can be presented in a form of a text,[19] and that entails imagination rather than belief (Stock 2016; Currie 1990; 1995; Carroll 1990; Walton 1990). Drawing from Kendall Walton, who provides one of the most influential definitions of fiction, I will define fictional texts as "props in games of make-believe [...] all [of which] prescribe imaginings, generate fictional truths" (1990, 51). This implies that, whilst fiction entails imagination, "being fictional is not the same as being imagined" (idem, 39): "fictional propositions are propositions that are to be imagined - whether or not they are in fact imagined" (ibid.).

According to the author, fiction has the function to serve as a prop for make-believe games (Walton 1990, 59-60). It is worth making a distinction between texts or artefacts, which have specific functions, and natural objects such as clouds or stumps. In fact, the latter can be considered as ad hoc props that are pressed into service only in a single occasion and during a single game of make-believe (idem, 51). On the other hand, artefacts like dolls, texts, works of art, or toys "are designed to be props; they were made specifically for that purpose. That is their function, what they are for, as it is the function of chairs to be sat in and of bicycles to be ridden" (ibid.). Considering my operational focus, I will agree with

[19] Here 'text' is used as broadly as in the previous sections, to include every kind of artefact or performance subject to interpretation – images, written texts, spoken words, and so on.

Walton and use 'fiction' as a synonym of 'representation' on that matter:[20] a work of fiction, just like a representation, functions as a prop for a make-believe game – regardless of its referent being actual or not.[21] It is here that the link between his theory of fiction and the hermeneutical approach provided during the previous paragraph look similar: intended as such, representations are 'society relative' (idem, 52), or socio-culturally framed, and so are fictions. In other words, I will interpret the make-believe function of fiction as something that cannot but exist within a hermeneutic horizon: objects or texts can be interpreted as props only towards a hermeneutic situation.

Literature, theatre, movies, comic books, representational paintings, but even role-playing games, boardgames, digital games have contents that are intended to be imagined, or rather that tend to be interpreted as contents that are intended to be imagined. They can therefore be interpreted as fictions regardless of their referent being actual or not.

By considering virtual worlds as also-fictional worlds, I also point out how we engage with them in a peculiar way. According to Walton, and as discussed also by Van de Mosselaer (2020), I will speak of virtual experiences in terms of both 'imaginative participation' and 'fictional interaction'.
'Imaginative participation' describes the engagement with virtual worlds *as* fictional worlds. The virtual actions we perform, the virtual characters we meet, the virtual stories we get in touch with, are not perceived as mere set of bits (i.e., digital) and are instead understood, interpreted, and imagined (i.e., fictional). When we engage with virtual worlds, "[…] the intentional objects of our actions are actually the computer-generated graphical shapes and colours that represent these characters, and of which we imagine they are these

[20] This will also become clearer when dealing with the concept of memory. By speaking of memory as a way to re-imagine the past and superimposing present beliefs, emotional states, and cultural frameworks onto it, I will find it counterproductive to differentiate between an 'actual' and a 'fictional' past. Fictional pasts and representations of the past will therefore be considered as a same thing – see chapters 4; 7).
[21] Such a function is attributed, I may say, as implied. With this, I want to prevent the potential risk of relying on authorial intention for a definition of fiction (Currie 1985; 1990; 2010; Stock 2016; 2017). Wimsatt and Beardsley (1954) introduce the concept of intentional fallacy to suggests how, if we rely on authorial intent to define fiction, then anything per-se fictional could exist. I may instead address function and intentionality as something implied, and rely on the model of fiction provided by Gregory Currie, which extends that of Walton and focuses on intentionality. Currie emphasises the idea of 'fictive utterance', i.e., an utterance that is performed with a fictive intent (Currie 1990, 35), and defines fiction as that which is produced by utterances that are made with the intention to prescribe imagining (Currie 1990, 42; see also Stock 2016, 205-206). Such a definition, more than that of Walton, allows me to orient authorship, intention, and functionality towards the concept of implied authorship introduced in the previous section. The actual intentions of the authors have no consequences for the understanding of his novels: even if Doyle's private correspondences and notes reveal that Sherlock Holmes is an alien being and not a human, it would be wrong for a reader to conclude such a thing basing on the fictions written by Doyle (Currie 1990, 109-110).

characters" (Van de Mosselaer 2020, 175). At the same time, 'fictional interaction' points out how we can (and do) also interact with virtual worlds 'fictionally': when, e.g., players shoot zombies within digital games, they "[…] do not intend to make shapes disappear from the screen, but actually aim their fictional actions towards the zombies that scare them. Players who fictionally shoot zombies in a videogame play a self-involving game of make-believe" (ibid.). When we engage with a virtual world, in other words, we get fictionally involved within it, and at the same time we perform actual actions towards it. This also means that, at any point of our engagement, we know, and cannot but know, that what we are experiencing is virtual and not actual. In a historical game, we know that Adolf Hitler on the screen is not the actual one, and we also know that it is not an actual person at all. The fact that we simultaneously perceive a digital Adolf Hitler as both a set of animated bits on a screen and a fictional Adolf Hitler echoes the double perspectival engagement that I will introduce in 6.2 and 6.3.

During the rest of the thesis, I will use this perspective to deal with fictional and representational aspects of virtual worlds, i.e., to address how they can be interpreted, convey meaning, and be used as props to favour the imagining of fictional worlds. I will imply that virtual worlds can convey meaning, and therefore can be interpreted, and that interpretation is always culturally grounded and situated. It is now worth introducing the specific set of virtual worlds I will enquire throughout this thesis, i.e., digital games.

1.7 Gameworlds as virtual worlds.

As contended so far, and especially in section 1.3, this thesis will deal with virtual worlds in general. With this, I mean that all the concepts that I will introduce and problematise (and especially that of virtual memory) refer to phenomena that can be experienced within any kind of virtual worlds, from VR experiences to text editors. Nonetheless, I will mostly use a specific set of technologies as examples and references to apply and corroborate my ideas: digital games. Over this section, I will explain the reasons of my choice.

First, it is necessary to show how digital games can be ascribed to virtual worlds. It is relatively easy to find commonalities between all the definitions and frameworks provided during this chapter, and especially the 'twofold definition' of virtual worlds as both digital and fictional worlds, and the current debate in game studies.

Among the definitions of digital games, many emphasise how they merge two dimensions, reality and fictionality. In his *Half-Real*, Jesper Juul defines digital games as half-real ex-

periences, made by real rules and fictional worlds to be imagined, both caught in a continuous co-defining dialectic (Juul 2005, 163-196). Accordingly, Rune Klevjer defines digital games 'worlds' by emphasising how they "can trigger our imaginations, […] constitute a rule-based and self-contained 'magic circle' of meaningful activity, […] may be sensorially immersive, but also, and more importantly, […] are world-like in terms of our mode of interacting with them" (Klevjer 2006b, 110-11). Digital games are actual experiences that demand actual efforts, actions, technologies, and players, and yet the favour the experience of fictional worlds (fictionality has been thematised and discussed in detail within game studies, see Aarseth 2007; Bartel 2018; Patridge 2017; Robson & Meskin 2012, 2016; Tavinor 2009a; 2009b; Van de Mosselaer 2020; Wildman & McDonnell 2019; Wildman & Woodward 2018; Willis 2019).[22]

It may be also evident that digital games share such dimensions with a number of other digital technologies: from virtual environments that lack traditional competitive game elements as *Second Life* (Linden Lab 2003) or *Cyberia* (CTM – Festival for Adventurous Music & Art Berlin 2021) to non-ludic experiences such as training simulations, to other widely diffused and accessible pieces of software. This is why I will point out that digital games are not qualitatively different from other virtual world experiences disclosed by different technologies, at least not from the perspective of memory.

The approaches I choose to address virtual worlds have proven useful for digital games on many occasions: on the one hand, postphenomenology and philosophy of technology have already been used to observe virtual worlds (Gualeni 2015; Vindenes & Wasson 2021); on the other, hermeneutic models such as that of the hermeneutic circle proved to be 'suspiciously good models' to understand computer games (Aarseth 2001, 231; see also Arjoranta 2011; 2015; Arjoranta & Karhulahti 2014; Van de Mosselaer & Gualeni 2020). Not only does the chosen theoretical framework fit digital games, and in digital games finds a suitable field of application. My choice to refer digital games and game studies, and to focus prominently on digital games as key case studies among others to understand how memory

[22] Another rather influential definition of digital games is that of cybertexts provided by Espen J. Aarseth in 1997. According to Aarseth, cybertexts are pieces of literature in which readers must do non-trivial work to traverse the text – they are "textual machines, with unlimited possibility for variation" (Aarseth 1997, 12). As such, games not only get interpreted by their users but also (and most importantly) configured by their very interaction with the software. Notwithstanding the fact that, as seen in 1.5, I contend that virtual worlds (and digital games as such) share many elements with texts, I contend that the textual dimension of virtual worlds is only one among many dimensions of virtual world experiences. As such, although recognising that the definition of cybertext is well suited for digital games, I choose not to deal with it further to keep my analysis open and appliable to other forms of virtual worlds as well.

is reinforced, produced, influenced, and transformed by virtual worlds, has three main reasons.

The first is that digital games can be understood as a 'compendium' of characteristics that in other virtual worlds may appear separately or may be less evident. Differently from other virtual worlds (such as text editors or social media, just to name two) digital games tend for example to emphasise the fictional dimension of the experience they provide to users, to have avatars that play a pivotal role of mediators during the experience, and to deal with the actual world of experience in pretty evident ways – see, e.g., critical games and newsgames (Bogost et al. 2010). Other kinds of virtual worlds tend to have only one of these characteristics, or none of them conjoined. Again, this is not to say that digital games have characteristics that one cannot find elsewhere, in other virtual worlds. Rather, by focusing on digital games I will have the chance to observe how memory is framed towards different contexts, and mediated by different devices, in a more comprehensive way than by focusing on other virtual worlds.
Consequently, many of the conclusions I will achieve throughout this thesis will concern other virtual world experiences too. For instance, connective memory in digital games can be observed (and is mainly studied within) social networks; mnemonic iconisation is observed (and is mainly studied within) photography, art studies, and semiotics; historical memory is observed by (and is also studied within) film studies, and so on and so forth. Therefore, my approach will be informed by literary studies, history, semiotics, and a number of other disciplines conjoined with memory studies. Each time, I will focus on certain specific iterations of memory towards digital games, I will therefore notice whether such iterations could be present in other virtual worlds as well as in other media.

The second reason is their diffusion and accessibility: digital games are widely varied and diffused and are therefore particularly accessible as virtual world-like experiences for both scholars and readers. By analysing and referencing renowned and widely played digital games that "now regularly rival Hollywood and hold many of the biggest entertainment sales records" (Chapman 2016a, 14), we can make claims about memory within ludic game-worlds viewed as particular instances of virtual worlds in general, thus providing the reader with examples that can be easily accessed or observed. Because of their diffusion, digital games are also immensely popular as ways to deal with the past (e.g., from individual autobiographical re-mediation to historical pasts: see Chapman 2016a) and enjoy a prime location in the contemporary media ecology (2,4), therefore entertaining a continu-

ous dialogue around cultural memory with other digital (and non-digital) media (see also Rosenstone 2006). In other words, digital games are not only widely diffused and accessible media that favour world-like experiences, they also (for this same reason) negotiate, with other media, popular forms of memory, which are among the primary concerns of the present thesis. This may be evident for what concerns the increasing interest in gamification for cultural heritage and education (see, e.g., Hammady et al. 2016; Ioannides et al. 2017; Karagiorgas & Niemann 2017). Digital worlds are increasingly implemented in the narrativisation and dissemination of non-ludic processes, and therefore to consider how these worlds express and re-mediate memory (both intentionally and unintentionally) I will provide meaningful insights to interpret and approach such implementations.

The third reason for my choice, as trivial as it may seem, is the fact that being game studies research, this thesis is aimed at appealing to the game scholars. It consequently aims at enriching subfields and perspectives such as existential ludology, avatar studies, and historical game studies by providing an account of memory towards digital worlds research. By providing an overview on memory and virtual worlds, I will favour the cooperation between fields that may seem distant, such as memory studies, philosophy of technology, and game studies. I hope that this dissertation will favour the intervention and contribution of scholars with different backgrounds, and therefore will prove useful for transdisciplinary approaches. Once that is clarified, it is worth specifying that claiming that gameworlds are qualitatively similar to other virtual worlds may sound problematic for a game scholar. When needed, I will then frame game-specific concepts and ideas towards our perspective and explain how apparently game-relative ideas could be understood within the broader framework of virtual worlds research.

Throughout this chapter, I have achieved an operational definition of virtual worlds and I have provided a set of perspectives to consider them, emphasising their role of technologies (from postphenomenological perspective); of worlds of experience (from a phenomenological perspective); and of artefacts subject to interpretation (from a hermeneutic perspective). I have highlighted how virtual worlds can be understood as both real, digital experiences, and irreal, imaginative, and fictional experiences, and how the digitality (and reality) of virtual worlds always precedes their fictionality. I then introduced gameworlds as my main focus and defined them as a ‘compendium’ of characteristics that in other virtual worlds can appear separately, or less evidently.

Now that I have introduced virtual worlds, it is time to achieve another (at least relatively) stable operational definition, that of memory. The second chapter of this thesis will be dedicated to it.

Chapter 2. Memory.

In the Socratic dialogue *Phaedrus,* written by Plato (1995), Socrates and Phaedrus discuss what is good or bad in writing. Socrates shows hostile to the adoption of writing and the consequences it could have on Greek culture. He explains his argument by referring to Egyptian mythology and recounting the legend of the encounter between Thamus, ancient King of Egypt, and Theuth, god that created, among other things, the alphabet, giving to the people of Egypt the gift of writing. Theuth remarks on writing as a remedy or improvement for memory. Skeptical, Thamus responds by saying that is rather the opposite: writing could

> "[I]ntroduce forgetfulness in the souls of those who learn it: they will put their trust in writing, which is external and depends on signs that belong to others, instead of trying to remember from the inside, completely on their own" (idem, 79).

Socrates does believe that writing will lead to obvious advantages in certain contexts and practices; nonetheless, he claims that writing also entails an increasing dependence of the mind on technological artefacts that inevitably shape how people remember, and therefore forget. Walter Ong extensively discusses this dialogue in terms of one of the first problematisations of the 'technologizing of the word' (Ong 1982, 78-82). In a similar guise, Gualeni (2015, 101-102) references the dialogue to point out different theories of media philosophy, and traces back to it "the initial recognition of the decisive influence of technology on the possibilities for humans to collect, rationally organize, objectify, transfer, combine, and preserve information" (idem, 101).

In a similar vein, I will trace back to that a notable and initial recognition of the decisive influence of technology on human memory. I will interpret writing as a pre-digital technology, and therefore opt to read the above-mentioned excerpt of *Phaedrus* by speaking of memory technologies. More specifically, by focusing on the difference between 'external' and 'from the inside' remembering, it seems worth reading the dialogue by Plato as dealing with the relationship between 'internal memory' and 'external memory' as introduced by Finley, Naaz, and Goh at the beginning of their *Memory and Technology*:

> "Humanity has always been the species that extends itself into the environment. Memory is no exception. Internal memory is information stored in one's brain, and

> external memory is information stored outside of one's brain (either socially or technologically). Humans have a long history of using external memory, and we interact extensively with it in our everyday lives. External memory is integral to human cognition and behavior [...]" (Finley et al. 2018, v).

In other words, the risk of 'introducing forgetfulness' into human beings by externalising their memory through technological mediation that Socrates speaks about entails the clash between 'internal', unmediated memory on one side, and 'external', technologically mediated memory on the other. By relying on technological devices, suggests Socrates, humans run the risk of losing their own capacity to remember, therefore replacing remembering with reminding.

As seen in chapter 1, the technologically mediated co-creation of subject and object is the main concern of the postphenomenological perspective. By engaging with the world through technological mediation, at the same time we face both an amplification and a reduction of our perceptual, interpretative, as well as active engagement with reality: "in just the way that technological artefacts mediate perception by excluding certain interpretations of reality and promoting others, so can they make possible certain kinds of actions and inhibit others" (Verbeek 2005b, 191; see also Latour 1994; 2005; Law & Hassard 1999). In accordance with such a framework, Socrates seems to argue that writing, as a technology, at the same time empowers and limits the human capacity to remember.

One of the aims of this dissertation is exactly that of inspecting how a specific set of technologies, virtual worlds, can disclose new dimensions of our memory, and therefore to consider such technologies in a way similar to how Socrates frames writing in the excerpt discussed above. As the provisionally introduced distinction between 'internal' and 'external' memory may have announced, it is worth introducing, defining, and problematising 'memory' before I proceed. Whereas the first chapter served to introduce virtual worlds, this second chapter revolves around memory. As we may see, memory is relatively hard to define and to frame towards a specific field of enquiry. Therefore, I will inspect memory as carefully as possible before proceeding. My present aim is not that of providing some 'ultimate' definition of memory (which may be a counterproductive enterprise) but instead, that of achieving an operational definition that will help me framing it towards virtual worlds and digital games in particular.

The following chapter will be dedicated to memory and memory studies and will provide me with the terminological and theoretical tools to understand how virtual worlds mediate memory. I will begin by looking for a definition of 'memory' that takes into account the issues that memory studies faces in defining its own field of interest (2.1-2.1.1). Then, I will look at how seemingly unconnected forms of remembering can be understood as interacting and co-constituting each other's, with specific reference to individual and collective remembering (2.2). In 2.3, I will define 'memory technologies' and introduce the role technologies play in human remembering (with reference to the postphenomenological perspective discussed in chapter 1). I will conclude the chapter, in 2.4, by looking at the shift implied by contemporary memory technologies, and especially digital ones.

2.1 What we mean by 'memory'.

To obtain a relatively stable operational definition of memory, I will mainly rely on the 'burgeoning' field of memory studies. As I will observe in the following paragraphs, this field is informed by several, and at times divergent, perspectives and disciplinary approaches. By observing how these perspectives strive to find themselves on a common theoretical and methodological ground to share, I will provide an overview on the very concept of memory that will prove useful throughout the following sections of this thesis.

As a relatively emergent academic field (Dutceac Segesten & Wüstenberg 2016), memory studies "[has] reached a stage of development where it is clearly established in the sense that it is an important and widely noted scholarly concern" (idem, 3), and is currently striving to become institutionalised in a formal sense (ibid.).

Regardless of this, the field is still fragmented, at a theoretical and methodological level, along different disciplinary lines (Dutceac Segesten & Wüstenberg 2016, 7). The contemporary interest in memory features a wide number of different, and at times mutually exclusive, or hardly compatible, academic approaches (Roediger III & Wertsch 2008, 9; see also Radstone 2008). Distinctions have been made between several concepts of memory, which seemingly "has split into numerous fragments" (Tulving 2007, 42) enough that one can count up to hundreds of memory kinds (ibid). Similarly, the array of memory contexts or influences is "daunting and exhilarating" (Sutton 2011, 355; for accounts of memory contexts and influences see also Bietti 2011; Bietti et al. 2014; Reavey 2017; Sutton 2014), and the landscape of current topics of memory studies is as much complex and broad (see Ortner & Andersen 2018; Kattago 2015; Erll 2018).

In other words, "the component disciplines in the study of memory have not found systematic modus of integration" yet (Dutceac Segesten & Wüstenberg 2016, 7): they lack both ontological agreement and specificity in defining the ground that memory is supposed to cover (Olick 2008; Bollmer 2011) and a shared vocabulary (Erll 2011a, 6; Roediger III & Wertsch 2008, 9; Brown 2019), with a consequent missing of sufficient conceptual clarity (see, e.g., Zelizer 1995, 235).

Because of its own heterogeneity, the field is also concerned with the criticism of the very idea that all the disciplines within it are occupied with the same phenomena. As claimed by Erll, "for many skeptics, the term 'memory' in fact refers to […] an unacceptable homogenization of vastly different objects." (Erll 2011a, 6), ranging from the capacity "to encode, store, and retrieve information" (Baddeley 1999, 514) as well as to forget, i.e., to fail to retrieve information (Amberber 2007, 1), i.e., the 'mentalistic' meaning of the term (Wierzbicka 2007, 14), to heterogeneous non-mental phenomena, such as collectively shared rituals, media, from "neuronal connections, everyday conversations, [to] tradition" (Erll 2011a, 7), and so on.
As a term, "'memory' is constituted differently in different contexts" (Erll 2011a, 6) and points out (at times widely) different ideas. Even though "[memory] is a singular noun, as though *memory* is one thing or one type" (Roediger III & Wertsch 2008, 10, emphasis of the authors), each time the term is accompanied by modifiers that allow readers to frame that specific memory towards a certain theoretical context, e.g., '*collective* memory', '*cultural* memory', '*episodic* memory', '*autobiographical* memory', and so on (ibid.), and it is quite hard to contend that these contexts all refer to a same capacity.

Not only is it much debated whether memory studies, as a field, focuses on a same object of study or not. More importantly, it has been debated whether memory is or not a cultural construct (Wierzbicka 2007, 13).
On that purpose, Kourken Michaelian questions if the term memory is a natural or nominal kind[23] (Michaelian 2010), i.e., if it is a concept "determined by the world, by the way properties cluster together in the world, rather than by our ideas about the world" (idem, 171).[24] The author concludes that since multiple memory systems do exist, we are led to admit that memory is only a nominal kind and does not designate a consistent whole. Such

[23] On the distinction between natural kind terms and nominal kind terms, see also Schwartz 1980.
[24] In his writings, Michaelian refers to what I will provisionally term 'organic memory' (i.e., related to organic bodies or minds). According to him, nonetheless, "the question whether memory is a natural kind belongs to both the philosophy of mind and the philosophy of psychology" (Michaelian 2010, 171).

conclusion is agreed for all the disciplines that approach memory from the cognitive science perspective: "human memory is not a singular capacity but rather a set of closely interacting capacities that give rise to dissociable forms of memory performance" (Szpunar & Szpunar 2015, 2). Another similar perspective is that of Anna Wierzbicka, according to whom the nominal kind of 'memory' is demonstrated also from a linguistic perspective: "linguistic evidence indicates that while 'think' and 'know' are indeed universal human concepts, 'remember' is not" (Wierzbicka 2007, 38): 'remembering' is shared by certain languages and unknown to others (idem, 14).[25]

By relying on these criticalities, I will opt for an operational definition of memory that both interprets it as a "discursive construct" (see also Erll 2011a, 6) and encompasses widely different phenomena that do not necessarily derive from any same capacity. By following Erll's *Memory in Culture* (2011), my aim is "to promote a broad understanding of memory [...], to point out the development, differences, and connections between various concepts of memory and to bring them together [...] in a theoretical model of memory in [virtual worlds]" (idem, 7, replaced "culture" with "virtual worlds"). As convincingly argued by Erll,

> "attempts to separate 'individual memory', 'tradition', 'history' or 'fiction' from 'memory' (in favour of other terms, out of dislike for any universal 'super theory', or out of fear for the legitimacy of one's own discipline) prevent us from seeing the threads that connect such phenomena" (ibid.).

To begin with, in other words, I will define 'memory' as a discursive construct that gathers different phenomena together, or rather I will use it as an 'umbrella-term' (see Erll 2011a) to point out to both collective and individual phenomena, both cognitive and philosophical concepts, both organic and psychological ideas. Most importantly, I will look at how these different dimensions of memory interact with each other's, give meaning to each other's, and can be productively assessed only when understood in relation with each other's.[26]

[25] As the author specifies, "it makes sense to say that (apart from illness etc.) all people remember, as all people think, feel, want and know. We cannot say, however, that they all have a notion of what it means to remember. People think about life, other people, and themselves in many different ways; and no ways of thinking encoded in contemporary English should be assumed, without investigation, to represent ways which must be familiar to all people" (Wierzbicka 2007, 38).

[26] It is also worth specifying that, because of this broad understanding of memory, I will not focus only on how people remember public events of the past. I am not only interested in analysing remembering shared versions of a collective past but rather also private facts and events: when I deal with virtual memory, I will look at what it mean for users to remember both private and public events, ideas, or procedures, through virtual worlds. This broad understanding of memory is to be distinguished by the one shared, e.g., in cultural memory studies, which is interested in understand-

All the phenomena gathered under the discursive construct 'memory' share a cluster of recurring defining elements, which will help me define 'memory' as an umbrella-term. I shall now try to list these defining elements via four interconnected and consequent claims.

2.1.1 Defining memory.

Although memory includes, as a discursive construct, even distant phenomena, some claims claims can be used to address every form of memory and among various contexts. I will try to list these defining claims as follows, and use them operationally as a definition for memory as an umbrella-term.

(1) Memory is a capacity, of which remembering is the correspondent process, which results are 'memories' (Erll 2011a, 44). As such, memory is not observable but can produce something observable, whether it is a 'performance' (e.g., see Lagerkvist 2013; see also 'embodied performance', Bollmer 2011), a 'text', a 'medium' (e.g., see Kuhn 2010), or more broadly a 'concrete act' (Erll 2011a, 8), or a 'medial externalization' (idem, 44).

(2) At the same time, memory is a dialectic that involves both remembering and forgetting (Plate 2015, 243; see also Hansen 2015). As Elena Esposito claims, "[t]he topic of forgetting has always accompanied, like a kind of shadow, the theories and techniques of memory" (Esposito 2008, 181). Contemporary memory studies deals not only with remembering but also with forgetting, and contends that they are complementary processes, and that forgetting is not merely a failure of memory (a 'disremembering', see also Connerton 2008) but inherent to it (ibid.; see also Terdiman 1993, 250). It is generally also contended that forgetting is nothing but a form of remembering (Connerton 2008; Singer & Conway 2008, 279-280; Terdiman 1993, 250).[27]

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ing how people remember, both individually and collectively, but with a precise focus on the public sphere and on remembered public phenomena.

[27] What is worth noting before proceeding is that these two processes are not in balance: every act of remembering entails a selection of what is remembered and tends to exclude what is not remembered, i.e., what is forgotten is the vast majority of past things, and what is remembered consists exclusively of an exception to the spread of oblivion. In other words, "forgetting is the very condition for remembering" (ibid.), which may be understood as the exception and not the rule in how we deal with our past.

(3) Remembering is context dependent. It happens in the present, and is therefore a situated activity (see, among others, Bietti 2011; Koch et al. 2014; Van den Hoven 2014; West 2013; Zijlema et al. 2017), context-dependent (see, among others, Bietti et al. 2014; Hirst & Echterhoff 2008; see also Van House & Churchill 2008), and influenced by interrelated contexts (e.g., bodily, intercorporal, psychological, conversational, technological, societal, and political) (Bietti et al. 2014, 267; see also Sutton et al. 2010; Sutton 2011; Bollmer 2011; Loftus & Banaji 1989; Strange & Garry 2007; Echterhoff & Hirst 2009; Gutchess & Indeck, 2009; Seifert 2002; Wright & Loftus 1998). Because of its situatedness, memory points out the process of reconstructing and re-imagining the past rather than re-evoking objective past realities. Frederic Bartlett, already in 1932, defined memory as "an imaginative reconstruction, or construction, built out of the relation of our attitude towards a whole active mass of organised past reactions or experience" (Bartlett 1932, 213). One of the most influent memory thinkers, Maurice Halbwachs, specified instead that "[a] remembrance is in very last measure a reconstruction of the past achieved with data borrowed from the present, a reconstruction prepared, furthermore, by reconstructions of earlier periods where past images had been altered" (Halbwachs 1980 [1950], 68). As summarised by Erll,

> "[M]emories [are] subjective, highly selective reconstructions, dependent on the situation in which they are recalled […]. Versions of the past change with every recall, in accordance with the changed present situation. [M]emories are never a mirror image of the past, but rather an expressive indication of the needs and interests of the person or group doing the remembering in the present" (Erll 2001, 8, emphasis of the author).

As a result, memory studies analysis presents forms of remembering rather than the past itself (ibid.) and is "less concerned with the question of 'what actually happened', but rather with what people in the present believe happened and how they arrived at those beliefs" (Hammar 2019b, 22).

(4) Another common denominator memory studies shares and that I will use to define memory as a discursive construct is that of identity and self-formation. It is commonly contended that memory has a "functional significance […] in creating and/or maintaining current version of self and identity" (Reavey 2017, 108; see also Brown

& Reavey 2015, 132). Whilst historians and sociologists (among others) investigate "how memory shapes the identity of groups and societies" (Schacter & Welker 2016, 1), how autobiographical memory bears on the identity of individuals is for example the prerogative of (among others) psychologists and cognitive scientists (see, e.g., Conway et al. 2004).[28] Regardless of the disciplinary perspective one may adopt (in chapter 6, for instance, I will deal with memory and self-formation through existential philosophy), the link between memory and identity is commonly shared among memory studies, and the two terms get usually used in conjunction to highlight how, being that it is something that happens in the present, remembering is always influenced by the identity of who (or what) is remembering:

> "[A]lthough it is difficult to specify a single idea or approach that all [the] diverse approaches [to memory] share, one theme common to them is that memory is a dynamic, constructive process that reflects the goals and biases of individuals and groups, rather than a static or literal reproduction of past experiences" (Schacter & Welker 2016, 1).

I will use these interlinked claims as an operational definition to understand how memory is framed, produced, and therefore conceptualised towards different contexts, and therefore towards virtual worlds. This also includes many metaphorical uses of 'memory', i.e., 'immunological memory', which is observed by epidemiologists or immunologists, and as such, this definition must be intended as discursive and inclusive as the umbrella-construct it aims at tackling.

[28] It is also worth noting that, drawing on this link, there is a widely assumed connection between memory studies and trauma (Olick et al. 2018, 3). Memory relates to trauma both for what concerns cultural traumatic events (see among others Alexander 2004; Simine 2018; Eyerman 2004; Hodking & Radstone 2003) and for what concerns organic traumatic memory or post-traumatic stress disorders from the perspective of cognitive sciences or psychology (see among others Brown & Reavey 2014; Ehlers & Steil 1995; Howe 1997; van der Kolk & Fisler 1995; Young 1995). At the same time, dealing with trauma usually means dealing with how trauma is remembered (McNally 2003). According to classic trauma theory, which has been highly influential in memory studies (ibid.), trauma is conceptualised as "a disruption not only of memory but also of the ability to represent and process the traumatic event" (ibid.). In other words, trauma is strictly associated with remembering and forgetting, and its analyses are based upon the intertwining of these two processes and the construction of (cultural, collective, or personal) identity (Alexander et al. 2004; Eyerman 2019) as well as subjectivity. Another idea which is often associated with memory and identity is that of nostalgia. Nostalgia, trauma, memory and forgetting are "interlocking themes" (Legg 2004, 99), linked both theoretically and practically, and for what concerns both individual psyche and cultural memory. On one hand, trauma denotes the inability to deal with a past event; on the other, nostalgia denotes instead a positive attachment to a past home (being it real or imaginary), often positioned before (or beyond) a traumatic incident (idem, 103). As a matter of fact, nostalgia often appears conjointly with memory, forgetting and remembering (see among others Boym 2001; Davis 1978; Rudaitytė 2018) and is strictly related to (both collective and individual) identity or subjectivity. At the same time, in leaving out nostalgia from the actual past, it crucially refers to memory (intended as an identity-oriented capacity, resulting into context-relative processes).

Having defined what I mean by 'memory', and therefore what I will refer to by dealing with 'virtual memory', I shall now introduce the theoretical and methodological framework that will allow me to understand all the kinds of memory described by such a definition as intertwined, mutually dependent, and interdefined. The framework of cultural memory is the most suitable for such a perspective, as it entails both subjective, individual remembering and collective frameworks of memory, and especially considers their mutual influences.

2.2 Cultural memory.

Cultural memory is discussed among anthropology, sociology, philosophy, historiography, and other humanities. Though I will consider it from the hermeneutic and existential perspectives later during this thesis, for now I shall introduce it inspired by the academic fields that conceptualise and problematise it the most. For that purpose, I will provide a taxonomy inspired by the semiotic model of cultural memory, which focuses particularly on how cultural memory is mediated and re-mediated by different technologies (I will borrow such a model by Astrid Erll, Ann Rigney, who are drawing from sociologists such as Maurice Halbwachs and Pierre Nora; see Erll & Nünning 2008; Erll & Rigney 2009; Erll et al. 2008; Erll 2008a, 2008b, 2011; Esposito 2002, 2008; Taylor 2003; see also Halbwachs 1980 [1950], 1992 [1941]; Nora 1989).

Although we may agree on considering memory 'bound up with personal experience' (Koselleck 2004, 3: in Kattago 2015, 4, translation of the author), at least to a certain degree, we are also led to admit that 'collective conditions' enabling individual remembering do exist. It is commonly agreed that Maurice Halbwachs has been the first scholar to conceptualise memory as socially and intersubjectively constructed, and to focus on "the social frames of memory" (French: *les cadres sociaux de la mémoire* – Halbwachs 1992[1941], 43). According to Halbwachs, remembering the past is, and cannot but be, always a matter of both applying pre-existing cultural (as well as cognitive) schemata and sharing with others the very experience of remembering (as well as the things remembered). It is through this double process that shared versions of the past get created, shared, interpreted, and re-enacted. As furtherly observed by memory scholars, every personal memory is only possible towards a prior collective set of conditions and influences, being those social or (broadly speaking) cultural (Koselleck 2004, 6: in Kattago 2015, 4; Erll 2011a; Halbwachs 1992 [1941]). Rather than attempting to collectivise individual psychological phenomena (Bloch 1925: in Erll 2011a, 14; Erll 2008a, 1-2), as we will see in what follows, to speak

about collective remembering points therefore at the "dependence of individual memory on social structures" (Erll 2011a, 14-15).

We can distinguish two meanings of 'cultural memory':[29] as a metaphor and a metonymy.

Using 'cultural memory' as a metaphor implies referring to what is usually termed 'collective memory'. The term refers to all those practices, media, symbols, or institutions that are used to construct, maintain, and represent a shared version past. Here 'memory' is used as a metaphor since all the phenomena ascribed to it are interpreted (drawing on Olick 1999) as products of a metaphorical 'collective mind' that remembers in place of individuals. It is necessary to clarify prior to every metaphorical statement that "from the functioning of the brain and consciousness nothing can be deduced regarding the functioning of society" (Esposito 2002, 18 trans. by Erll 2011a, 100). In other words, psychoanalytical concepts can be suggestive as potentially misleading when we use 'cultural memory' as a metaphor (Erll 2011a, 100),[30] and I will contend as Manier and Hirst that "collective memories are not mere aggregates of individual memories, and one cannot reduce principles of collective memories to principles of individual memories" (Manier & Hirst 2008, 254).

[29] I will follow Erll's distinction from *Memory in Culture* (2011) as follows. See Erll 2011a, 96-101. Something similar is provided by Garde-Hansen 2011, 31-50. This distinction between two understandings of 'cultural memory' follows memory studies since its origins, already from Halbwach's work on *mémoire collective* (1980 [1950]; 1992 [1941]). Halbwachs offers a sociological theory of memory intended as a sociocultural framework rather than a capacity that is in individual, isolated minds, and claims that remembering is always associated to others (for a concise account, see Blair 2006 and Garde-Hansen 2011, 37-40). Despite that, these two ways of interpreting cultural memory, or rather how cultural frameworks affect and produce memory, have been systematised only recently, and especially from 1999 on, thanks to Olick's 'The Two Cultures' (1999). There, the author notices that "two radically different concepts of culture are involved [in the study of memory], one that sees culture as a subjective category of meanings contained in people's minds versus one that sees culture as patterns of publicly available symbols objectified in society" (idem, 336). Similarly, Jan Assmann speaks about these two different sub-kinds of cultural memory as, respectively, "memory as a phenomenon of culture" ('cultural' memory as a metonymy, i.e., collected memory) and "culture as a phenomenon of memory" (cultural 'memory' as a metaphor, i.e., collective memory) (Assmann 2006, 170).

[30] This influences cultural trauma theory in particular: by following Wulf Kansteiner, for example, 'cultural trauma' is a category mistake that derives from this misleading metaphorisation of collective processes and phenomena with individual mechanisms (Kansteiner 2004).

The metonymic use of 'cultural memory' assumes instead that remembering is an individual act but focuses on the "shaping force that sociocultural surroundings exert" on individual memory (Erll 2011a, 97). Here we are dealing with a literal use of 'memory' and with a

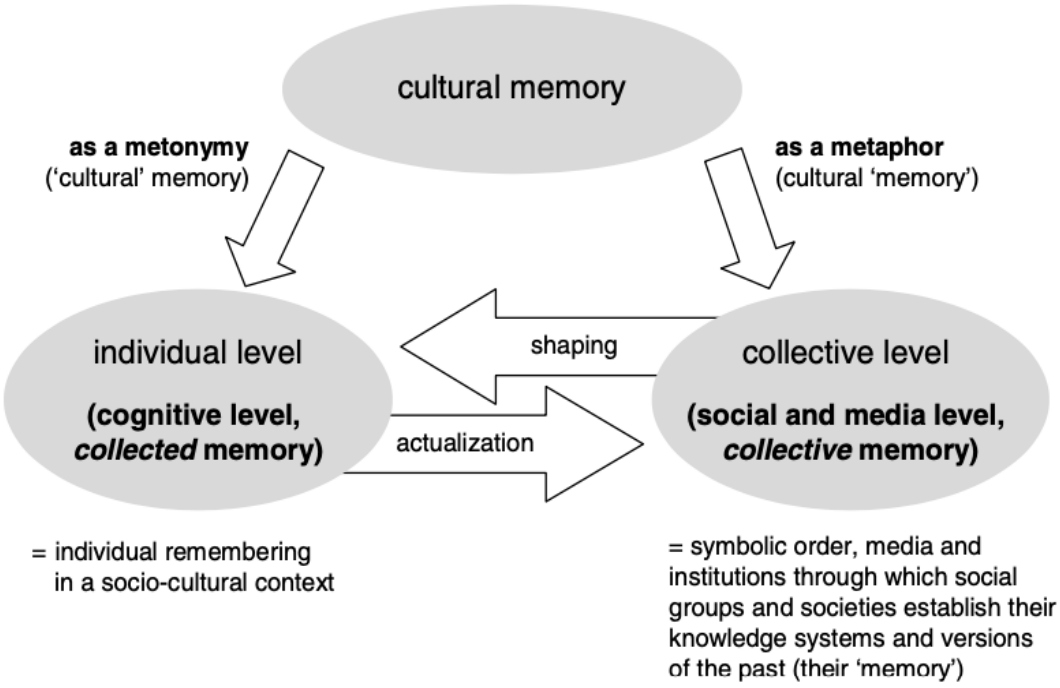

Figure 1: The two uses of the term 'cultural memory'. See Erll 2011a, 99.

metonymic use of 'cultural' (which stands for the influence of sociocultural contexts on individual memory). Olick terms this kind of memory 'collected memory' and defines it as the socially and/or culturally formed individual memory (Olick 1999). In other words, our individual minds are influenced by the sociocultural frameworks we are within. It is worth specifying that, just as for metaphorical use of 'cultural memory', the metonymic use of the term can be misleading if one uses it without sufficient awareness. To use it properly, one must be clear that here 'memory' has a "tropological dimension" (Erll 2011a, 101) that transfers the very meaning of memory with the intent to provide answer to specific research questions. In other words, one must be aware that here, 'memory' is being used figuratively, with consequent theoretical risks.

It is through such a distinction and interplay that 'cultural memory' lends itself as a particularly fruitful model to approach memory as the complex, multifaceted phenomenon it is. Memory scholars agree that at the same time there is no pre-cultural individual memory, and that collective memory cannot but be intertwined with the individual, as "between individual memory and collective memory the connection is intimate, immanent, [they] in-

terpenetrate one another" (Ricoeur 2004, 393). In other words, "just as the social environment and cultural schemata shape the individual memory, the 'memory' of a sociocultural formation must be actualized and realized in, or appropriated through, organic minds." (Erll 2011a, 98).

It is only by maintaining the two kinds of memory distinguished that one can thoroughly deal with their mutual influences. I will therefore define memory as the interaction of all the processes (social, medial, biological) involved in the interplay between past and present among sociocultural contexts, and shared by communities of individuals, i.e., by mnemonic communities that share a certain version of the past.[31] It is worth noting that the intertwining of the individual and the collective levels consists in a twofold movement of internalisation and externalisation ('shaping' and 'actualisation' respectively in fig. 2). I will be back on the matter in the next section.

To summarise, whilst we cannot but remember as individuals, we are de-facto influenced (if not constrained or 'determined') by the cultural memory framework of the different mnemonic communities we are members of[32] - this influence, or rather interplay, is the defining element of cultural memory as a concept (and this is why I have chosen to refer to cultural memory in a first place – to gather and intertwine remembering as an individual, cognitive phenomenon, and as a cultural one).

It is now worth returning to my focus on technology and virtual worlds, therefore absorbing the concepts and concepts provided so far into the theoretical and methodological framework provided during chapter 1.

2.3 Memory technologies.

According to several memory scholars, "cultural memory is *unthinkable* without media" (Erll 2011a, 113, my emphasis), as media play a crucial role on both the individual and the

[31] I may define 'mnemonic community' as 'the community that share a same memory' (for a more thorough definition of the term, see Irwin-Zarecka 1994; Zerubavel 1997; 2003). According to such a definition, 'imagined communities' are communities in which individuals are connected by the memory they share, and subsequently the knowledge, rules, and values they have in common (Anderson 1983). The same individual can be part of different mnemonic communities as the same time. According to Manier and Hirst, "fans of a sports team are one kind of community, members of a family are another, and people who lived in New York on 9/11 are a third. Moreover, one community (e.g., a set of fans) may remember the event differently from another community (e.g., fans of the opposing team)" (Manier & Hirst 2008, 257). This also explains how certain 'conflicted' memories belong to different social groups, regardless of their being about a same event or phenomenon.

[32] This reminds us of the concept of 'hermeneutic horizon', according to which every interpretation (and even every understanding) is influenced, if not determined, by the socio-cultural framework towards which the interpreter makes experience of a text (see 1.5).

collective levels of memory, as well as on their mutual interrelation (Cannadine 2004; De Groot 2009; Edgerton & Rollins 2001; Garde-Hansen 2011; Grainge 2003; Volkmer 2006). This may sound unsurprising from the perspective of postphenomenology: if human beings are always already co-constituted by technology, their memory cannot but be in turn inherently technological.

Cultural memory is unthinkable without technologies, as technologies allow us to externalise, share, transform, and negotiate the memory we have of our past. Most importantly, technologies seem to mediate between the individual and the collective levels of cultural memory. Organic memories can be shared only through technologies, not to mention the fact that even the most basic technologies (such as oral or written communication) are shaped by how we deal with our world as already co-shaped by technologies (what Heidegger termed 'enframing' (*Gestell*) - see Heidegger 1977, 20). Human beings as well as the worlds they experience are technologically mediated a priori: even private subjective memories are therefore (at least partially) influenced by how technologies construct our very way of being-in-the-world. The "inherent mediality of memory" (Erll 2011a, 114) Erll speaks about can therefore be understood as inherently technological: memory can only be observed and expressed as technologically mediated. As it may be evident, this also follows the very fact that human existence as a whole (and therefore memory as a human capacity) can be understood as technologically mediated, as seen in chapter 1.

At the individual level, mediation lies at the basis of the sociocultural shaping of organic memories. I can mention here "memory talk between a mother and her child, oral communication within a family, the significance of photographs for media-based (re-)constructions of our childhoods, the influence of mass media and its schemata on way we code life experience" (Erll 2011a, 113.). All these processes grant us access to a

> "[…] 'mediation' or 'mediatisation' of everyday life that shape who we are and how we think about ourselves at specific points in time […]. Therefore how I remember 'me' is mediated from the moment I am born (if not before, if we include obstetric cameras) and in different ways by different media formats which change over time" (Garde-Hansen 2011, 33)

At the collective level, even more evidently, the circulation and construction of shared versions of the past is only possible through media: from orality and literacy to monuments,

rituals, and to print, radio, television and the Internet (Erll 2011a, 113.). As a matter of fact, 'media mediate' memory (Garde-Hansen 2011, 38), as we can observe from images, sounds, written words, digital environments, and many other technologies. If mediality is "the very condition for the emergence of cultural memory" (Erll 2011a, 114) and affects even our dealing with individually recalled events of a personal past, then dealing with memory means also focusing on how memory gets mediated by technologies, both for individuals and communities.

Memory technologies 'mediate' memory in different ways. One of the main focuses of memory studies is how memory technologies mediate memory through representation: I will term these 'hermeneutic memory technologies' (see 3.1.3). Wertsch defines collective memory as 'textually mediated', i.e., "based on 'textual resources' provided by others – narratives that stand in, or mediate, between events and our understanding of them" (Werstch 2002, 5). Collective memory is always linked to the content conveyed by a text, and to how we interpret that content. Hermeneutically mediated memory only exists within certain hermeneutic horizons (I will be back on hermeneutics and memory later, in chapters 4 and 5).
As I have mentioned, cultural memory is constructed through the constant exchange between the two levels of individual memory, on one hand, and of collective memory on the other. It is such an exchange, i.e., this constant process of internalisation (of collective memory) and externalisation (of individual memory) that relies on mediation. By 'externalisation' I mean both the creation of memory objects (such as that of writing discussed by Socrates – the material dimension of memory), i.e., of a 'trace' of memory (Ruchatz 2008), and the mnemonic practices, be they rituals, commemorations, mourning, archiving, and so on (social dimension of memory). By 'internalisation' instead I point out all the individual accesses to shared versions of the past (collected memory) as well as their dependence from culturally constructed schemata or biases (mental dimension of memory, e.g., in body memory). By addressing hermeneutic memory technologies, scholars address how human beings externalise and internalise representations of the past that get negotiated, become shared, and produce novel, non-neutral interpretations of that past.

It is also important to consider how memory technologies actively shape how we remember regardless of the representations they provide, i.e., as embodied, background, and alterity technologies. Technologies of memory are usually interpreted as "not vessels of memory in which memory passively resides so much as objects through which memories

are shared, produced, and given meaning" (Sturken 1997, 9). This concern is in a way already present in the *Phaedrus*. Memory studies is almost always concerned with how technologies cannot be a neutral carrier of memory, but instead actively construct and re-shape our past by determining, influencing, and shaping our remembering – "technology is not neutral. Every use brings with it affect" (Irwin 2018, 185). This not only by considering how technologies provide non-neutral representations of the past but also how they actively affect how we remember, enabling new possibilities (as well as new constraints) for remembering.

As made evident by Plato, and as highlighted by authors such as Le Goff and Goody, even writing entails a shift in how we remember our past, as it actively shapes our capacity to remember as well as our way to recall past events. Whilst oral societies appear freer in remembering, more creative and dynamic, literary societies tend to exhibit a more reproductive and constrained way to remember (Goody 2000; Le Goff 1992 [1977]; see also Draaisma 2000). Accordingly, Rose claims that artificial memory diminishes human capacity to remember in unique and imaginative ways (Rose 1992, 61).

To trace a history of memory, several authors trace a history of memory technologies: from orality to writing, and from writing to photography at the end of the nineteenth century, and from filming to contemporary forms of electronic or digital memory (Le Goff 1992, 51-99; see also Draisma 2000). Memory studies acknowledges that memory depends on the available technologies of a society to the point at which it focuses on how changes in memory technologies entail changes in how memory is performed or conceived. Accordingly, every history of memory cannot but be a history of its technologies, that "embody and generate memory and are thus implicated in the power dynamics of memory's production" (Sturken 1997, 10). At the same time, as technologies of memory changed over the decades, so did related theories of memory (van Dijck 2010, 402; Van House & Churchill 2008).

As I will contend in the next chapter, virtual worlds are so experientially complex that they can be understood as engaging with memory in different ways, as alterity, hermeneutic, and embodied memory technologies. In any case, before dealing with this, it is necessary to acknowledge virtual worlds as digital technologies: contemporary memory studies are much concerned about the contemporary digital memory landscape, in which memory is nowadays produced, re-mediated, and enacted. To provide the reader with a deeper under-

standing of the specificities of digital memory technologies, therefore, it is worth considering the 'digital memory ecology' virtual worlds arise within.

2.4 Digital memory ecology.

Nowadays, memory is increasingly mediated by digital technologies, ranging from digital photographs, taken with digital cameras and mobile phones, web pages, text messages, digital archives, online museums and memorials, personal blogs and online forums, social networks, online podcasts and broadcasts, digital storytelling, passwords, digital games, and so on and so forth (Hansen et al. 2009, 4). Many of these technologies are also, based on the understanding of the term I have been providing during the first two chapters, virtual worlds. Many of the observations carried out within digital memory studies, therefore, provide meaningful insights into the matter at hand here.

Digital or computer-based technologies do not differ from analogic technologies for what concerns their memorial function. Just like previous non-digital technologies such as television or writing, digital technologies mediate (and therefore affect, alter, and shape) our relationship to the world, to others, to ourselves, and can be understood as shapers of memory.[33] Nonetheless, a few aspects distinguish digital technologies, as well as related socio-technical systems of production, from analogic ones, especially for what concerns memory.

First, digital technologies can simulate older technologies and absorb their specificities. Scholars such as Erll speak of 'remediation' and 'premediation' for this purpose (see Erll 2011a; Bolter & Grusin 1999),[34] whilst other media scholars define digital technologies as 'metamedia' (Manovich 2013). As pre-digital technologies are increasingly becoming digitalised, we can now speak of digital writing and books, digital maps, digital filming, we can play digital instruments, and so on and so forth. This can favour us conceptualising digital technologies as simulations with unprecedented complexity, consistency, and autonomy.[35] Virtual worlds, in this sense, simulate both past and other (both digital and analogic) memory technologies: in digital games, users engage with virtual historical events, virtual

[33] Garde-Hansen, Hoskins, and Reading contend that they engage with deferrals that characterise human beings since *homo sapiens*, from the denial of death and the will to overcome time-space limitations and the decay of the flesh (see Becker 1973) to the deferral of history as a linear process that leads to an ideal end (see Baudrillard 1994).

[34] I will deal with the concept later see footnote 86.

[35] Simulations existed far before digital technologies, but nonetheless their potential has always been limited by the extreme complexity that simulating a complex process entails (Frasca 2003b, 2).

diaries, virtual photographs. Once they get simulated, these processes get transformed, either simplified, enhanced, or constrained: users can re-make and re-enact virtual pasts, as well as access virtually infinite digital archives (such as virtual diaries without a page limit, as that in *Red Dead Redemption 2* (Rockstar Studios 2018). Yet both the simulations in question are constrained by the affordances virtual worlds have. It is therefore necessary to consider how virtual worlds, as digital technologies, remediate and simulate, and therefore transform and affect, previously existent ways of remembering and memory technologies. I will consider the concept of simulation, as pivotal for my definition of virtual worlds, in chapter 5.2.

Secondly, digital technologies entail an almost complete overlapping between communication and recording, registration, and keeping track (Romele & Terrone 2018a; Schwarz 2011). Romele suggests that "the 'new' of new technologies does not have much to do with information and communication, but rather with the exponential growth of the capacities of recording and keeping track [...] and hence memory [...]" (Romele 2020, 89). Technologies such as social media and the internet favour the collection, recording, and sharing of personal data or versions of collective pasts in an unprecedented way, and this has severe epistemological, anthropological, and ontological implications. As a matter of fact, registration and keeping track is increasingly growing, and changing the relation between remembering and forgetting, since remembering seems to be no longer the exception but rather the norm (users can always lose their data but the vast majority of recorded data remains available for much longer than a life-time period; see Mayer-Schönberger 2011; Lagerkvist 2019; 2017; van Dijck 2017): "digital technologies might seem to be changing memory by reversing the age-old default of human societies, which is to forget" (Garde-Hansen et al. 2009, 1). On those grounds, it is worth considering how virtual worlds and 'keeping track' are interconnected in many ways, and how virtual worlds keep track of users' memories in many ways.

A third aspect of digital technologies is their degree of autonomy compared to that of other analogic technologies. Autonomy is here intended as autonomous manipulation and recombination of what is recorded, generally afforded and observable by software, e.g., in learning algorithms or artificial intelligence. In social media, algorithms shape and regulate the social visibility of human beings (Bucher 2012; Pasquinelli 2009) as well as the visibility of their past, i.e., their memory. Such algorithms can make memories emerge without human will. This led some memory scholars to think of digital memory as an autono-

mous quasi-human neighbour: "as we leave behind ever more digital traces, stored in databases that refuse to order them, their docile thingness diminishes. As they meet us by surprise and walk through the walls of our homes, the metaphor of neighbourliness may offer a sounder foundation to conceptualize the future of the past" (Schwarz 2014, 18). As digital technologies, virtual worlds also 'remember' on behalf of human beings, despite human beings, and autonomously. At times, within virtual worlds we face memories we forgot to have, or past choices we forgot we made.

From these three aspects of digital memory technologies there arises what several scholars define as 'a new (digitised) ecology of memory'[36]. Such a contemporary landscape is characterised by a quantitative as well as qualitative shift compared to previous non-digital memory media ecologies.

- *Quantitative*, as it is defined by an increasing externalisation and objectification of human memory. As a consequence of the inherent overlap between communication and keeping track of computer-based technologies mentioned above, the externalisation and construction of 'external memory' such as that questioned by Plato in the *Phaedrus* "has expanded dramatically as a result of the exponential increase in the number of digital traces and memory-artefacts that contemporary people produce" (Schwarz 2014, 11). This in turn leads to a much more intense consumption of externalised memories that get consulted more often, e.g., through social media.
- *Qualitative*, as the status of external memory objects has itself changed. As a consequence of the relative autonomy of the software, the encounter with memories as mediated, favoured or created by digital memory technology cannot be fully predicted or manipulated. In other words, the logic of the digital database and related algorithms emphasise the stepping into memories as something surprising, at times astonishing or unwanted, that emerges from a 'technological unconscious' (Beer 2009; Hoskins 2009). This is also related to the very fact that recorded data, or digital memory objects, do not have a single spatial location like other actual objects

[36] The ecological approach here is aimed at emphasising the constructed dimension of memory. Drawing upon media ecology studies, "[A]n ecological approach steps back for a view of the whole, to make claims about the sum of the parts. So, rather than hiving 'memory' off into distinct and separate zones or even 'containers' – the body, the brain, the social, the cultural etcetera – an ecological approach is interested in how these together work or don't work in producing memory. Put differently, remembering is not reducible to any one part, but is made through an ongoing interaction between all the parts […]. Media ecology is then the idea that media technologies can be understood and studied like organic life-forms, as existing in a complex set of interrelationships within a specific balanced environment. Technological developments, it is argued, change all these interrelationships, transforming the existing balance and thus potentially impacting upon the entire 'ecology'" (Hoskins 2011, 24).

(Mayer-Schönberger 2009, 72–79). Data-objects are adjacent to each other due to the algorithm or software used to retrieve them and cannot be stored in a single physical space such as a cellar, or a box, or a physical archive (idem).

Digital memory objects are more present, more pervasive, and more autonomous than previous forms of memory externalisations. The same applies for the practices they entail as well as for the related sociotechnical systems of production, use, and reception.

Now that I have introduced memory and memory technologies, and the shift that digital technologies entail within the contemporary memory ecology, it is worth looking at how virtual worlds, as experiences that arise from digital technologies, mediate memory. To do that, and to lay the foundations of the rest of the present thesis, I will intertwine the excursus on memory studies of this chapter and the definition of virtual worlds given in the first one.

Chapter 3. Virtual worlds as memory technologies.

Since human memory is fallible, degradable, and distorted, technologies have always supplemented it as well as replaced it, extending the organic limitations of human beings (Garde-Hansen et al. 2009, 11). Technologies do not simply supplement, replace, and extend, rather they, by actively co-constituting human beings, co-constitute how human beings remember as well. As we have seen during chapter 1, and according to philosophers such as Ihde or Verbeek, potentially all human perceptions and actions are already mediated by technological devices since human beings have always been co-constituted by technologies. Mediation precedes the experience of the world and of technology itself, as both humans and technologies are products of it. In a way, we have always been cyborgs in the sense that we have always been hybrids, defined, affected, and influenced by both our biological limitations and our artificial extensions (Haraway 1991). Therefore, it is reasonable to contend that memory has always been mediated, and therefore technological.

Despite this, the contemporary digital ecology of memory (as we have seen) entails both a qualitative and a quantitative shift towards pervasiveness, consumption, and automation. For this reason, claims that may sound sensationalistic such "as our lives have become increasingly digitised, so digital memories become us" (Garde-Hansen et al. 2009, 1) seem to be entirely not out of the question.
I will now complement this initial overview on memory and vitual worlds by framing what claimed so far towards my postphenomenological perspective. This will also allow me to map different relationships between memory and virtual worlds that I will later explore into detail over the rest of this thesis.

Throughout the following sections, I will provide a methodological framework to examine how virtual worlds mediate memory from the hermeneutic and existential perspectives (see 1.4). Such a framework is inspired by postphenomenology and draws upon the so-called mediation theory provided by Ihde and discussed by Verbeek. In 3.1 and the following sections, I approach virtual worlds as either alterity (3.1.1), embodied (3.2.1), or hermeneutic (3.1.3) memory technologies. In 3.2, I provide a first overview of how different types of memory can be found (and experiences) in virtual worlds, overview that will be extended and problematised in the following chapters.

3.1 Remembering towards mediation theory.

Mediation theory describes and formalises different kinds of relations between human beings and technologies. In the schematisations that follow, I readapt mediation theory to describe how we remember through, within, and towards virtual worlds.

I will replace the 'intentionality' arrow (→) present in the original version of mediation theory with (⇢) to refer to a specific kind of intentionality or directedness,[37] i.e., remembering.

The schematisations are to be intended as having a double meaning. Since they are inspired by postphenomenology, they are aimed at addressing subjective and phenomenological experiences. Nonetheless, based on the cultural memory framework sketched so far, I suggest reading them as addressing both individual, organic remembering, and collective, culturally framed remembering. As seen, technologies do not only co-constitute human beings intended as phenomenological subjects, but even human beings intended as members of communities, affecting them through their culturally framed biases of interpretation and behaviour. Therefore, by using these conceptualisations, I am not implying that organic, pre-cultural individual remembering is impossible (i.e., pain memory) but rather that it is impossible to think of cultural memory devoid of technological mediation, since our memories are always influenced by cultural frameworks at both the individual and collective level, and such influence is dependent on memory technologies. At the same time, by juxtaposing remembering and intentionality, I also want to point out that remembering is also a relationship of mutual co-constitution between what is remembered, how it is remembered, and the subject that is remembering. In other words, just as for every subject-world relation, I would like to imply that remembering does not entail a 'subject-itself' and a 'remembered-object-itself' but rather always two interdependent and co-constituting entities that arise from their mutual relation. Another thing I want to clarify before proceeding is that the subsequent schematisations are to be intended as a-posteriori operational distinction, and not categories of experience. In other words, we can only acknowledge the differences of these different ways to remember once something is remembered, and by adopting an external perspective.

[37] See 1.4.

Once I have specified these aspects, I can move forward and provide different schemes of remembering towards virtual worlds, inspired by mediation theory and postphenomenology.

In the following sections, I will lay the theoretical framework for the rest of the thesis and map several ways in which technologies, and virtual worlds in particular, can engage with memory. In each of the following sections, I will first use mediation theory to map how human beings remember through technologies, providing some schematisations to describe human remembering as mediated. Then, I will use such schematisations to refer to virtual worlds in particular.

In doing so, rather than providing a full-fledged theoretically stable revised version of mediation theory, I will introduce an operational framework aimed at considering something that the original theory apparently lacks, i.e., the possibility to deal with different kinds of worlds that do not emerge from the engagement with the 'base reality' of our biological experiences. Postphenomenology and mediation theory tend to exclude the possibility of dealing with other kinds of worlds, and therefore do not apply mediation theory to virtual worlds, due to the primary broadness or ambiguity of their understanding of 'world' as a concept, and due to their lack of interest in meaning, fictionality, and textual interpretation outside of the range of material hermeneutics. My suggestion here is that of focusing not on how humans are intrinsically enmeshed with technologies that are themselves directed to the world, but on how technologies[38] can provide access to environments that, when engaged, can themselves be experienced as worlds. I will provide my applied version of mediation theory by introducing a distinction between different worldly experiences and technologies, and by suggesting amendments and specifications to the 'classic' mediation theory.

[38] It is also worth specifying that my understanding of technology, as claimed at 1.4, is slightly different from that provided by Ihde within his mediation theory. As Verbeek too emphasises, Ihde is here limiting the definition of 'technology' to 'technology as artefacts'. Such a limitation is consistent with the traditional phenomenological idea of intentionality. Unmediated human-world relationships, by following Ihde, are therefore unmediated-by-artefacts relationships, and he does not deal with such 'naked' relationships. By adopting a broader understanding of technology, I would like to align with a more radical perspective and claim that such relationships are not only outside of the range of the present inquiry, but most importantly that they are 'inaccessible by definition' (Verbeek 2008, 388-389). Not only "all perceptions are in a certain sense mediated, because human beings have access to the world only via interpretation" (Verbeek 2005b, 125) but, most importantly, all perceptions are in a certain sense mediated by technology, because human beings have access to the world only within the technological horizon in which they are co-constituted (by technological artefacts, technological mindsets, technological sociotechnical systems of use, production, and knowledge).

3.1.1 Remembering virtual worlds.

A first kind of remembering that it is worth defining through mediation theory is inspired by 'alterity relations', and I find it necessary to describe it before the others since it will be to a degree implied within all the following ones. In these kinds of relations, world "may remain context and background, and the technology may emerge as the foreground and focal quasi-other with which I momentarily engage" (Ihde 1990, 107). To deal with virtual worlds does not mean to imply that such worlds could be perceived as 'actual' by their users. When we experience a virtual world, we are always conscious that we are engaging with a technological artefact, a technologically generated environment, and so on and so forth. According to Philip Brey (1999) and Olli Tapio Leino (2010, 163-185), we may understand all virtual worlds as 'alterity technologies'.

Since we are always aware of the fact that virtual events are virtual,[39] I will schematise human-virtual-events relations alternatively as: background relations in which the actual world is in the background of the experience; and as background relations in which the virtual world is in the background of experience. This depends on what we remember as we recall past experience. Digital games make this doubleness pretty observable: I can remember talking with a virtual character either as a virtual experience (deciding what to say depending on the context of the game, feeling attachment, and so on) or as an actual experience (pressing buttons, drinking actual water while in front of the screen, and so on):

Remembering virtual events, leaving the actual world in the background.

human ⇢ virtual world (– actual world)

Remembering actual events, leaving the virtual world in the background.

human ⇢ actual world (– virtual world)

In both, '(- actual/virtual world)' describes the above-mentioned backgroundness of the respective experiential domains. Alterity relations imply that humans in a way momentarily replace the actual world with the virtual world as their perceptual horizon, and act within the latter by leaving the former to the background of their experience (see also Verbeek 2008, 389), or vice versa. This kind of experience lies at the very basis of the definition of

[39] That is, both fictional (implying fictional relationships, interpretation, meaning, and imagination) and real (implying real digital data, bits, and environments), see Chalmers 2017; 1.6.

virtual world I provided so far and is what is called 'immersion' within virtual reality studies (see, e.g., Chalmers 2017; Vindenes & Wasson 2021). Brey observes that

> "[T]he structure [of virtual worlds] is so rich that within the context of this alterity relation, we can establish more specific alterity relations with substructures of the environment, as well as embodiment, hermeneutical, and background relations with yet other substructures" (Brey 1999, 101).

The following schematisations I will provide will therefore omit '(– actual world)' at the end only for brevity, and not to suggest that remembering virtual worlds replaces the remembered experiences from the 'base reality' of our actual remembered experiences.

3.1.2 Remembering (virtual worlds) as cyborgs.

Within mediation theory, embodiment relations describe how human beings broaden the area of sensitivity of their bodies to the world through technology.[40] By using eyeglasses to see the world, for example, human beings do not look at the eyeglasses but rather, through them, at the world. Embodied technologies therefore possess "a certain transparency [and] call attention not to themselves, but to (aspects of) the world given through them" (Verbeek 2005b, 126). Embodiment relations can be understood as describing how human beings and technologies may be enmeshed in hybrid, cyborg beings.

In this case, as highlighted by prosthetic memory, remembering cannot be conceived as 'entirely human' due to an intimate human-technology association:

(human/technology) ⇢ world

As cyborgs, when we remember something, we tend to focus on what we do remember instead of the technologies that allow us to remember. It is what is remembered that is there-

[40] With 'embodiment relations' I also refer to those relations in which technologies are merged with human beings. Verbeek calls them 'cyborg relations' to put emphasis on the fact that the intentionality that links human beings to the world, in cases where distinguishing humans and technologies is not as easy as it could seem according to Ihde. Though all embodiment relations involve an intentionality that is not 'entirely human' ("the specific ways in which humans are directed at each other through a mobile phone, or hear through a hearing aid, can only exist by virtue of an intimate human-technology association" (Verbeek 2008, 391)), an at least minimal distinction can still be made here between the human and the technology through which it is experiencing the world. This distinction is evident in Ihde, and still gets the center of the stage when Verbeek borrows his mediation theory in *What Things Do* (2005b). The case of cyborgs is different as they are 'a new experiencing entity' in which humans and technologies are one and the same thing, and therefore possess a hybrid subject-object intentionality.

fore brought to the foreground. This schematisation of remembering towards mediation theory addresses, e.g., both connective memory (in which technologies autonomously affect remembering) and prosthetic memory.

Virtual worlds disclose two different versions of such a schematisation. On the one hand, humans can remember virtual experiences through actual embodied technologies: the most obvious case of this can be provided by VR games that make players revive certain flashbacks or events within the gameworld. In those cases, actual technologies (visors, controllers) are enmeshed with human bodies as they remember something virtual:

Remembering virtual events through actual embodied technologies
(human/actual technology) ⇢ virtual world

On the other hand, differently from other technologies, virtual worlds can favour the embodiment in virtual subjects, i.e., avatars, who may remember together with their users. In these cases, it is important to consider not only the technological embodiment allowed by controls and hardware, but also and most importantly, the fictional aspects of immersion and remembering as someone else, within a fictional world. Humans remember virtual events constrained by their virtual subjects' memory deficiencies, amnesias, or special powers. In these cases, the embodiment is itself something happening within the virtual world and towards a virtual body, or identity, as in virtual embodiment relations:

Remembering virtual events through actual embodied technologies.
(human/virtual technology) ⇢ virtual world

3.1.3 Remembering through (virtual worlds as) hermeneutic technologies.

In hermeneutic relations, technology is not transparent and does not withdraw from human relations to the world. Instead, it provides a representation of the world that implies interpretation by human beings. Ihde makes the example of a thermometer, which allows human beings, through reading and interpretation, to engage with a technological representation of a certain aspect of reality (Ihde 1990, 80-97). Hermeneutic relations involve technologically generated representations of the world, and are therefore 'textual', as they

imply technological reference, representation, and ultimately human interpretation (idem, 81-82).[41]

Of course, humans can remember the world as it is represented by technologies. This is the case, e.g., of photos, video recordings, archived messages, or in general of every kind of memory object or externalisation, be it digital or not. As is the case for writing in the *Phaedrus*, memory technologies tend themselves to 'remember' certain aspects of reality and to exclude others: think of how, e.g., a photograph taken during an event can keep trace of some aspects of that event due to specific hardware limitations or characteristics, such as its capacity to capture brightness or movements, its definition, and so on. In a sense, then, remembering something can also be mediated by technology on the side of what is remembered. This second kind of technological mediation can be schematised according to mediation theory as a specific subset of hermeneutic relations, in which humans remember the world only after some of its aspects have been recorded, fixed, or already remembered by other technologies beforehand:

human ⇢ (technology ⇢ world)

Here as well, considering virtual worlds requires us to split in two such a relation. First, virtual worlds can be used to remember actual events, i.e., events that happened in the actual world we inhabit as biological creatures. In this case, virtual worlds can be seen as hermeneutic technologies, interpreting the actual world before we do, and demanding further interpretation:

Remembering through virtual worlds as hermeneutic technologies.

human ⇢ (virtual world ⇢ actual world)

Examples of this are historical virtual worlds, e.g., historical digital games, which allow users to act within and towards virtual simulations of historical pasts, or more broadly what I will term 'virtual sites of memory' in chapters 4-5. I will analyse this relation carefully and

[41] I will include within hermeneutic relations also those that Verbeek terms 'composite relations'. In composite relations, technological intentionality is not merely directed "at actually representing a phenomenon in the world" (Verbeek 2008, 393) but is directed toward 'its' own world (ibid.). Not every technological intentionality is directed at representing a phenomenon in the world. Some technologies construct their own reality (Verbeek provides the example of "radio telescopes that produce a visible image of a star on the basis of 'seeing' radiation which is not visible to the human eye" (idem, 393). Composite relations, in other words, describe "the addition of human intentionality and the intentionality of technological artefacts" (idem, 388).

in depth, since it is worth addressing what it implies from a hermeneutic perspective, and what it means for a virtual world to 'interpret' and 'remember' both non-virtual, already-mediated, and even other medial pasts.

Of course, variations of this schematisation do exist but Iwill not consider through this thesis. Those are hermeneutic relations that entail actual technologies, such as recalling a virtual experience by taking notes in an actual diary, or taking actual photographs of users playing a digital game:

Remembering virtual events via actual hermeneutic technologies.
human ⇢ (actual technology ⇢ virtual world)

Or using virtual diaries or virtual photographs to recall virtual experiences:

Remembering virtual events via virtual hermeneutic technologies.
human ⇢ (virtual technology ⇢ virtual world)

In both cases, what is remembered of virtual experiences or events is already interpreted (hermeneutically) by the technologies in use, themselves directed (or rather 'remembering') to certain aspects of the virtual world according to their limitations. It would be interesting to evaluate which constraints and limitations distinguish, e.g., an actual diary from a virtual one for what concerns their use as memory technologies.

The kind of human-technology-world relation that I will not include in this adaptation of mediation theory towards memory is background relation. Background relations aim at describing technologies that shape the context for human experiences. In this case, since memory technologies are always enmeshed with human beings once they remember through them, I find it of no use to address this category. Remembering through technologies, in other words, can be understood as a macro-category of which 'remembering towards background technologies' is nothing but a subset.

The operational set of relations outlined so far, inspired by mediation theory, will allow me to highlight different dimensions of virtual worlds: of technologies, intended as *terminus* of our experience; and of both digital and fictional worlds. All the schematisations provided above allow us to approach different relations humans, technologies, and virtual worlds

in particular can have towards remembering. Most importantly, they allow us to approach technological mediation as something at the same time material (as for the original post-phenomenological mediation theory) and hermeneutic (as for cultural memory theory); both subjective and collective (being that we remember individually, as subjects in a phenomenological sense, but towards a broader frame of collective remembering); and at the same time organic and inorganic, as defined by the intentionality of both human and technologies, intertwined.

Once that is stated, we can move further to the analysis of different types of memory within virtual worlds. This will allow me to conclude this first introductory part of the thesis by providing a taxonomy of how several types of memory get experienced within virtual worlds as well – not unlike how we enact different types of memory within the actual world. Such a taxonomy will demonstrate both how virtual world experiences are imbued with memory at different levels and how many virtual phenomena can be fruitfully addressed from the perspective of memory studies, therefore allowing me to suggest new scholarly directions and approaches concerning virtual world research and game studies before moving onto the analysis of different human-virtual-world relations that will occupy the rest of this dissertation.

3.2 Types of memory within virtual worlds.

After having introduced, during chapter 2, memory as a discursive construct gathering both individual, and collective remembering, I will now provide a brief taxonomy of how we can make experience of different types of memory within virtual worlds. As will be clearer as follows, the taxonomy I will provide within this and the following sections will be complemented, problematised, and furtherly addressed later over the course of this thesis. For now, I shall limit myself to provisionally look for the most discussed types of memory within virtual worlds.

3.2.1 Individual memory.

According to cognitive psychologists, the difference between individual-explicit and individual-implicit memory (see also that between [individual-]declarative and [individual-]nondeclarative memory, in Michaelian 2010) lies in how conscious the recollection is: individual-explicit memory requires a conscious experience of remembering, individual-implicit memory does not. Most importantly, "[…] these two types of memory […] are dissociated from each other, both at the psychological and neurological level" (Manier & Hirst

2008, 255), and therefore describe two different faculties gathered under the same discursive construct 'memory'.

Individual-episodic, -semantic, and -autobiographical memory entail a conscious recollection by the remembering subject. To summarise, individual-episodic memory or 'chronostesia' (Tulving 2002; see also Conway 2009; Tulving 1983, 2010; Schacter et al. 2009; Squire 2004) refers to our capacity of remembering events and episodes from our past. Individual-semantic memory refers instead to 'knowing', or rather to the capacity of remembering general world knowledge (concept, ideas, facts, meanings; see Squire 2004; Tulving 1972; Tulving & Schacter 1990; Saumier & Chertkow 2002). Autobiographical memory refers to event-specific knowledge framed towards general event, themselves framed towards lifetime periods. These three broad areas (event-specific knowledge, general events, and lifetime periods) constitute the so-called 'autobiographical memory base', which consists in the framing of episodic memory towards a broader and narrativised, dynamic idea of the self (Conway 2005, 2009; Conway et al. 2004; Conway & Playdell-Pearce 2000; Piolino et al. 2006; Robinson 1992; Squire 2004).

All these kinds of memory are involved in our experience of virtual worlds as well. It is necessary to carefully problematise how remembering virtual events entails intertwining memories of fictional, virtual, and actual events, and I will deal with this in chapter 6. Nonetheless, at least provisionally, we will think of individual memory towards virtual worlds as remembering events that happened within them (individual-episodic memory); states of things that are true within certain virtual worlds - and maybe false in others (individual-semantic memory); and the constant intertwining between the two. When we engage with virtual worlds, we usually develop alternative virtual biographies within and towards them, therefore enacting also individual-autobiographical memory. Individual-autobiographical memory within virtual worlds implies remembering who we have been within (and towards) them, and therefore remembering episodes and experiences we have been engaging with. These ideas will be developed and problematised further in chapter 6.

As for individual-implicit(/nondeclarative) memory, I may refer to the concept of body memory, which lies at the basis of actions that happen without the deliberation of the sub-

ject.[42] For a general definition of body memory, I will follow Fuchs and refer to "the totality of [...] bodily capacities, habits, and dispositions as they have developed in the course of one's life" (Fuchs 2012, 10), ranging from "the upright gait, the abilities to speak, read, or write, and the handling of instruments such as a bicycle, a keyboard, or a piano" (ibid.), i.e., the non-propositional, non-representational, and non-declarative capacity of acquiring skills, learning and re-enacting procedures, and developing habits. Among various types of body memory, all "not strictly separable from each other, but [...] derived from different dimension of bodily experience – an experience that nevertheless is a unitary 'being-towards-the-world'" (Fuchs 2012, 12; see also Fuchs 2011), I may mention procedural memory, or 'habitual memory', which refers to "the habitualisation of the sensomotor capacities of the lived body" (Koch et al. 2014, 275), achieved through repeated exercise, until one "does not know anymore how one does what one does" (Fuchs 2012, 12); situational memory, or 'spatial memory', which refers instead to how we remember spaces we find ourselves in, from our dwellings to our neighbourhood, as well as to different situations such as a football match, playing a game, and so on;[43] intercorporeal memory, which refers to patterns of interaction with others, i.e., 'schemes of being-with-another' (Stern 1995), that result in an 'implicit relational knowing' (idem) of how to interact with bodies of others in certain situations; and lastly incorporative memory, which addresses "a set of socially learned dispositions, skills, styles, tastes, and ways of acting, which are often taken for granted or 'go without saying,' and which are acquired through the activities and experiences of everyday life" (Fuchs 2012, 16).[44]

[42] Though we can observe body memory for what concerns subjective experience devoid of sociocultural implications, and therefore choosing to exclude cultural aspects of implicit remembering, it is worth noting that claiming that body memory prescinds from cultural memory is problematic as well. As observed by Manier and Hirst (2008), it is hard to distinguish between a procedure that one learns from personal experience and a procedure that is learned towards, or within, sociocultural practices. In other words, even within body memory studies it is hard to claim that something as a 'pre-cultural' body memory does exist without a degree of theoretical and analytical simplification: "[…] as persons, we are always embedded in a natural, cultural, and intersubjective life-world. Accordingly, body memory has structural and universal components, culturally mediated and strictly individual ones" (Koch et al. 2014, 273).

[43] Like the other kinds of body memory, situational/spatial memory cannot be pre-cultural since both spatial frameworks and situational contexts of memory (ibid.) are produced by and within socio-cultural contexts. Both the places we inhabit and the different situations we choose to step into are expressed as well as mediated by culture. They also themselves express, culture, inasmuch as both the football match and the neighbourhood mentioned by Fuchs are examples that exist only towards a broader sociocultural system.

[44] For Fuchs, incorporative memory lies then at the basis of what is called 'habitus' within sociology, i.e., the ensemble of all those "[…] systems of durable, transposable dispositions, structured structures predisposed to function as structuring structures, that is, as principles which generate and organize practices and representations that can be objectively adapted to their outcomes without presupposing a conscious aiming at ends or an express mastery of the operations necessary in order to attain them" (Bourdieu 1990, 53).

All these forms of memory constitute a continuum in our daily experience in the actual world. At the same time, they are also at play when we engage with virtual worlds. Individual-implicit memory is entailed in how we act within and towards virtual worlds and lies at the basis of how we memorise certain processes and actions that we later perform without deliberation.

Procedural memory, for example, resonates with the concept of 'embodied literacies', introduced by Brendan Keogh to describe the bodily procedural engagement of users within virtual worlds through controllers, keyboards, and so on (Keogh 2018, 77). As a matter of fact, whenever users engage with a virtual world they do so by interacting with technologies that require literacy to be used in a proper way, and they increasingly learn to use and to master. Suffice it to think about how users of different technologies develop their mastery with certain commands and not others, e.g., becoming skilful in using a keyboard and not a controller when playing a first-person shooter game.

Body memory also plays a role in our feeling immersed in virtual worlds – Calleja speaks in terms of 'incorporation' to point out "the absorption of a virtual environment into consciousness, yielding a sense of habitation, which is supported by the systemically upheld embodiment of the player in a single location, as represented by the avatar" (Calleja 2011, 169). Introducing body memory into the theory of incorporation would take me far from the matter in hand, and this is why I shall limit myself to suggesting such a possibility, which will eventually become one of the further avenues of this research (see also chapter 9).

As mentioned in the previous chapter, memory arises from the mutual exchanges between the individual and the collective dimensions. It is therefore worth mapping different types of collective memory within virtual worlds as well.

3.2.2 Collective memory.

To deal with collective memory, I will use Manier and Hirst's taxonomy and look at how "the distinctive structures of human individual memory may be reflected in the varieties of collective memories" (Manier & Hirst 2008, 254). This is not but another "metaphorical transfer of memory systems distinguished with a view to individual remembering to the level of the social and medial [that] cannot be rendered in absolute terms and must be taken with a grain of salt" (Erll 2011a, 105). Nonetheless, I choose to use it operationally, for analytical purposes and clarity, because as Erll puts it "this allows for the multitude of heterogeneous acts of collective remembering to be more clearly differentiated" (ibid.).

At the same time, it is worth noting that with regards to the aforementioned metaphorical transfer, no collective memory exists without an actualisation at the individual level (idem, 107). This process of mutual influence is already present in the analysis of one of the most influent forerunners of cultural memory studies, and lies at the basis of the entire subfield. From Halbwachs, we read that

> "One may say that the individual remembers by placing himself in the perspective of the group, but one may also affirm that the memory of the group realizes and manifests itself in individual memories" (Halbwachs 1992[1941], 40).

That being said, I will distinguish between three major kinds of collective memory: collective-episodic memory, which refers to the memory that the members of a remembering community share about their past (and which eventually get narrativised, e.g., in commemorations – see Erll 2011a, 105-106; Manier & Hirst 2008, 257-258); collective-semantic memory, which refers to facts and things that people recall without necessarily remembering where they learned them (here more than elsewhere, collective- and individual-semantic memory overlap, or rather describe two sides of a same phenomenon);[45] and collective-procedural memory, which stands for the capacity of mnemonic communities to follow traditions or rituals without even knowing that they are learned and view their own behaviour as natural, even if it expresses awareness of the past.[46]

These types of memory are observable in virtual worlds as well, and especially across communities of users of a same virtual world.

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[45] Manier and Hirst make the example of the Vietnam War for the American community: "The manner in which we, as individuals, and perhaps more importantly, as members of the American community, remember the Viet Nam War instils in us a personal and communal sense of responsibility, for example, a sense of collective shame about the conduct of the war. Especially when we travel abroad, we carry this with us, the weight of our nation's bungled and sometimes disastrous foreign policies: We carry this history as an inescapable part of our collective identity as Americans" (Manier & Hirst 2008, 258).

[46] Manier and Hirst make the example of the Mass (as a procedure) that I find useful to clarify what the field of enquiry for a collective-procedural memory scholar is: "Some Roman Catholic parishioners may follow the procedure of the Mass without any explicit memory of what each movement symbolizes or where they learned the ritual. They know how to celebrate Mass, but they surely do not need to know that the Mass as it is celebrated today has its roots in the Council of Trent, beginning in 1545. […] The celebration of Mass is intended to remind parishioners of Jesus's crucifixion. The actions entailed in a ritual or procedural memory can also create a collective feeling or attitude. The act of genuflecting creates a feeling of submission and reverence […]. The movements mandated in the Mass may arise from procedural (not declarative) memories, but the result of carrying out these procedures can create the feelings that the Mass is meant to invoke" (Manier & Hirst 2008, 258).

As demonstrated by Papargyris and Poulymenakou, communities of online persistent virtual worlds value as collective memory either documented historical narratives regarding virtual events, such as "past joint PvP operations, elections for a new leadership scheme, and important decisions made during community meetings" (Papargyris & Poulymenakou, 2008, 19) or "individualised actions" that affect the collective identity of the community, such as "attitudes, emotions, and episodes of communicative behaviors especially during conflict reconciling discussions" (ibid.) – both afferent to what I may term 'collective-episodic memory within virtual worlds'; as well as negotiated mental schemes and repertories of ideas, which constitute a shared knowledge base concerning, e.g., the features of the virtual world in question, the affordances provided to users, and so on and so forth, and "possible future actions and trajectories, learning curriculums of new players, and strategic plans, as well as norms and rules that serve as factors of legitimacy of collective action" (ibid. – i.e., collective-semantic memory within virtual worlds).
According to my definition of virtual worlds, I may notice that such phenomena of collective memory can also be observed towards non-persistently-shared virtual worlds, from text editors to single-player digital games. Most users within the mnemonic community of the Japanese role-playing game *Final Fantasy VII* (Square, 1997), for example, will remember the death of Aerith, one of the main characters of the game, as well as the loss of her healing powers in terms of impact on the gameplay (collective-episodic memory); as well as they will know what Mako and Shinra (two pivotal entities within the game lore) are and how they function (collective-semantic memory). At the same time, players from this same community may have learned patterns, procedures, and control schemes, e.g., pressing 'x' to cancel and 'o' to interact (Japanese control scheme) that will eventually re-enact without deliberation, e.g., interacting instead of cancelling when playing a game featuring a different control scheme.

A more thorough and closer look at both individual and collective types of memory within virtual worlds would take this provisional taxonomy far from the matter in hand. For now, I shall limit this overview to these broad definitions and examples, with the intent of further analysing (and problematising, and unpacking) each mentioned virtual-world-memory relation mentioned over the rest of this thesis.

Beside these types of memory, there are two further concepts of memory that recent memory studies emphasise and that will prove more than relevant for virtual worlds: connective and prosthetic memory. These two further types of memory, strictly related to the

'new digitised memory ecology', allow me to notice how recent technologies favour the emergence of novel modes of remembering, even more evidently technologically mediated then the others.
Connective memory and prosthetic memory do not belong to humans: they belong to humans as well as to technologies they use. As a consequence, these two concepts will be of primary importance for the development of the present thesis, in defining contemporary memory as something that is not only technologically mediated or transformed but, most importantly, as something inherently technological. Virtual worlds, as I will contend, feature such kinds of memory as well.

3.2.3 Connective memory.

'Connective memory' points to forms of contemporary digitised memories that are increasingly shared, therefore blurring the distinction between the individual and collective. Digitised memories are produced, constructed, and circulating also through algorithms, and therefore by means of technologies intended as autonomous actors of a broader network of relations.

The so-called 'connective turn' in recent memory studies aims at dismissing collective memory as a conceptual gateway, and therefore at understanding 'connective' as an antipode to 'collective' (Hoskins 2009; 2018; van Dijck 2010, 403-404). To rethink memory in terms of connectivity means to understand it not by following an anthropocentric approach but rather a sociotechnical one, "which is needed to comprehensively assess digital practices in a networked environment" (ibid.). Nowadays, memory arises from networked platforms and the relations they shape, and challenges the traditional memory studies 'bipolar distinction' of time/space as well as individual/collective: connective memory is generated by the dynamic of connection itself, and that places it "in the current flow of contacts between people and machines" (idem, 404).
Within this flow, remembering is neither individual nor collective, as it gets configured by "the connective work performed on the basis of uploaded [or recorded] data" (idem, 411). Such connective work can be performed by both humans and technologies, such as algorithms or other autonomous software. Photo sharing sites, for example, are sociotechnologically mediated practices of memory that entail connectivity; at the same time, connectivity is the very pre-condition of such practices (see also Bowker 2008; Galloway 2004). Most importantly, they emerge as a part of cultural memory by being neither individual nor collective (since they are shared and connective, and give raise to hybrid forms of re-

membering that are far different from those of traditional archives); they are neither human nor technological (since they are shared by humans but by means of algorithms, and on the basis of metadata or technologies humans cannot control or understand); and neither past nor present, since they give raise to what José van Dijck terms "a permanent stream of [...] 'present'" (van Dijck 2010, 402; see also van Dijck 2017).

Virtual worlds take part in the contemporary culture of connectivity and can be themselves understood as 'connective technologies', suffice it to think of social media. Recent digital games usually feature social media interactions between players; their achievements, their goals, and their discoveries, are already framed towards networks that favour sharing of experiences between users. Digital games are increasingly framed towards digital networks that enhance, favour, and emphasise sharing personal experiences within communities of players. After having purchased a digital game from a digital platform, users see their progress automatically shared, gameplay videos recorded, ready to be shared with other members of the community, and so on and so forth.
Asynchronous multiplayer games like *Dark Souls* (Miyazaki 2011) and *Death Stranding* (Kojima 2019) allow users to interact only through connective memory – users leave traces, messages, and actions that the game redirects, randomly, to other users, and at the same time users see the virtual world they inhabit as they play constantly traversed by the ghosts other users leave of their passage, their experiences, their warnings (i.e., their memories, that the game system saves and redirects to other virtual worlds). Playing digital games, both multiplayer and single player, has increasingly become a shared experience consisting in the production and sharing of connective memories.

Throughout this thesis, I will not consider the implications connective virtual memory may have on virtual world users. I shall limit myself to highlighting how our memory, within virtual worlds, is increasingly shared, stored, and processed by the technology in use. In this sense, increasingly, virtual worlds are becoming connective technologies that ask us to produce and to share memories with others by algorithmic means. A careful consideration of this topic will be one of the further developments of this research.

3.2.4 Prosthetic memory.

The second further kind of memory I would like to introduce addresses, and challenges, the traditional memory studies idea of collective memory as intertwined with personal or communal ownership.

Communal ownership is pivotal for cultural memory studies. One of the most influential scholars within the field, Pierre Nora, although recognising that the link between French national memory and French collective identity built during the nineteenth century (during the Third Republic) is increasingly fleeting and ephemeral, still emphasises the national dimension of collective spaces of memory. Here 'space' is to be intended as *loci* in the broadest sense of the term and not as a mere physical space: from locations, buildings and monuments, works of art, historical figures, texts, collective rituals, and so on. Collective memory, for Nora, is not only group-specific but nation-specific: according to the author, 'sites of memory' (i.e., cultural phenomena, whether material, social or mental, which a society associates with its national identity) are defined by, and contribute to shaping, precise national identities (Nora 1989; 1996 [1984); 2001-2010 [1984-1992]). Regardless of the influence of the idea of 'site of memory' (French: *lieux de mémoire*), its nation-centredness is recognised as one of the greatest issues of Nora's work (Tai 2001; Judt 1998; Taithe 1999)[47]. Since then, several cultural memory scholars have focused on memory by following postcolonial perspectives and addressing its multiculturality and transnationality. The three waves of cultural memory studies developed accordingly: from a first phase in which the definition of culture was reduced to particular cultures, and "what was studied was *the* culture, and *the* memory, of *a* social formation: a religious group, a social class, an ethnicity" (Erll 2011b, 6, emphasis of the author); to a second wave (the 1980s 'cultural turn') in which "public discussion turned increasingly to the politics of memory represented in national monuments, museums, memorials and commemorations" (Kattago 2015, 6); to a third phase, the so-called 'transcultural turn' in memory studies, in which memory is understood as something 'travelling' across different cultures and across a globalised world affected and traversed by disparate media and technologies (Erll 2011b).

As a matter of fact, mass cultural technologies "have the capacity to create shared social frameworks for people who inhabit, literally and figuratively, different social spaces, practices, and beliefs" (Landsberg 2004, 8). These technologies can structure 'imagined (mnemonic) communities' that are not necessarily geographically or nationally bounded, and that do not presume any kind of affinity among their members (ibid.). It is on this basis that Alison Landsberg introduces the concept of 'prosthetic memory'.

[47] Later, in chapter 4, when I will focus on the hermeneutic aspects of remembering through virtual worlds, I will refer to the concept of 'site of memory' by explicitly extracting the concept from its nation centered theoretical as well as methodological framework.

Such kind of memory arises from mass media and derives from the engagement with a mediated representation (Landsberg mentions "seeing a film, visiting a museum, watching a television miniseries" among others; see idem, 20; and even "perhaps [...] entering virtual worlds on the internet"; idem, 48). As such, they are not the product of a lived experience. Like artificial limbs (and therefore they are called 'prosthetic'), prosthetic memories are technological, mediated memories that 'extend the man' (in a McLuhanian fashion), and that emerge at the interface of a person and the past at an "experiential site" (Landsberg 2004, 2), i.e., during the experience of representational media. During such an experience, and here another aspect of the metaphor arises, individuals 'suture themselves' (ibid.) into a larger history, both apprehending historical narratives and taking on "a more personal, deeply felt memory of a past event through which [they] did not live" (ibid.). Though it shares with previous forms of collective memory some characteristics (such as its situatedness in the body, its performative aspects, and its vicariousness), prosthetic memory challenges "the essentialist logic of many group identities. Mass culture makes memories more widely available, so that people who have no 'natural' claim to them might nevertheless incorporate them into their own archive of experience" (idem, 9).

Prosthetic memories are therefore not premised on any claim of authenticity or natural ownership. At the same time, they do not erase differences and do not aim at constructing common origins, such as national memories produced by, e.g., nineteenth century monuments or celebrations:

> "[O]ne's engagement with them begins from a position of difference, with the recognition that these images and narratives concerning the past are not one's 'heritage' in any simple sense [...]. People who acquire these memories are led to feel a connection to [that] past but, all the while, to remember their position in the contemporary moment [...]" (ibid.).

Prosthetic memories are diffused and experienced through mass cultural technologies[48] that "have made it increasingly possible to experience an event or a past without having ac-

[48] Mass diffusion and accessibility are defining features of prosthetic memory. One of the most relevant criticisms of the concept, that of Berger (2007), revolves around the claim that we have always used prosthetics to engage with what others think or feel, even in traditional texts such as literary ones. Berger claims that prosthetic memory is nothing novel or different from other previously existent forms of re-telling and understanding others' pasts. Against such

tually lived through it" (idem, 48). They can affect cultural belonging, produce empathy, and enable individuals to establish connections with others from a different ethnicity, class, or background (ibid.). Whilst speaking of connective memory means to prescind from the individual/collective duality of traditional memory studies, prosthetic memory implies highlighting the transnational, transcultural, travelling formation of collective memory that prescinds from traditional accounts of group logic and mnemonic communities. This is increasingly important when it comes to the contemporary ecology of memory, in which social media favour the creation and sharing of huge quantities of memories online, as well as of far distant online mnemonic communities. As we will carefully see in chapters 6-7, virtual worlds that feature avatars favour the experience of prosthetic memories by definition: being embodied in avatars imply to a degree remembering her experiences as our own and perceiving what happened in the virtual world as something happened amid a fictional and the actual past. In this sense, virtuality enhances the effects of prosthetic memory. If non-virtual technologies provide users with highly embodied and deeply felt memories they have not actually experienced, virtual technologies allow users to experience those pasts, at least to a degree (as we will see). It is, therefore, reasonable to suggest that virtual forms of prosthetic memory may be more powerful, effective, and therefore problematic than non-virtual ones.

Connective and prosthetic memory, as clarified so far, raise questions on the ontological status of memory (e.g., where we can draw a line between the organic and the inorganic; or between individuals and communities - me and the others) through technological mediation. Similar questions, as we may see, are posed by virtual worlds in general, and their engagement with memory.

After having introduced virtual worlds, memory, memory technologies, and different human-virtual-world-memory relations I will be enquiring throughout this thesis, I can now move forward and discuss how memory is engaged within, through, and towards virtual worlds. I will start by addressing virtual worlds as hermeneutic memory technologies.

a critique, Landsberg emphasises how prosthetic memories differ from previously existent ones due to the fact that they are framed, and produced, within mass commodification (Landsberg 2007).

Chapter 4. Virtual memory-making.

The past, as trivial as this claim may sound, is past. Past events have already occurred, and we cannot re-access them once they have done so. They can only be remembered by who directly experienced them (witnesses), or alternatively "be brought back again [...] in very different media, for example in books, articles, documentaries, etc." (Jenkins 1991, 8). In both cases, past events are not brought back "as actual events" (ibid.) – but rather revisited, re-interpreted, and re-imagined.[49] It is pivotal to acknowledge, therefore, that our access to the past can only be analysed in terms of private remembering or collectively shared forms of remembering, where the former are framed towards (and therefore influenced by, affected by, and even constrained by) the latter.

As seen so far, even individual, private forms of memory are, to a certain degree, 'mediated' by cultural frameworks of remembering. Often, this mediation happens in terms of representation and interpretation. As observed by Huyssen,

> "*Re*-presentation always comes after, even though some media will try to provide us with the delusion of pure presence. Rather than leading us to some authentic origin or giving us verifiable access to the real, memory, even and especially in its belatedness, is itself based on representation. The past is not simply there in memory, but it must be articulated to become memory. The fissure that opens up between experiencing an event and remembering it in representation is unavoidable" (Huyssen 1995, 2).

In other words, technologies constitute the only ways to access the past, or (to refer to memory studies' lexicon) the only 'sites' where the past can be found, especially since they affect how we remember the past individually (and therefore organically). To phrase it in a 'postphenomenological' fashion, I will contend that an unmediated past is 'inaccessible by definition', just like the unmediated world experience according to Verbeek (2008, 388-389) – we can only access the past through technology.

Just like other media, from history books to photographs to historical novels, virtual worlds that engage with the past frame how we remember it, both collectively and individually, whether we witnessed it in the first place or not. Most importantly, they engage with the past by interpreting it in the first instance, before we interpret it ourselves. In other

[49] In historiography, just to anticipate one of the fields I will consider through this chapter, it is commonly contended that if the past is gone, then history (lowercase 'h') is "what historians make of it" (Jenkins 1991, 8).

words, we engage with the past as a textual circuit. As authors such as White insist, we can never obtain an unmediated experience of it (White 1984, 291; see also Hutchinson 1984), and our access to the it is always mediated – in this case, hermeneutically (see also Bachimont 2017). This chapter will therefore address the specificity of virtual worlds intended as hermeneutic memory technologies:[50]

human ⇢ (virtual world ⇢ actual world)

In the next pages, I will consider how virtual worlds can afford memory-making hermeneutically, and therefore can be understood as simulations of the past or ways to remember it as well as to 'virtualise' it.

The expression 'memory-making' is borrowed by Emil Ludendal Hammar's bridging of memory studies and game studies (2019b). There, Hammar speaks about the 'memory-making potential' of digital games to refer "to certain meaning potentials of a given text without claiming that these meaning potentials are activated in all possible cases of play" (Hammar 2019b, 40), i.e., to acknowledge the fact that these potentials can be activated, perceived, and interpreted differently by players among different contexts (ibid.). Similarly, Erll claims that the potential for mnemonic effects "has to be *realized* within situative, social and institutional frameworks" (Erll 2011a, 137-138, emphasis of the author). I decide instead to omit 'potentials', considering implied the fact that every process of interpretation is ultimately subjective (and influenced by the hermeneutic horizon the subject-interpreter interprets towards: I will deal with this within the next chapter). At the same time, by using 'memory-making' I consider implied the prefix '(cultural)', since I am using 'memory' as an umbrella term that encompasses both individual actualisations of and collective frameworks of cultural memory (see chapter 2).

Once that has been specified, I will firstly deal with the bracketed hermeneutic relation in the above schematisation, namely with how virtual worlds can 'remember'/interpret actual pasts (virtual world ⇢ actual world). I will deal with how users themselves remember/interpret virtual-worlds-interpreting-the-past (human ⇢ (virtual world ⇢ actual

[50] Given that my model based on mediation theory, I will emphasise once more that here subject and object do not have to be interpreted as two poles that exist independently one from the other but rather as two co-constituting entities that can only exist after the mediation process (of remembering).

world)) later, from 4.5 on. Both these complementary processes are to be understood as intertwined, and I am keeping them distinguished only for analytical purposes.

In 4.1, I will introduce what 'remembering' and interpreting the past means for hermeneutic technologies, by enquiring into two different approaches to such processes, namely those of history and that of memory. In 4.2, I will problematise remembering the past through representation by drawing from media studies, postmodern philosophy, and historiography. In 4.3 and 4.4, I will analyse how virtual worlds 'remember' the past through conditional representations and simulated processes. In 4.4.1 I will focus on how simulations 'virtualise' the past by providing users with counterfactual versions of it. In 4.5, I will introduce virtual sites of memory, extending my area of enquiry beyond the boundaries of historical game studies (4.6).

4.1 Memory vs. History?

To focus on how virtual worlds interpret the past, I will firstly introduce what interpreting and 'remembering' the past could mean for a virtual world. In dealing with this, I will refer to historical game studies as a main companion of memory studies. This because historical game studies is precisely aimed at dealing with how digital games, a specific subking of virtual worlds, engage with the past, and has produced over time several theoretical/analytical frameworks to discuss the past through and within digital games that will prove useful for my present inquiry.[51] Furthermore, defining the historical perspective in relation to the concept of memory will allow me to support my memory studies framework with insights gathered from historical theory and historiography.

[51] As a multidisciplinary field of study, historical game studies has increasingly become "a distinct interest separable from the larger field of game studies by the way of the theory, content and purposes with which it is concerned" (Chapman et al. 2016, 359), and is now clearly established as a stand-alone branch. Historical game scholars are interested in how games can provide a novel and distinct way to engage with the past (Chapman 2016a, 4), and therefore can be analysed and understood as a complex historical form on its own (idem, 5). Moreover, historical game scholars also frame historical games towards the historiographical debate that concerns the complexity of history and its contingency (see also Lundblade 2020). The consideration of how digital games can "play a significant part in cultural memory-making processes" (Hammar 2019b, 28) has appeared to enlarge the field to more open-ended and broader approaches and implications: memory is especially mentioned when it is time to deal with present ideologies, narrativisation, hegemony, colonialism (Hammar 2017, 2019a, 2019b, 2019c; Mukherjee 2017a) and their significance towards the way in which we engage with the past or imagine it. Memory is evoked when dealing with meta-historical reflections (Pötzsch & Šisler 2016); 'structural metaphors' of concepts/processes of the past (Begy 2015); and representational historical 'brands', narrative licenses, and 'topoi' (Chapman 2016b; Kingsepp 2007; Koski 2016). More than history-focused approaches, those focused on memory interpret the past as inherently fragmented and reshaped, and therefore try to look at its traces even beyond the 'nominal' historical past intended as an objective series of events or periods – i.e., beyond the paradigm of 'historical truth'.

As already observed, "the focus of memory studies rests, precisely, not on the 'past as it really was', but on the 'past as a human construct'" (Erll 2011a, 5; see also Jaeger 2020, 10). Traditionally, history has been conceived as slightly different: differently from 'memory', which points out something situated in the present by definition, the term 'history' covers two seemingly contradictory ideas and refers to both 'simply what happened', i.e., the historical fact itself (Clive 1989, 7; Peterson et al. 2013, 35; Elliott 2017, 22-23), and the knowledge and study of what happened (Gorman 1992, ix). To play down this nominal ambiguous (but traditional) definition of history, Jenkins suggests using 'the past' when referring to what happened and 'historiography' when referring to the writings of historians (Jeknins 1991, 7). It is this second meaning that, especially within the recent historical theory, influenced by poststructuralist critiques, postmodern epistemologies, and deconstructionism, points in the same direction of memory studies, by highlighting the inherent mediacy, contingency, and situatedness of all histories that eventually converged in the raise of the memory paradigm within the academia in the early twentieth century (Klein 2000, 127).

Once we dismiss 'the past itself', we are left with its representations constructed and interpreted within the present. Historians do agree with memory scholars on this (Baer 2001). As proposed by Jenkins, the idea of historiography is exactly motivated by the awareness of the mediacy of all histories. Among others, Hayden White (1973, 1878, 1980, 198, 1990), Dominick LaCapra (see Kramer 1989), Robert Berkhofer (1995), and Alun Munslow (1997, 2007a, 2007b, 2007c, 2013) emphasise this awareness, claiming that all history is a form of narrativisation.[52] By conceiving history as a form of narrative and a text, historiography has been increasingly opened to consider not only academic histories, but also popular forms of history or historical narrativisation such as historical fictions, historical fantasy, as well as approaches that favour small units of research and investigate historical processes at a small scale (for an introduction, see Ginzburg 1993; Magnússon & Szijártó 2013). At the present state of the field, the contingency that the past achieves through narrative is commonly accepted as the precondition for every historical articulation (Hammar 2019b, 23). This acknowledgment is borrowed even outside of the range of history scholars. Film

[52] This 'linguistic turn' in historiography and historical theory (Paul 2011) marks a significant turning point for contemporary history: on one hand, claiming that all history is narrativisation constitutes an invitation to reject realist histories and 'objective' approaches to the past in their entirety, and therefore 'to put hope' in novelists and film directors, novelists, and popular histories (idem, 80); on the other, it proposes to speak about historical realism in terms of language (ibid.) rather than of objectivity, therefore opening historical enquiries to whole new areas of interest. Historical theory is undoubtedly marked by the emerging of such positions, influenced by both postmodernism and poststructuralism (refer to the 'postmodernist challenge' posited to historicism: Berkhofer 1995; see also Chapman et al. 2016).

scholars such as Robert Rosenstone and historical game scholars such as Adam Chapman, for example, before deepening with historical representations within their respective media, acknowledge that "history is always a reductive exercise of capturing the evidence of the past and transcoding it into an assimilable narrative" (Chapman 2013b, 323).

Against objective accounts of the past, history has been increasingly seen as a literary form, and histories as "never 'in and for themselves' […] but only always for 'someone'" (Jenkins 2009, 7) and this claim too significantly echoes my postphenomenological interpretation of memory technologies introduced in the previous chapter. As a specific narrative form, history is a 'narrative pursuit' that entails a selection of 'ascertained facts' (Carr 1961, 9) available; a collection of those facts by the historian (constrained by the cultural framework she operates within – Carr 1961; Chapman 2016a, 49; Elliott & Kapell 2013, 6); and an assemblage of those facts into a narrative "to tell a given story with a given ending" (Elliott & Kapell 2013, 7) that often entails imposing current values, meanings, and motivations onto the past (Droysen 1967, 219). Historians, as authors (Munslow 1997, 3), "structure the chaos of the past" (Hammar 2019b, 23) and inevitably impose subjective as well as cultural perspectives onto it (Munslow 2007b). In other words, just like every other text, historical texts are crafted (and interpreted, as we will see) within certain hermeneutic horizons, and cannot be analysed independently from the socio-cultural framework they are framed and produced within.[53] By acknowledging that we can only engage with the past through its representations, i.e., through narratives that historians provide their audience by selecting and therefore assembling available historical facts, we cannot but allow for claims about what happened that are "less absolute and much more humble in their alleged truth-value" (Hammar 2019b, 23).

By reflecting on these aspects, I will re-evaluate the relationship between history and memory as companions, rather than irreconcilable opposites.[54] Usually memory is used as an antonym of history (Klein, 2000, 128–9), and to point out more affective,[55] open, and

[53] History "has never *simply* reflected or captured the meaning of the past" (Rosenstone 2007, 594, my emphasis) but rather it has always created a meaning for the past or superimposed one onto it.

[54] This is claimed by the memory studies' pioneer Maurice Halbwachs. The distinction of the author between a universal and objective history on the one hand, and a group-specific collective memory on the other hand (see Ricoeur 2004 [2000], 393-394) is echoed by another very influential memory scholar, Pierre Nora (1989), who similarly claims that far from being synonymous, the two terms are in fundamental opposition. For a thorough deepening of the relationship between the two terms, see Klein 2000.

[55] Accordingly, by introducing 'prosthetic memory', Landsberg defines history as something dethatched from reality and bodily experiences, implying that memory (and especially technologically mediated, prosthetic memory) is instead something lived and more 'real': "The mass cultural technologies of the twentieth and twenty-first centuries make

fluid accounts of the past compared to cold, clinical, truth-based approaches to it (Bollmer 2011, 453). However, "blocking out the memorial function of historiography appears strange in light of the discussions among historians […] regarding the constructed nature, subjectivity, and perspectivity of all history writing" (Erll 2011a, 25). All the alleged oppositions[56] between memory and history either imply an objective and realist understanding of history, based on its truth-value and blind to its (at least partly) fictive character we discussed so far; or misunderstand the distinction between history and the past; or adhere to a truth-based vision of history; or to the uncritical acceptance of history as something given or 'official', non-mediated. I shall conclude instead by claiming that the antagonism 'history versus memory' must be abandoned to correctly grasp the relationship between history and memory. Historical memory is one among various ways of remembering, from religion and literature to architecture, collective rituals, and any other media (Erll 2011a, 5), and history is nothing but "a reductive exercise of capturing the evidence of the past and transcoding it into an assimilable narrative" (Chapman 2013b, 323) within a broader context of constantly narrating, imagining, and representing the past beyond the boundaries of the reference to historical evidence. Historiography can be thus "subsumed under the larger umbrella of memory" (Hammar 2019b, 24). This claim is far from being recent: Siobhan Kattago, for example, remembers that "according to Greek mythology, Mnemosyne was the mother of the nine muses, one of whom was Clio, the muse of history" (Kattago 2015, 1).

Nevertheless, the two fields of history and memory studies deal with different subjects, despite being both interested in how we engage with the past. The two can be viewed as companions due to this. On one hand, the concept of memory has undoubtedly proven productive within history and historiography (Hutton 2015, 34), and on the other hand, as I mentioned at the beginning of this paragraph, conceiving history as a narrative form has been

possible a new relationship to the past […]. 'History' has never had privileged access to the 'real'; like all knowledge, historical knowledge is and has always been mediated through narratives and interpretation. The new technologies have made it increasingly possible to experience an event or a past without having actually lived through it. With these new technologies, what counts as 'real' experience has changed" (Landsberg 2004, 47-48).

[56] Erll lists some of the most frequent 'fallacious oppositions' between history and memory, among which we can mention memory as methodologically unregulated, identity-related, subjective, and scholarly unreliable vs. ostensibly neutral, objective historiography; memory as a private undertaking vs. history as the official version of the past; selective and appropriated memory vs. the totality of 'raw' historical events; 'authentic', immediate memory vs. mediated, ideologically fraught models, images or narratives of history; and so on (Erll 2011a, 44). A list of alleged oppositions between history and memory could be lengthened further. Legg, for example, mentions the 'destabilising force' of memory against historical 'grand narratives': "memory can challenge dominant interpretations of the past and stress the local and particular, although it must always remain dependent upon the power–knowledge relations in which it exists" (Legg 2004, 105).

one of the most important starting points for contemporary memory studies, informed by the contingency of every past and by the inherent mediacy of our remembering. Once that is clarified, I will proceed and observe how virtual worlds 'remember' actual pasts as texts, i.e., fictionalising them.

4.2 Texts 'remembering' the past.

As hermeneutic technologies, virtual worlds 'remember'/interpret the past before we do. I am using the verb 'interpret' to keep this relation as broad as possible. The aim of this chapter is exactly to deal with this 'double interpretational process' (virtual worlds 'remembering' the past, first, and human beings remembering the past through them). To discuss how virtual worlds 'remember' the past, it is useful conceiving them as texts about it, each raising within, and in turn contributing to, a broader hermeneutical horizon of texts about the past (Munslow 2007a, 568-569; Chapman 2016a, 7). Within such a horizon, the past is increasingly re-imagined, 'predicted'[57] rather than simply carried onto the present: since it is continuously narrativised, it becomes accessible through texts as "a fictive construction, neither entirely factual nor (still being based on evidence) entirely fictional" (Chapman 2016a, 8). The link between mediacy, textuality, fiction, and the past deserves further attention if we want to address the specificity of the hermeneutic relation between virtual worlds and the actual past.

Similarly to how, according to postphenomenology and mediation theory, technological mediation precedes the establishment of a subject and an object, texts about the past are a priori to our experiencing it: in some way "the image precedes history" (Hammar 2019b, 9), and therefore the reference to reality is increasingly out of sight, or even lost (Baudrillard 1994, 1).[58] This is also contended by contemporary memory scholars, according to which "the images of the past which circulate in memory culture are […] not extrinsic to media. They are media constructs. This does not make them counterfeit or unreal […]" (Erll 2011a, 114; see also Krämer 1998, 14f). In other words, even media that are sup-

[57] The term is borrowed from Mark Gilderhus, who claims that "Scholars want to know what is likely to happen under various sets of circumstances […] on the basis of fragmentary and imperfect evidence, historians make retroactive predictions […] about what probably happened in the past and, in so doing, seek to define the cause-and-effect relationships that make the flow of events understandable" (Gilderhus 2003, 6). Historiography, in this sense, focuses exactly on the prediction of the past as an active process situated within the present.

[58] Provocatively, Baudrillard asks "Nazism, the concentration camps or Hiroshima […] '[…] did all those things really exist?' The question is perhaps an intolerable one, but the interesting thing here is what makes it logically possible. And in fact what makes it possible is the media's way of replacing any event, any idea, any history with any other […]" (Baudrillard 1993b, 91).

posed to engage with the world are instead engaging with something that is already inherently mediated. This is particularly observable when we deal with the past. Any reference to data, events, or knowledge outside of (technological) mediation is just superfluous, if not misleading, especially from the perspective of memory studies and postphenomenology, which prescinds entirely from what is external to mediacy or technological directedness. As contended by Baudrillard,

> "[T]he more we scrutinize the facts, the more carefully we study details with a view to identifying causes, the greater is the tendency for them to cease to exist, and to cease to have existed. Confusion over the identity of things is thus a function of our very attempts to substantiate them, to fix them in memory. This indifference of memory, this indifference to history, is proportional to our efforts to achieve historical objectivity" (Baudrillard 1993, 91-92).

We can look at the past, accordingly, as a remembered, and therefore imaginative, space in which our culture and media landscape projects their ideologies, schemata, world views, and socio-political marks. It is by dismissing 'effects of reality', objectivism, and the quest for the actual evidence of the past, that we can analyse the memories we have of the past to understand our present – and this is exactly the aim of memory studies as a field. This is also (and particularly) observable in digital games.

4.2.1 Historical games, beyond historicity.

By looking at allegedly historical digital games, or at games set in historical contexts, what I observed so far is particularly evident.

Let us consider the digital game *Medal of Honor: Allied Assault* (2015, Inc. 2002), a first-person shooter in which players take the role of a lieutenant of the United States Army Rangers and assault Nazi bases, participate on D-Day, and fight in occupied France during World War 2. By following the steps of Kingsepp (2006), I will contend that it is hard to claim that game is based on the actual Second World War. Rather, it consists more in a 'remediation'[59] of Hollywood war movies such as *Saving Private Ryan* (Spielberg et al. 1998) and other popular movies that, in turn, "incorporate or emulate press photography and documentary footage, i.e., media which are commonly understood to have represented the 'real thing/real past'" (Erll & Rigney 2009, 4). These media, just like movies subse-

[59] See footnote 86.

quently, have undoubtedly marked the past they represented with their own formal devices, as well as under the influence of the sociocultural context they were produced within. The reference to the actual Second World War is merely incidental from the memory perspective, and less significant than the relations the virtual world in question has with other media, or with the cultural memory framework it is produced and received towards.

At the same time, *Medal of Honor: Allied Assault* (2015, Inc. 2002) provide users with a fictional world to experience and imagine on the basis of their interpretation. It is agreed, by both memory scholars and historians, that the past, since it gets narrativised, becomes (at least partly) fictive.[60] This is evident in how the contemporary hermeneutic horizon affects how we select, design, and re-imagine past events as we transform them into texts. By overlooking or completely ignoring the pseudo, the alternate, the fictional, and the fantastic historical, we may run the risk of losing the very link between history and its cultural frameworks (De Groot 2009; see also Chapman 2020). Fictional worlds, in other words, 'play a role in forming beliefs about the past', and we must take them seriously if we aim at understanding not only what happened but, most importantly, what we believe happened within it (Hammar 2019b, 23-24). The study of the hermeneutic horizon towards which we re-interpret the past is of primary interest, both for memory scholars and for historians. A consequence of this, widely discussed within popular history and historiography, is the increasing blurring of the boundaries between 'literal' and fictive histories. On the one hand, history itself has increasingly become "a trope or representational context in popular culture [and a dynamic] generic form" (De Groot 2009, 181). As a cultural imaginary, or genre,[61] history stretches across countless popular media that "demonstrate the fetishising of history and the commodification of the past through its being turned by the cultural industries into consumable product" (idem, 182). On the other hand, the 'historical' has been exposed to challenges, transgressions, and subversions, all of which often consist in the (at times deliberate) introduction of fictional elements within any depiction of the past.

[60] See also Elliott (2017) on simulacra, simulations, and historical games.

[61] Popular histories, even more evidently than academic histories, are inclined towards fiction. By speaking of historical films, Rosenstone argues that 'history on the screen' has to be at least partially fictional in order to be true: since we cannot have exact replicas of what happened back then, every condensing or compressing of events (evident even in the cutting and editing of movie fragments) will become part of a narrative that, despite its degree of accuracy, still cannot be literal at all (Rosenstone 2001). Since the 'linguistic turn' in historiography questions the legitimacy of all histories, it is worth asking who should tell the public what 'history' is, and when it is that something is intended as historical or not (De Groot 2009, 1; see also Jenkins 2002). The answer to this question may sound surprisingly vague, as we may see.

By following both the 'historiographical' and the 'memory' lead, I will then focus on any depiction of the past, even entirely devoid of 'historicity'.[62] To that end, I will also draw inspiration from deconstructionism[63] and the postmodernist doctrine of textual/representational panfictionality (Konrad 2014a; 2014b; Ryan 1997; 2005; 2006; Zipfel 2019),[64] according to which fiction and non-fiction are engaged in a continuous 'combinatorial game' (idem, 183). As we acknowledge the impossibility to engage with the past as it was, and also that we can only engage with text that represents the past within, and towards, a hermeneutic horizon made and constructed especially by fictions, we cannot but challenge, just like panfictionalist thinkers, the traditional notions of factuality and fictionality as distinguished things (Zipfel 2019, 127-128).

I will, in other words, consider as engaging with the past both historical virtual worlds such as the recent digital game *We. The Revolution* (Polyslash 2019), set during the French Revolution, or *Shogun: Total War* (The Creative Assembly 2000), set during the Sengoku period in medieval Japan; but also, digital games such as *This War of Mine* (11 bit studios 2014), set in the imaginary city of Pogoren, in Graznavia, but inspired by the Siege of Sarajevo (1992-1996). I will consider fantasy games set in re-imagined pasts such as *Sekiro: Shadows Die Twice* (Miyazaki 2019), which features Japanese Sengoku period's clans, architectures, and aesthetics which really existed, but frames them towards a fantastical setting; and other fantasy games that seem patchworks of different times, different spaces and re-imagined events such as *Fire Emblem: Three Houses* (Intelligent Systems & Koei Tecmo 2019); or even abstract games completely disinterested in the past, such as *Proteus* (Kei & Kanaga 2013) or *Tetris* (Pajintov 1984). This also means overcoming the definitional ambiguity historical game studies faces in defining when a game is dealing with the past

[62] This perspective is similar to that by many media scholars interested in history as well. See, e.g., Rosenstone 2001, 62.

[63] To sum up, based on the work of Jacques Derrida (Derrida 1973, 1976, 1981; see also Munslow 1997; Royle 2000; Sallis 1987) we can conceive deconstructionist critique as reading "backwards from what seems natural, obvious, self-evident, or universal, in order to show that these things have their history, their reasons for being the way they are, their effects on what follows from them, and that the starting point is not a (natural) given but a (cultural) construct, usually blind to itself" (Johnson 1981, xv).

[64] As demonstrated by Zipfel (2019), panfictionality have had only a few real proponents and has been used mainly as a term to criticise certain assumptions from postmodernist and poststructuralist thinkers (idem, 127). Nevertheless, the debates that textual/representational panfictionality has inspired "have had a definite impact and served specific argumentative goals" (idem, 131). My aim is not that of deepening into postmodernist philosophy and I acknowledge that many theories I will consider are not devoid of blind spots or critical issues (see, among others, Callinicos 1991; King 1998). However, it is far more fruitful for my present purposes, to use them as a source of inspiration rather than as a thorough philosophical framework.

'historically' or not. [65] I will be back on this matter later, by speaking of virtual sites of memory, in 5.1 and 5.1.1. All these kinds of fictional worlds can be interpreted as engaging with the past, and therefore as interpreting the past before we do it through them.

Virtual worlds 'remember' the past, as both fictional worlds and texts, but most importantly allow users to interact with the represented past, actively shaping it, transforming it, and even changing its course entirely. In other words, it is worth addressing how virtual worlds do not only 'remember' the past by representing it but also, and even more importantly by simulating it.

4.3 Representing the past.

Differently from other texts that engage with the past, virtual worlds also provide users access to world experiences in a phenomenological sense (see chapter 1). It would therefore be reductive to understand virtual worlds as hermeneutic memory technologies by limiting our enquiry to their representational aspects, as I will contend over the next section. On the other hand, virtual worlds do provide their users with representations of the past, and in different ways. Within this section, I will deal with how virtual sites of memory can provide users with representations of the past or can be as a whole interpreted as representations.

The representational potential of virtual worlds can raise within their narratives, aesthetics, and textual devices. I will refer to the concept of 'evocative narrative elements' introduced by Michael Nitsche for that purpose. Even though Nitsche focuses on digital games, I will notice that his observations can be applied to virtual worlds in general too, prescinding from references to ludic elements or processes. According to Michael Nitsche, digital games can

[65] Amongst the most influential historical game studies publications, several attempt to provide an at least operational account of what historical (digital) games are, or how a digital game can engage with history and therefore be considered historical (among others see Begy 2015; Chapman 2016a; Elliott & Kapell 2013; Pötzsch & Šisler 2016). Since historical games "are not considered a genre in their own right" (MacCallum-Stewart & Parsler 2007, 204; for a questioning of the concept of 'genre' within digital games, see among others Klevjer 2006a; Krzywinska & Brown 2015), the term is often used to refer to the link between certain 'historical world settings' and certain experiences the game provides: "the game has to begin at a clear point in real world history and that history has to have a manifest effect on the nature of the game experience" (MacCallum-Stewart & Parsler 2007, 204). Introducing historical game studies, Adam Chapman, Anna Foka, and Jonathan Westin notice that "historical game studies now considers a much wider variety of different types of historical games, having been led by the changes in the object of study itself […]" (Chapman et al. 2017, 362). Historical game studies, which were initially bound to 'manifestly historical' games such as Sid Meier's *Civilization* (Meier 1991; see Chapman et al. 2017, 362), are recently including historical fictions games and games in wholly fictional settings.

> "[…] evoke narratives because the [user] is making sense of them in order to engage with them. Through a comprehension of signs and interaction with them, the [user] generates new meaning. The elements that are implemented in the [virtual] world to assist in the comprehension will be called 'evocative narrative elements,' because they do not contain a story themselves but trigger important parts of the narrative process in the [user]. These processes can lead to the generation of a form of narrative" (Nitsche 2008, 2).[66]

These 'suggestive markings' (idem, 44), in other words, are implemented by designers to convey meaning, and are 'read' (idem, 45) and interpreted by users to understand what is going on within the fictional world they are acting within. They lie at the very basis of the possibility users have of experiencing gameworlds as fictional worlds. We can interpret them as de-facto textual elements disseminated across the virtual experience: once users encounter them, they read them and interpret them, and infer the overall meaning of the world consequently.

On the other hand, virtual worlds can be conceived as representations of the past in their totality.
In establishing some guidelines for the nascent field of historical game studies, William Uricchio defines the representations provided by historical digital games as "speculative or conditional" (Uricchio 2005, 333). Holger Pötzsch and Vít Šisler reinforce this point even more clearly, by speaking in terms of 'conditioned representations' (Pötzsch & Šisler 2016, 6). Representations provided by digital games are unfixed and constantly reconfigured by players (Chapman 2016a, 34), as they arise as the outcomes of processes of simulation. I will term such representations 'virtual-representations', encapsulating within the term the ideas of potentiality and latency of certain possibilities inherent in a specific artefact or state of things (Gualeni & Vella 2020, xxviii; see also Gualeni 2015, 54-55), as well as the duality digital/fictional introduced during chapter 1. The prefix 'virtual-' also allows me to enrich my take on virtual worlds by introducing the idea of conditionality.

The overall experience of a digital game, once it is over, can be itself interpreted as a representation: all the actions users do, and behaviours they exhibit during the experience, once

[66] I have replaced 'players' with 'users', and 'game' with 'virtual', without deforming the overall meaning of the sentences.

they have happened, become fixed as in any other texts. In this sense, there is no difference in 'reading' and interpreting a playthrough or a movie. One can, for example, choose to avoid killing virtual characters and to hide from them, refusing to fight: this choice cannot but produce a slightly historical representation that is widely different from that of a user that decides to kill everyone who is in her way.

Once I have highlighted the limits of conceiving digital games (and virtual worlds in general) as 'remembering' the past only through representation, it is worth addressing what it means that virtual worlds 'simulate' the past.

4.4 Simulating the past.

As claimed above, we may interpret historical digital games as representations if, and only if, we emphasise the virtuality or conditionality of such representations.

The matter is a primary concern of historical game studies. Uricchio gives primary attention to the issue. According to the author, representations "[tend] to be fixed in nature" (2005, 333), and by understanding virtual-historical worlds as representations, we risk ignoring the inherent narrative multiplicity of virtual worlds and the configurative power of users, therefore ignoring the role user agency may play for historical purposes in achieving novel possibilities for the historical discourse. Along the same line, I will align once more with Van De Mosselaer (2020; see also chapter 1) and define virtual worlds as 'interactive fictions' (different from others such as novels or movies, which are defined by the very impossibility, for the appreciators, to interact). By understanding virtual worlds as mere representations, I contend, we run the risk of assuming that they are above all linear texts, and that they therefore allow users to 'passively' interpret and negotiate meaning instead of 'actively' creating new meanings and stories (see also Uricchio 2005, 328). This would be to fall into one of the main issues of a wholly narratological approach to game studies. Thomas Apperley, accordingly, emphasises how "interactivity – the way in which the game is played, rather than watched – is a *nonrepresentational* feature common to all video games" (Apperley 2006, 7, my emphasis).[67]

[67] See also how Adam Chapman summarises years of debate within game studies in terms of 'reading' and 'doing'. By stating that digital games combine 'reading' and 'doing', the author implicitly emphasises the distinction between 'represented' narratives, the ones that readers read and interpret, and narratives raising from simulation, constructed via players' configuration within a story space (Chapman 2016a). In virtual worlds, reading and doing are intertwined, and none of them can exist without the other.

To achieve a more thorough account of how digital games and virtual worlds in general deal with the past, it is needed to consider their simulative aspects, i.e., the fact that they are simulations before they can attempt to provide, create, or to be experienced as representations. As contended by Uricchio, digital games can be interpreted as representations of the past only once the simulative process is over: in this sense, simulations can be understood as 'machines for producing representations' (Uricchio 2005, 333).

We commonly refer to a simulation as a computer model that imitates a physical system (Chalmers 2005). Following many of the current definitions of simulation supported by media studies, game studies, media philosophy, and historical game studies, I shall elaborate on the formalist approach to digital games (and virtual worlds) provided by Frasca (2003b) for that purpose.
Thanks to their materiality they are perceivable as stable, as well as relatively decipherable in their behaviours and responses. Virtual worlds provide users with contexts "characterized by the persistently intelligible qualities of the beings that participate in it, as well as their interrelationships" (Gualeni 2015, 49). Most importantly, digital simulations are structured around (semi) autonomous behaviours (Gualeni 2015, 50) sustained by rules (Bogost 2007).[68] Every simulation is a process: a process of invoking other processes, of making believe, of pretending, or whatever, but always structured and sustained by rules.[69]

In *Virtual Worlds as Philosophical Tools,* Stefano Gualeni notices that most of the analysis of simulations through the lenses of traditional ontological categories, such as those by Frasca (2003b) and Jasper Juul (2005), are intrinsically ambiguous (Gualeni 2015, 51) and lack a clear reference as to what the 'reality' simulated by simulation is, or could be (idem, 52). Without elaborating further into ontological definitions of reality, I shall follow Gualeni's phenomenological approach: in his wake, I will define 'base reality' as "the most basic level of existence, the fundamental background for the perception of phenomena and the development of ontologies" (Gualeni 2015, 53).[70] Though simulations can be interpreted as

[68] In digital games, rules and behaviours conjoined shape game mechanics (Sicart 2008) and, therefore, can stimulate the creation of novel kinds of expressions by users as well as by players (e.g., subversive/transgressive play) (Sicart 2011; Aarseth 2007). Such processes are hidden behind the surface of the virtual world's aesthetics, its interfaces, at an "internal coded level [that] can only be experienced by the way of the external, expressive level" (Aarseth 1997, 40).
[69] I will limit my enquiry on the concept of simulation here. For further discussions around the concept see, for example, Dormans 2011; Salen & Zimmerman 2003; Frasca 2003b; Gualeni 2015; Selinger 2009.
[70] This definition is useful as it refuses two of the most discussed theoretical understandings of reality: reality as something that is ontologically stable; and reality as something that is present to our senses (Gualeni 2015, 52). As it is made evident by Gualeni, both these definitions apply to simulations too – i.e., simulations are ontologically stable,

simulating such 'base reality', they can also have other source systems: they can, e.g., simulate other simulations (idem, 50). For what concerns the past, by drawing from chapter 4.2, I will contend that virtual worlds can be understood as simulations of the past regardless of how accurate the simulated processes are.

Once that has been established, we can achieve a definition of simulation which merges the pioneering account of Frasca with more recent perspectives, such as those of Gualeni and Salen and Zimmerman (2003, 423): a simulation is an "intelligible, persistent, designed and interactive way to disclose complex source systems through less complex, technically mediated ones" (Gualeni 2015, 50; see also Frasca 2003b, 2). Simulations "do not necessarily have any logical or behavioral dependence on anything outside of the simulation itself" (Gualeni 2015, 50), i.e., they maintain a certain variable degree of abstraction and independence from their source system.

Historical digital game studies rely exactly upon the ontological and phenomenological understanding of digital games as simulations provided by game studies, and which I have discussed so far [see also Agnew 2004, 329). This requires that the historical game analyst talks about actions, processes, and game mechanics that actively produce those experiences to correctly understand the ways in which digital games can be seen as a distinct historical form or as engaging with the past.
By simulating the past, digital games also allow users to virtualise it, i.e., to virtually change its course. It is therefore worth addressing how simulating the past always means 'virtualising' it.

4.4.1 Counterfactual pasts.

To claim that virtual worlds can simulate the past implies recognising that they also allow users to act within, interact with, and therefore alter, the past itself. Differently from media that rely only on representation, games can simulate past processes, therefore not only (at least partly) fictionalising the past but, even more significantly, 'virtualising' it.

To deal with such a possibility, I will take inspiration from historical game studies once more. Since historical games rely upon processes that usually grant players a certain de-

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they can be accessed and re-accessed as consistent sets of objects, or phenomenological worlds; and they are present to our senses, as we perceive them visually, aurally, and physically (it is enough to consider for example VR, augmented reality, or the vibration feedbacks of console game controllers). Therefore, they cannot be used to distinguish between reality and its simulation.

gree of freedom within simulated historical contexts, the problematisation of the very definition of 'historical simulation' is one of the most frequently debated topics within the field. Such a definition is problematic from the standpoint of historical accuracy. Since even accurate simulations of the past grant users the freedom to subvert historical realities (Elliott & Kapell 2013, 13), simulations are claimed to necessarily fail as tools of legitimate accurate historical representations as their outcomes and effects are never 'perfectly predictable' (Peterson et al. 2013, 37-38; see also Aarseth 1997, 40) because they arise from present choices, behaviours, and the responses they receive from the system.

Nevertheless, drawing from the emphasis that recent historiography puts into historical contingency, over the years historical simulations have been advocated as proper systems for historying. This because whilst games fail to act as historical representation, they nonetheless can successfully model some conceptual frameworks necessary to understand and construct historical representations. In other words, by taking part in historical simulations players can learn facts, processes, and perspectives even by experiencing a counterfactual (see 'illustrative simulation', Peterson et al. 2013, 38).[71]

Counterfactuals are discussed in depth by Niall Ferguson. Even though the author does not deal with representations of the past raising from its digital simulations, his *Virtual History* (1999) provides a summary of how counterfactual histories have been discussed within historical theory, and then emphasises the kind of approach needed to accept them as a historical form on their own. Significantly, to explain how counterfactual history counters deterministic understandings of the past, Ferguson uses the parallel of games, which 'have not a predetermined end', 'no author', 'no plot', 'no inevitable orders', but 'only endings' (idem, 68) – just like, I will contend, digital simulations and games. Counterfactual history, according to Ferguson, is nothing but an enquiry of historical processes by aid of speculative causal thought. It can therefore provide a meaningful example of process-based history, at least potentially (Bunzl distinguishes, e.g., between 'good' and 'bad' counterfactual histories, see Bunzl 2004).

[71] It is worth noting that even if "counterfactual [historical] claims are as old as history" (Bunzl 2004, 846), counterfactual history has long been far from an appropriate subject of historical inquiry. For generations, counterfactual history has been nothing but a waste of time, a 'parlour game', as historians should have been focusing only on the 'things that actually have happened' rather than on what-ifs or alternate possibilities (Carr 1961). Examples of this hostility are provided, e.g., by Edward Thompson, who back in 1978 named counterfactual historical fictions *Geschicbtswissenschlopff* (meaning "unhistorical shit"; Thompson 1978, 300). The list of renowned historians that thought about counterfactuals as mere unhistorical fictions could be extended more and more though. The very reason for their hostility is maybe to be found in a deterministic view of history, at times influenced by religious, idealist, or materialist perspectives (Ferguson 1999, 4-5).

It is worth noting that even in 'factual', traditional history, a certain degree of recourse to counterfactuals seems unavoidable (idem, 846; 857; see also Fogel 1989, 413; Black & MacRaild 2007, 125). Even if used only as counterweights, counterfactuals allow the construction of more stable, coherent, and causal historical narratives. This leads us directly to the reason why counterfactual histories matter, both for history and for historiography. In his influential study of historiography, Mark Gilderhus describes history as defining "the cause-and-effect relationships that make the flow of events understandable" (Gilderhus 2003, 6). History does not only mean to speak about names, dates, or events. Most importantly, it means to structure narratives of the past and the processes that lead to certain states of things.[72] This can happen not only through fictional histories, but also through the reference to counterfactual histories, i.e., histories that did not happen. This is why counterfactual historying is one of the peculiar ways in which historical gameworlds can be experienced as engaging with the past.[73]

So far, I have been analysing how virtual worlds, as hermeneutic technologies, interpret the past – i.e., how they 'remember' it. Throughout the analysis, I have been dealing with how digital games, as a specific kind of virtual worlds, can represent and simulate the past. Being framed towards a broader cultural memory framework, every virtual representation of the past (at least partly) fictionalises it, therefore departing from literal approaches to it. Being unpredictable, conditional, and interactive, every digital simulation of the past (at least partly) virtualises it, therefore blurring the distinction between truth-based pasts and counterfactuals. With this overview, I tackled the hermeneutic relation between virtual worlds and the past (virtual world ⇢ actual world). It is now necessary to analyse how we remember/interpret the past through virtual worlds to fully define and discuss virtual

[72] Elliott helpfully distinguishes between history as a set of data and history as an understanding of those data (Elliott 2017, 23). On the one hand, some scholars study history as a series of facts and events (historical names, dates, places, and so on – what Rosenstone terms 'Dragnet history' (Rosenstone 1995)); on the other, others can combine those facts and events to achieve a comprehensive and coherent combination of processes that leads to the present days (historical concepts) (Elliott 2017, 23; Elliot & Kapell 2013).

[73] Another link I find productive to point out is that between counterfactual histories and popular media. As emphasised by Ferguson, counterfactuals are widespread in popular media (Ferguson 1999, 2): popular narratives such as *Back to the Future* (Gale et al. 1985), novels such as *Random Quest* (in Wyndham 1961), and also tv series like *The Man in the High Castle* (Cedar et al. 2015-2019, inspired by Dick 1962) and digital games such like *Castle Wolfenstein* (MachineGames 2014) explore possibilities beyond the range of facticity, and show how historical fictions have always been affected by inaccuracies, anachronisms, and also, ultimately, by counterfactuals. More explicitly than academic history, and prescinding entirely from any alleged truth-value, popular histories have always privileged counterfactual histories, to the point at which we may say that being that every form of popular history is at least partly fictive, every form of popular history is at least partly counterfactual as well.

memory-making. In other words, what is left to inquire is the role users have in remembering the past through virtual worlds.

4.5 Introducing virtual sites of memory.

So far, I have been dealing with how virtual worlds 'remember' the past, i.e., how they interpret it (as hermeneutic technologies) before we remember it through them.[74] I have been defining virtual worlds as representational and simulative texts, inherently fictionalising and virtualising the past. Nonetheless, virtual memory-making is not only a matter of texts engaging with the past. If texts, using the broad understanding of the term I adopted so far, are the only way we have to produce meaning, such meaning does not reside much in the text(s), as in how we read or interpret them once we recognise them as texts (Hutchinson 1984, 215). This view, which perfectly fits with the postphenomenological perspective I am adopting, is the point of departure of this chapter.

Virtual worlds, to provide users with simulations and representations of the past, must be interpreted as engaging with the past in a first place. In other words, virtual memory-making is not an automatic process: it is a process in which human beings are actively involved. To tackle the hermeneutic engagement with the past I shall therefore consider the role users play in this circle of interpretation (see 1.5), i.e., how users can remember the past through virtual worlds. From this paragraph on, I will consider the second hermeneutic relation involved in the hermeneutic engagement with the past, i.e., how users interpret the past as already interpreted by virtual worlds. In other words, I will analyse the first arrow in the schematisation below:

human ⇢ (virtual world ⇢ actual world)

To do so, I shall define virtual worlds as 'virtual sites of memory'. Such a definition, I contend, is useful as it already frames hermeneutic engagements with the past towards memory studies and vice versa. Introducing the definition of 'virtual sites of memory' will also allow me to re-analyse the previously exposed concepts by emphasising the role users have in remembering the past through virtual worlds.

[74] According to the schematisation provided: (virtual world ⇢ actual world).

The approach focused on sites of memory draws upon the work of Pierre Nora and is "certainly the most prominent and internationally most frequently practiced approach to cultural remembrance [as it] constitutes one of the most sorely undertheorized concepts of memory studies" (Erll 2011a, 27).[75] According to Nora, any cultural objectivation can be a site of memory, including not only material objects such as texts but even present or past events, such as rituals or commemorations. I will claim that since the concept of 'cultural objectivation' is so broad as to accommodate 'texts', 'artefacts', and 'media', I shall understand all of them interchangeably to include objectivations like technologies, books, paintings, tales, songs and ballads, sculptures, monuments, signboards, movies, photographs, recordings, architectures, and buildings, and even performances, rituals, world experiences, and so on and so forth. It may be evident that, according to the framework I have introduced so far within this dissertation, even digital games and virtual worlds can be intended, analysed, and experienced as cultural objectivations.

Not all cultural objectivations are, by following Nora, sites of memory. Notwithstanding this, any cultural phenomenon that a mnemonic community associates (or perceives as associated) with its past can become one (see also Erll 2011a, 25). Such a definition of 'sites of memory', in other words, allows me to emphasise how the very possibility of memory-making can only arise within a hermeneutic horizon of interpretations, in which those who remember plays a pivotal role in understanding, acknowledging, and giving meaning to cultural objectivations – transforming them into memory technologies.

Inspired by Nora, I will contend that to be considered 'virtual sites of memory', virtual worlds must have:

- *A functional dimension*.
  Virtual sites of memory have to fulfil certain memorial function in society, and to evoke memories as part of this function. Nora gives primary importance to this dimension of sites of memory: "[t]o begin with, there must be a will to remember. If we were to abandon this criterion, we would quickly drift into admitting virtually everything as

[75] This even though it carries, as we have seen at 3.2.4, old-fashioned and hegemonically biased assumptions that contemporary memory scholars tend to avoid or problematise. I will use the concept of 'site of memory' devoid of these assumptions and criticisms, and I will frame virtual worlds towards this model for operational purposes only. Additionally, and according to the meaning of the term introduced by Nora, I will use 'site of memory' without any reference to spatiality as a privileged field for the emergence of remembrance or memory: here, 'site' is used not to point out an environment or a space but rather "any significant entity, whether material or non-material in nature" (Nora 1996, xvii).

worthy of remembrance" (Nora 1989, 19). Other memory scholars, and especially those interested in media memory, speak in terms of 'mnemonic functionalisation' for that purpose. Inspired by Stuart Hall (1973),[76] Erll distinguishes between two aspects of mnemonic functionalisation, namely:

- *production-side functionalisation*, which refers to cultural objectivations that intentionally encode "messages for posterity" (Erll 2011a, 124), such as monuments or memorials for example, and all the cultural objectivations that are made to "elicit processes of remembering in the future" (idem, 125);
- *reception-side functionalisation,* which refers to the very fact that a site of memory "exists when people think it does. As soon as a medium is perceived and used as such, it turns into a medium of memory – even if it was never intended to be one" (ibid.). Reception-side functionalisation mostly refers to retrospective functionalisation that deals with cultural objectivations that were not intended to be used as sites of memory in a first place – or rather, regardless of the intentions of their creators, designers, or performers (assuming that there are such: even things from the natural world can be intended as sites of memory). Therefore, a virtual site of memory, just as sites of memory at large, is not a given but rather "comes into being through a complex interplay of various material and social factors" (Erll 2011a, 125), i.e., it cannot but come into being within a hermeneutic horizon (see 1.5-1.5.1).

- *A symbolic dimension*.

  According to Nora, "every *lieu de mémoire* is symbolic by definition" (Nora 1992, x), i.e., it has a symbolic meaning for the community it functions towards (Nora 1989, 9). I am uninterested here in deepening the concept of symbol of symbolisation. I will instead use 'symbol' to describe something that stands for something else, in a way that is analogue to representation in make-believe games. Mnemonic symbols can be 'imposed' and 'constructed'. In other words, just like for functionalisation, the "symbolic and memorial intention [can be] inscribed in the object itself" (imposed) or they can be constructed by "unforeseen mechanisms, combinations of circumstances, the passage of time, human effort, and history itself" (Nora 1992, x). In this sense, 'symbolisation' just like 'representation' is a term we can easily use to describe hermeneutic relations with memory technologies.

[76] I will deal with it more thoroughly later, during chapter 7, by speaking of virtual worlds towards material culture theory.

Drawing from these dimensions, we can already observe how virtual memory-making is always a matter of interpretation, whether it is free or imposed. Virtual sites of memory can arise either from production-side functionalisation, and therefore have an imposed symbolic dimension, or from reception-side functionalisation, therefore having a constructed symbolic dimension. While reflecting on the production-side and the imposed symbolic dimension of virtual sites of memory can provide fruitful insights for designers interested in dealing with the past through virtual worlds, it is on the reception-side that, ultimately, meanings are produced, events are remembered, symbols recognised, and mnemonic functions implied. It is therefore worth emphasising that the two sides cannot be entirely separated, if not operationally and for analytic purposes. Even if designers attempt at imposing certain interpretations of a virtual world as a virtual site of memory, for example by specifying that the experience provided is historical, it is up to the users to acknowledge it and functionalise the virtual world in question as site of memory. Based on these observations, I will define virtual sites of memory as:

> Any represented or simulated cultural objectivation experienced within a virtual world, or a virtual world as a whole intended as a cultural objectivation, which users associate with the past of a mnemonic community they belong to.

This also echoes and extends beyond the boundaries of historical remembrance, the concept of 'historical resonance'[77] introduced by Chapman to describe the recognition by users of virtual worlds as sufficiently referential, or 'sufficiently real',[78] needed for users to interpret such worlds as historical in a first place (Chapman 2016a, 35; see also Apperley 2010, 22). By countering any 'ontological' definition of historical games,[79] he defines historicity as raising from interpretation, and within certain hermeneutic horizons, and concludes by

[77] A deriving concept from historical resonance is that of configurative resonance, "an extremely important concept to historical games" (Chapman 2016a, 40) which links players' interpretation with agency. It shall be evident how it can be applied towards virtual world in general, since they are defined by configurative access as well. Configurative resonance "involves the player deliberately configuring, and/or performing actions in the game – out of all the possible potential configurations and performances – in order to create [or to avoid] specific resonances" (Apperley 2010, 135). Configurative resonance refers to the fact that players of historical games can willingly use these games as tools to produce particular historical representations, therefore being influenced and motivated by history during the game experience (Chapman 2016a, 39-41).

[78] It is worth noting here that the concept of resonance is not limited to real events. Despite of Chapman's focus on historical resonance, the concept of resonance can also appear in relation to something that is not real, and places the game in a wider cultural context rather that only in a historical context (Grace 2020).

[79] Defining historical games is one of the hardest tasks of historical game studies: "it is hard to argue for absolute historical intentions in most cases" (Elliott 2017, 33).

defining historical games as 'systems for historying'.[80] For a historical virtual world to be interpreted as historical, there must be a user-historian interpreting that world accordingly, and also implying (here I am borrowing the concept of implied authorship, see 1.5.2) that a designer-historian has crafted that world accordingly (see Chapman 2016a). Being a subjectively created figure, with subjectively inferred intentions, the implied designer-historian arises from the background, beliefs as well as expectations of the user-historian – this also echoes the centrality Miguel Sicart brings into focus of the values users have (Sicart 2011).

Also inspired by the take of Chapman and historical game scholars, I will conclude that virtual worlds, and digital games as such, cannot but engage with the past once their users interpret them as engaging with it, either implying that they are intended to do so in a first place or not. I therefore consider 'virtual sites of memory' a broad range of digital games, even entirely devoid of historical references. Within the next chapter, I will provide a framework to analyse virtual memory-making as raising from the experience of virtual sites of memory. Before dealing with that, to furtherly clarify my field of enquiry, I will provide some examples.

4.6 Call of Duty, Pathologic, and Spore.

Virtual sites of memory are ultimately disclosed by the interpretation of users. But what range of cultural objectivations can we analyse as virtual sites of memory? Just as for virtual worlds in general, providing an inclusive taxonomy would take me far from the matter at hand. What I can do is provide some examples of virtual sites of memory within digital games, which may help broaden the field of historical game studies and build the terrain for the framework I will provide throughout the next paragraphs.

Examples of virtual sites of memory are all the 'historical digital games', raising from the intertwining between (implied) imposed historical reference, historical resonance, historical interpretation and engagement by users.
When one plays *Call of Duty: World at War* (Treyarch 2008), one can easily infer the figure of a designer interested in providing an immersive simulation of the Second World War, and therefore understand the game as a virtual site of memory (and more specifically

[80] Chapman borrows the term from Greg Dening, who means by that "the unclosed action of making histories" (Dening 2007, 102). Historying pursues metaphors as well as models (Dening 2007, 103) and "give[s] back to the past its own possibilities, its own ambiguities, its own incapacity to see the consequences of its action" (ibid.)

as a historical game) based on its aesthetics, narratives, fictional world, multimedia devices, and procedures. *World at War* (ibid.), nonetheless, is not intended as an objective virtual site of memory: it is a virtual site of memory only for certain users, within certain mnemonic communities, and once certain historical resonances are enacted. We can imagine, for example, a player who knows nothing about the Second World War or the historical context of the game. Even though such a player can perfectly enjoy the game from its beginning to its end, and therefore have a satisfactory experience, she will not be able to construct her own historian-implied designer and will not be able to functionalise *World at War* (ibid.) as a virtual site of memory. In fact, such a user will not know that the game is dealing with the past at all, and therefore will ignore that such a past existed.

Even non-literal representations/simulations of the past are intended as virtual sites of memory in this sense. Pseudohistorical fantasy worlds such as *Valkyria Chronicles* (Sega 2008) fall within such a category, as demonstrated by Koski (2016). In these cases, mnemonic functionalisation can be enacted towards not only historical fictions but also metaphors of the past.

Mnemonic functionalisation describes a set of phenomena and interpretations that is broader than that of interest for historians. Therefore, unhistorical virtual worlds can also be experienced as virtual sites of memory. In these cases, reception-side functionalisation prescinds from the functionalisation by design.
Pathologic 2 (Ice-Pick Lodge 2019) is a role-playing game set in The Town, a small settlement in an unspecified area of the Eastern steppe. The heavily allegoric, symbolic and cryptic fantasy gameworld resembles, in certain aspects, a heavily superstitious Russian culture pre-1917 Revolution. Although one can hardly contend that the game as a whole can be experienced as a virtual site of memory, several representations and processes within it can be intended as such: the game references many religions, literary sources, and maxims from movies, tv shows, and thinkers as well – all things that not only borrow but, even more interestingly, re-interpret and give new meaning to what they reference. To experience these representations or simulations as such, again, users must functionalise them – and to functionalise them, their background and hermeneutic horizon have to 'resonate' with them.

Even the real-time life simulation game *Spore* (Maxis 2008) can be, and has been, intended as a virtual site of memory, despite the fact that it is set in a fantasy universe and deals

with an alien life form growing from the molecular stage to conquer the universe. Again, this does not work for the game as a whole. Some aspects of the game, or some processes the game favours, can nonetheless be interpreted as virtual sites of memory. *Spore* (ibid.) "has been used to demonstrate and critique conceptual models of evolution" (Peterson et al. 2013, 40), and just as for *Pathologic 2* (Ice-Pick Lodge 2019), teachers can use *Spore* (Maxis 2008) as a system to make their students 'historying'. Furthermore, scholars can recognise in the mechanics of the game references to, or metaphors of, the 'base reality's' economics, society, or history. It is possible to interpret *Spore* (ibid.) through the lens of historying, or to evaluate its historicity, or the accuracy or plausibility of the way in which it simulates the developing of a civilization, despite of the fact that the game has unhistorical themes. Accordingly, it is possible to frame certain elements of *Spore* (ibid.) towards a broader cultural memory framework, therefore experiencing it as a virtual site of memory.

In this sense, every remake or sequel is intended as a site of memory too. Every remake affords memory-making, re-enacting and referencing the fictional world of its predecessor(s). In other words, even simply playing *Final Fantasy VII Remake* (Square Enix 2020) and interpreting it as the remake of the PlayStation classic means acknowledging its mnemonic function. This is well observable across community of players and fans, usually engaged in (at times complex) 'memory plays' (Simine 2019) at times aimed at challenging, questioning or re-interpreting the original gameworlds and narratives.

As these examples show, virtual sites of memory can therefore be hard to discuss comprehensively, since every virtual world (and every aspect of it) can be enacted as a virtual site of memory once one acknowledges its engagement with the past. The range of virtual worlds that engage with the past as a whole is wide, even by limiting my enquiry to digital games only, from *Prince of Persia* (Broderbund 1989) to *Sid Meier's Civilization* (Meier 1991), from *Assassin's Creed II* (Ubisoft Montreal 2009) to *Fire Emblem: Three Houses* (Intelligent System & Koei Tecmo 2019), and it becomes even broader if we consider as virtual sites of memory every representation or simulated process within virtual worlds, from virtual paintings attached to the walls to single characters, from soundtracks to actions performed. The aim of the rest of this thesis is to provide a framework to analyse, discuss, interpret, and produce such a variety of virtual sites of memory.

Chapter 5. Virtual sites of memory.

If sites of memory can "fulfil a multitude of mnemonic functions, such as the imaginative creation of past life-worlds, the transmission of images of history, the negotiation of competing memories, and the reflection about processes and problems of cultural memory" (Erll 2011a, 144),[81] same things can be said about virtual worlds. In other words, virtual worlds can be understood as 'carriers' of cultural memory. For operational purposes only, I suggest analysing virtual sites of memory by distinguishing between representations and simulations of the past.

5.1, 5.1.1, 5.1.2, and 5.1.3 will be dedicated to representation. I will borrow Riceour's framework to address representation in literary texts to address different kinds of representation at play in virtual sites of memory. 5.2, 5.2.1, 5.2.2, 5.2.3, and 5.2.4 will be instead dedicated to simulative aspects of virtual sites of memory. 5.3 will conclude the chapter.

5.1 Framing representation in virtual sites of memory.

To address virtual sites of memory as representations, I will provide a framework inspired by the distinction between different levels of analysis of media memory texts provided by Astrid Erll and modelled upon the tripartite model of mimesis introduced by Paul Ricoeur. Since I have been writing about this framework extensively elsewhere, I shall limit myself to summarise it – for a more thorough account of it, see Caselli 2021.

Erll's framework has already been applied to certain virtual worlds, e.g., digital games (Pötzsch & Šisler 2016; Hammar 2019b), as it fruitfully distinguishes between three levels of analysis of cultural expressions, intramedial, intermedial, and plurimedial, and values the importance of the cultural context in which virtual worlds are produced and experienced. These three levels of analysis help categorising the reading of virtual worlds, intended as hermeneutic technologies, 'along a variety of textual and contextual categories' (Hammar 2019b, 46). The framework emphasises how the formal properties of a text (intramedial level) are always in dialogue with other established surrounding texts (intermedial level), i.e., framed towards broader processes of imagery formation across different technologies, media, and regimes of representation, and at the same time circulate within the social contexts in which they are received (plurimedial level; Erll 2011a, 138 – see also

[81] Interestingly, and in a perspective that is similar to that of this dissertation, Erll mentions among the different literary genres that can function as a medium of memory: "the lyrical poem, the dime novel, the historical novel, fantasy fiction, romantic comedies, war movies, soap operas and digital stories" (Erll 2011a, 144). I will extend the model by Ricoeur to describe every kind of fiction – such an extension is floated in a way by Ricoeur himself, who suggests extending his reflections to "every mode of iconicity, that is, to what we are here calling fiction" (idem, 82).

Erll & Rigney 2009). At the same time, by excluding an alleged 'extramedial' level, it highlights once more how the focus on memory does not demand attention for what is outside of mediated pasts.

As follows, I will take inspiration from Erll's framework to approach the representational aspects of virtual sites of memory. More specifically, I will look at the above-mentioned three levels of analysis as I enquire three different levels of representation within virtual sites of memory: mnemonic prefiguration, textual configuration, and users' refiguration. Such a tripartite understanding of representation is structured according to the model of the 'circle of mimesis',[82] introduced by Ricoeur (1984 [1983]).

5.1.1 Mnemonic prefiguration in virtual worlds.

'Prefiguration' stands for the 'preunderstanding' of reality. According to Ricoeur, "[…] there is no human experience that is not already mediated by symbolic systems and, among them, by narratives" (idem, 74). It is worth noting that, therefore, the 'reality' I am mentioning here is not the reality of an alleged objective world 'as it is' but rather the reality of the memory culture, or network, a text is produced within and towards. By drawing from Ricoeur, Erll suggests approaching mnemonic prefiguration by focusing on how cultural memory affects every representation (Erll 2011a, 153). Accordingly, I will refer to Wolfgang Iser's 'textual repertoire' to point out that "all the familiar territory within the text [being it] in the form of references to earlier works, or to social and historical norms, or to the whole culture from which the text has emerged" (Iser 1978, 69). This means acknowledging every representation as already framed towards a repertoire of previous and surrounding representations instead of towards reality, as seen in 5.2. To address prefiguration, we will focus on the *intermedial level* of virtual sites of memory, i.e., on how their representations are framed towards previous textual representations of the same past period, or event (see Erll 2011a).

By focusing on mnemonic prefiguration, we will enquire which elements are being prefigured by a virtual world, which cultural dimensions do these elements originally have, and how they have been transformed and mediated by the cultural framework towards which the virtual world in question is designed. To enquire about mnemonic prefiguration

[82] As follows, I will use 'representation' as a synonym of 'mimesis'. With 'mnemonic representation', I will therefore mean all those representations that are functionalised as sites of memory, and that therefore at the same time are interpreted and understood having a symbolic meaning.

means, in the first place, asking *what* is being represented within a virtual world. I will define a mnemonic prefigured element as an element that is remembered by a mnemonic community. It is therefore worth inspecting how such elements are borrowed by the broader sociocultural framework of textual representations before they are transformed and framed towards a virtual world. Therefore, acknowledging how such elements are influenced by ideologically or hegemonically biased frameworks is also pivotal here.

We can understand both the Second World War, an actual historical event, and the Division of Arnor, which took place during the Second Age in the fictional world of the Middle-earth as prefigured elements (*The Lord of the Rings*, J. R. R. Tolkien 1954); both Otto von Bismark's uniform and Ezio Auditore's (*Assassin's Creed II,* Ubisoft Montreal 2009) hidden blades. Erll speaks of 'memory *of* literature' to designate the return, in literary texts, of elements from earlier works of art in terms of intertextuality, intermediality, processes of canon formation and literary historiography (Erll 2011a, 68). Similarly, I would like to emphasise once more that prefigured elements have to be interpreted as the 'memory *of* fiction'[83] that virtual worlds inherit from previously mediated forms of cultural expression.

To address mnemonic prefiguration in virtual sites of memory, I shall consider both the production-side and the reception-side functionalisation of virtual worlds.
Considering a prefigured element *X* that a virtual world designer is willingly to represent in its virtual world, it is profitable to:

> - *Identify implied mnemonic communities that can functionalise it as a site of memory*.
> To begin with, designers of virtual worlds that are interested in functionalising their worlds as virtual sites of memory may identify the mnemonic communities they are referring to.
> - *Acknowledge X as a prefigured.*

[83] Such a term, metaphorical, aims at emphasizing that every text can be understood and interpreted adequately only when is seen in relation to its diachronic dynamics. Two different understandings of the term are possible. The first is 'a text that remembers previous texts', and points out intertextuality and intertextual references, cliches, topoi, and so on and so forth, and in general every return (Lachmann speaks in terms of resemiotization, see Lachmann 1993, xviii; Lachmann 1997) of previous aesthetic forms in individual texts (through topoi, intertextuality, genre conventions – see also Olick 1999b and the concept of 'genre memories'). The second is 'mnemonic communities that remember texts' and points out canon formation and textual historiography. For an overview on these perspectives see Allen 2000; Bakhtin 1981; Bloom 1973; Erll 2011a, 70-77; Kristeva 1969.

Once one has acknowledged both the implied mnemonic communities and the implied designer that the actual one would like to construct, it is worth tracing back a mnemohistory of *X*.[84] The depth and precision of such mnemohistory depend on the intention of the designer and includes consideration of the cultural memory dimension of *X* as well as of its previous remediations.[85]

- *Functionalise X as a virtual site of memory – represent X.*

Based on the previous questions and observation, designers may choose how *X* is going to be represented within the virtual world in question, and how is it going to be recognised, understood, and interpreted.

By using this framework, designers of virtual worlds may put the representation they would like to implement in their world in relation with a broader cultural memory framework. Therefore, not only avoiding possible misunderstanding and misreadings (i.e., possible mismatches between the production-side and the reception-side functionalisation of the site of memory – see also Bloom 1975) and favouring the construction of certain implied designers but, and most importantly, acknowledging the complexity of the memory framework they are borrowing elements from, and therefore reflecting on hegemonically biased representational traditions and on ideologically-influenced clichés, and so on and so forth (see Hammar 2017; 2019a; 2019b; 2019c; Hammar & Woodcock 2019; Mukherjee 2016; 2017; Sterczewski 2019).

On the other hand, for what concerns the reception-side functionalisation, considering an element *Y* within a virtual world, or the virtual world itself intended as a simulation/representation of the past, it is profitable to:

[84] With 'mnemohistory', I mean approaching the history of the representations of the past rather than the past itself. I refer to the definition provided by Jan Assmann: "Unlike history proper, mnemohistory is concerned not with the past as such, but only with the past as it is remembered […]. Mnemohistory is reception theory applied to history […] but 'reception' is not to be understood here merely in the narrow sense of transmitting and receiving. The past is not simply 'received' by the present. The present is ''haunted'' by the past and the past is modelled, invented, reinvented, and reconstructed by the present" (Assmann 1997, 9; see also Tamm 2008, 501).

[85] Remediation can be seen as 'the memory of media' (Erll 2011, 140). David Jay Bolter and Richard Grusin introduce the concept to focus exactly on "the formal logic by which new media refashion prior media forms" (Bolter & Grusin 1999, 273). Drawing upon Marshall McLuhan's remark that "the 'content' of any medium is always another medium" (McLuhan 1964, 23-24), I claim that media do not simply repurpose themselves or other media but are continuously engaged in "a more complex kind of borrowing in which one medium is itself incorporated or represented in another medium" (Bolter & Grusin 1999, 45). By inspecting remediation across different media forms, Bolter and Grusin acknowledge that "[N]o medium today, and certainly no single media event, seems to do its cultural work in isolation from other media, any more than it works in isolation from other social and economic forces" (Bolter & Grusin 1999, 15; see also Erll & Rigney 3-5; chapter 6.1).

- *Functionalise Y as a virtual site of memory – as a representation of X.*
Reception-side functionalisation, as already noticed, entirely leaves out the intentions of the designer. In other words, users/interpreters may ask themselves what *Y* is representing and acknowledge that *X* is something that deals with their past, therefore taking part in a broader framework of representations of the past.
- *Acknowledge X as prefigured.*
Once one has acknowledged that *Y* is representing *X*, and that *X* is something that deals with the past, it is worth it for the receivers to trace back a mnemohistory of *X*. The depth and precision of such mnemohistory depends on the intention of the user, or scholar.
- *Identify implied mnemonic communities.*
No analysis of virtual worlds intended as virtual sites of memory can prescind from referring to specific mnemonic communities, since there are no meanings, interpretations, or memories that prescind from hermeneutic and cultural horizons.

By using this approach and methodological toolkit, users of virtual worlds may recognize and interpret what they experience within a virtual world towards a broader cultural memory framework – regardless of both the intentions they imply that the designers have and those actual designers have had during the design.

5.1.2 Textual configuration in virtual worlds.

Once prefigured elements become part of the text, they get 'emplotted' (Ricoeur 1984[1983], 74.), and therefore become fictional: configuration "opens the kingdom of the *as if*" (idem, 64, emphasis of the author). To merge the lexicon of Ricoeur and that of Walton, I will claim that once prefigured elements become part of a story, become represented, or become elements of a make-believe game, their ontological status changes (Erll 2011a, 154) – i.e., they become fictional. Textual configuration refers to the arrangement of prefigured elements, and the construction of networks of meaning (ibid.) that are internal to fictional worlds.

Configuration deviates from previously established textual traditions (Ricoeur 1984[1983], 69). And yet, even highly deviated narratives or texts rely to a certain degree on the cultural framework of tradition that precedes and encapsulates them: even "[t]he labor of imagination is not born from nothing. It is bound in one way or another to the tradition's paradigms. But the range of solutions is vast" (ibid.). Every text re-configures, constructs, and

re-arranges prefigured elements of a memory culture. Erll claims on this purpose that "[a text is not simply] a *re-presentation* of reality; in fact, configuration is an active, constructive process, a *creation* of reality" (Erll 2011a, 154, emphasis of the author). Considering configuration within virtual worlds means analysing their *intramedial level*, i.e., how they motivate certain kinds of memory-making through their own rhetorical/formal devices.

To enquire what textual configuration of mnemonic prefigured elements means, in the first place, asking *how* such elements are being represented within a virtual world, and how they relate with others as parts of a fictional world. I will define textual configuration as the creation of a set of relations, concepts, and narratives that lay at the basis of a fictional world: the arrangement of buildings and natural elements in space, the appearance of façades, written texts, and characters, the relationship between two virtual entities, the morphology of a virtual continent, a specific set of actions and behaviours, and so on and so forth – textual configuration includes all "the internal laws of a [text]" (Ricoeur 1984[1983], 53), or (with reference to Roy Sommer) the 'narrative potential of fictional texts', i.e., "an assumption substantiated by the text regarding the possible effects of the narrative strategies which structure and organize its content and are thus essential for its meaning" (Sommer 2000, 328, trans. in Erll 2011a, 157).

I shall construct my framework based on a narratological model, and especially that introduced by Seymour Chatman (1978, 26). I will use his model to identify various 'building blocks' of a virtual world intended as a text: however, I am not implying here that virtual worlds have to tell stories to be interpreted as texts. As will become clear, the framework I will provide is suitable both for virtual worlds that provide users with interactive storytelling and narratives and for virtual worlds that are devoid of narrativity[86] and are, for example, only composed by digital environments that users are free to explore.

Considering the prefigured element *X*, it can be represented within a virtual world as:[87]

[86] Toolan lists a defining set of characteristics that narratives have to have to be defined as such, namely: a) a degree of artificial fabrication; b) a degree of prefabrication; c) 'trajectory', i.e., they must have a beginning, middle, and an end; d) a 'teller' (regardless its visibility); e) 'displacement' from both the space and the time the speaker or the addressee live in; f) the 'recall' of happenings (Toolan 2001, 4-5). Sternberg adds to this list 'sequentiality' (2010, 637). Other narratologists identify causal agency as another necessary condition of narrativity (Richardson 1997, 106; White 1980; Bal 1997; Bordwell 1985; Phelan & Rabinowitz 2005). Other definitions of narrativity are provided by Abbott (2002; 2009); Prince (2003); Schmid (2010, 8-12); Sturgess (1992). For a comprehensive and synthetic account of narrativity, see Amerian & Jofi (2015).

[87] To address textual configuration of virtual sites of memory, there is no need of distinguishing, as for prefiguration, between reception-side and production-side functionalisation.

- *Content*.

I will term 'content' what as being told within a text, or rather all the elements and events that are part of the fictional world that can be experienced from a text. Content entails both existents and events. Existents occur in a fictional space (Chatman 1978, 96) and are the fundamental constituents of a fictional world as well of its narrative. In other words, every virtual object is to be taken as an existent in narratological terms: characters, buildings, landscapes, trees, transportations, weapons, clothes, furniture, clouds, creatures, and so on and so forth. Events occur in a fictional time, and they involve actions of fictional existents (Chatman 1978, 96). This means that, at least in a minimal sense, every event or chain of events could construct a story. In virtual worlds, there is a difference between represented events and events that users can affect or create, i.e., simulated events. By representing *X* as an event, I point out processes that get merely represented and towards which users have no influence or agency of any sort. Such events, pre-scripted by design, are analogue to those one may find in television or literature – they are received, 'read', and interpreted passively by users (Aylett 1999).

- *Discourse*.

Discourse is usually intended as 'the expression plane' of fiction (Chatman 1978, 146). I will group under this branch all those discursive and rhetorical devices that allow designers to present the content of their virtual world, and therefore to construct fictional memory:[88] for example, pre-scripted cinematic sequences may for example feature, on the plane of expression, camera angles, video editing, soundtracks; virtual texts may have their own narrators and implied authors, as well as their rhetorical textual devices, expressions, tone, et cetera. Other than that, virtual worlds may provide users with narrators that accompany them through their exploration or progression – the adventure digital game *What Remains of Edith Finch* (Giant Sparrow 2017), for example, features several comments of a narrator as the user explores the virtual world. In such cases, narrational discourse is explicitly pre-

[88] Fictional memory has always been a dominant topic in fiction: "[n]umerous texts portray how individuals and groups remember their past and how they construct identities on the basis of the recollected memories" (Neumann 2008b, 333), or more broadly "are concerned with the mnemonic presence of the past in the present, […] re-examine the relationship between the past and the present, and […] illuminate the manifold functions that memories fulfil for the constitution of identity" (ibid.). Fictional memory is what Neumann terms 'the mimesis of memory', i.e., "the ensemble of narrative forms and aesthetic techniques [through which texts] stage and reflect the workings of memory" (Neumann 2008b, 334), and devoid of any sort of reference to culturally prefigured elements.

sent within the virtual world in question and can be designed as in other kinds of text (see Chatman 1978, 146-261), using, e.g., retrospection or analepsis (Genette 1972, 40).

Representing memories through discourse in a virtual world means also, for example, to remediate forms of expressions, or formal structures, rather than contents, such as previous non-virtual technologies and aesthetics (McCrea 2009); modes of representation or styles; et cetera. The implementation of narrative voices, as well as focalisations, chronotopoi, or other narrational devices are other strategies to create fictional memories.

This part of the framework will help to frame different mnemonic icons, or mnemonic elements, towards a broader narratological network of textual analysis. Both designers and users may find profitable to observe textual configurations and prefigured mnemonic elements within text using it. By speaking of textual configuration, one may observe how even a fictional world's depiction of an alien race of pale-skin hairless humanoids such as the Helghan in *Killzone* (Guerrilla Games 2004) is contributing to our memory of Nazi Germany, favouring collective memory-making around our cultural understanding and reinterpretation of the Third Reich.

To provide an example, at the end of *Metal Gear Solid V: Ground Zeroes* (Kojima 2014), set in 1975, the player sees one of the main buildings of the Mother Base, the military base of the protagonist's private army, collapsing into debris and bursts. The event marks a tipping point in the narrative of the series, as it is one of the last things the protagonist of this and the following game (*Metal Gear Solid V: The Phantom Pain* (Kojima 2015)) sees before falling into coma. He will dedicate his whole life to avenge the fall of Mother Base, and lots of atrocities and world-scale crises will follow this event. The memory-making potential of the scene resides in how the collapse of the building is depicted: the camera angle and the way in which it crumbles clearly recall one of the most iconic sequences of '9/11', originally filmed by passers-by and then already remediated by TV, photographs, documentaries, and movies. The repetition of this specific mnemonic icon contributes to shed light on the political meaning of the game and favours active interpretation by the players. Additionally, it takes part in a broader cultural multimedia process of memory-making of '9/11'. This occurs despite of the fact that '9/11' is not mentioned at all within the game's narrative, and despite the game's historical setting is the 70s. In *Metal Gear Solid V:*

Ground Zeroes, in other words, the mnemonic icon of '9/11' is remembered within a fictional past, or rather represented as a metaphor.

On the other hand, by using this framework one may acknowledge how certain elements of the past are configured and re-imagined differently, selectively, or reductively. As I have written elsewhere (Caselli & Toniolo 2021), not only the very fact that certain prefigured elements tend to be re-configured in virtual worlds more often than others is extremely significant, but also observing that certain re-configurations are more frequent than others can favour meaningful observations. On the one hand, by following the lead of Baudrillard, for example, we may observe how the icons, symbols, objects, and imaginaries of the Nazi Germany tend to appear, in virtual worlds as well, more often than others (Baudrillard 1981; Elliott 2017; Kingsepp 2007). On the other hand, certain 'existents' tend to be used more often as representations than others: several digital games that re-imagine the Second World War, for example, tend to focus on weaponry and virtual objects, even extracted from their original context. Digital games such as the side-scrolling shoot'em up *Azur Lane* (Shanghai Manjuu & Xiamen Yongshi 2017), for example, provides users with a huge number of collectable weapons and warships (represented as beautiful girls), as well as of data, information, and statistics for each object. All these objects, nonetheless, are almost entirely devoid of any reference to the context they were originally used within, i.e., the Second World War. It therefore may be observed how *Azur Lane* (ibid.) provides users with a highly fetishised and commodified past, transformed into mere objects as well as into feminine bodies:

> "In other words, [this example] provides us with two overlapping fetishizations: that of the past, intended as [...] the representation of a confused, emptied of references, and chaotic landscape; and that of erotized bodies and characters. We may interpret both as oriented towards commodification [...]. *Azur Lane*'s shipgirls' bodies, at the core of the marketing of the game, can be collected, purchased, boosted up, extended, modified; they are not only objectified feminine bodies, and therefore fetishes, but also 'historical' bodies that themselves aestheticize, reinterpret [...] the past, being it a war technology or a traditional piece of clothing, an icon, or a symbol (from swastikas to the Great Seal). Historical objectifications are themselves re-imagined, virtualized" (Caselli & Toniolo 2021).

5.1.3 Refiguration of virtual sites of memory.

'Refiguration' refers to the reception and interpretation of a given text by the readers and can therefore be associated with the plurimedial level of analysis of cultural expressions (which consists in how the text in question is experienced, received, and interpreted – see Erll 2011a). It is in the act of reading, according to Ricoeur, that fiction is reconnected with (and reconfigured by) the world of action: "it is only in reading that the dynamism of configuration completes its course. And it is beyond reading, in effective action, instructed by the works handed down, that the configuration of the text is transformed into refiguration" (Ricoeur 1988 [1985], 159). The interpretation of a text is not only something individual (despite being framed towards a community of interpreters and upon a repertoire and tradition of previous interpretations): it also becomes something collective, as individual interpretations influence cultural practices ('actions') and therefore produce novel prefigured elements.[89] In addition to this influence, which derives from the formal structure of texts, more evidently texts influence and affect culture through their content. This is the very interest of cultural memory scholars. Inspired by Ricoeur, Erll claims that

> "Representations of historical events (such as wars and revolutions) and characters (such as kings and explorers), of myths and imagined memories *can* have an impact on readers and *can* re-enter [...] the world of action, shaping, for example, perception, knowledge and everyday communication, leading to political action – or prefiguring further representation (and this is how the circle of mnemonic mimesis continues to revolve)" (Erll 2011a, 155, emphasis of the author).

Virtual worlds can be refigured in many ways across memory cultures.[90] Some virtual worlds become iconised as memes, or symbols, used within the political debate, such as

[89] One of the broadest effects of textual refiguration that Ricoeur mentions is temporal orientation, intended as the influence that narrative structures have in our understanding of the passing of time, of the meanings of certain events, and of our acknowledging the passing of time and the relationship between past and present.

[90] This view may also be complemented with the encoding/decoding model provided by Stuart Hall (1973) and borrowed by Hammar (2019b; see also Erll 2011a, 125; Prown 1982), which points to a discursive embedding of producers and receivers of a given text (Hall 1973, 128). According to such a model, encoding refers to the production of any message, intended as a system of coded meanings, and decoding points out the reception, understanding, and interpretation of any text. Decoding prescinds from encoding, and can lead to misunderstandings or misconceptions of the intentions of the encoder. Once any message is 'decoded', it has an 'effect (however defined)' and produces consequences that lead themselves to novel encodings of texts. By reinterpreting it through philosophical hermeneutics, I can claim that texts influence the hermeneutic horizon of understanding, interpretations, and textual production, i.e., "'have an effect', influence, entertain, instruct or persuade, with very complex perceptual, cognitive, emotional, ideological or behavioural consequences" (Hall 1973, 3).
It is exactly such a 'transposition' of decoded meanings into conduct or consciousness, and therefore into novel textual encodings, that I may focus on by speaking of refiguration of virtual worlds.

Untitled Goose Game (House House 2019);[91] others aim at persuading, informing, or mobilise users, such as *September 12th: A Toy World* (Frasca 2010) or *Darfur is Dying* (Ruiz 2006), or more broadly at commenting on the actual world;[92] still others can move users to explore, traverse, and know the actual world (see augmented reality virtual worlds such as *Pokémon Go* (Niantic et al. 2016), or virtual worlds designed to promote actual museums, sites, or places such as *Prisme7* (Game in Society & Bright 2020), designed to represent and simulate the heritage of the Centre Pompidou.

Despite this, it is hard to provide an extensive list of how virtual worlds can be refigured in a memory culture, the subsequent framework is aimed at providing a taxonomy of how virtual worlds can circulate and affect other media forms, therefore moulding the memory culture that receives them, and within which they are activated and negotiated. Being that refiguration is something that can be observed and carried out by the members of a mnemonic community and is not something that can be designed by virtual world designers, the subsequent framework will only refer to receivers, being those users, scholars, journalists, or whoever may be interested in the influence that virtual worlds may have in the surrounding memory culture.

Considering an element *Z* of a memory culture and an evocative-narrative element *Y* within a virtual world (regardless of how it is configured within the virtual world in question), or if the virtual world itself intended as a representation of the past, and specified that every *Z* functions toward a specific set of mnemonic communities, we will distinguish between:[93]

- *material refiguration of* Y.
Here, *Z* is intended as an artefact, a medium, a technology, or a text. The goose from *Untitled Goose Game* (House House 2019) represented in billboards and posters

[91] In October 2019, the goose from *Untitled Goose Game* (House House 2019) appeared in some billboards during an anti-Brexit rally. Some commented on that usage that "[s]omewhere along the path of popularity […] the goose became more than just a symbol of mayhem. Now, it's become a leftist icon on the internet and in real-life […]" (Khalid 2019).

[92] See Bogost 2007; Bogost et al. 2010.

[93] Inspired by the semiotic model provided by Erll, I will observe three dimensions of cultural memory as follows: material dimension, which refers to mnemonic artefacts, media, technologies of memory, texts, from architectures to books, from films to photography, from art to urban planning; social dimension, referring to mnemonic practices that 'carry' cultural memory, from rituals to commemorations, practices of production or recall of cultural memory (or knowledge), as well as the institutions or persons involved; and mental dimension, including the schemata, concepts, and codes that enable (and influence) collective remembering through symbolic mediation, and at the same time, the effects that remembering has on the mental dispositions that are predominant in a community (Erll 2011a, 103-104).

during anti-Brexit rallies in October 2019 is a clear example of such refiguration. Concepts such as that of desemiotization and resemiotization (Lachmann 1993), mnemonic iconization (Erll 2011a), and remediation (Bolter & Grusin 1999) are all pivotal in inspecting and discussing material refiguration. Virtual characters, spaces, objects, symbols can (and are) painted on walls, become subjects of movies or multimedia franchises, take part in the public debate, or become, even in spite of themselves, ideologically charged symbols. Intertextual references and processes of canonisation are all intended as examples of material refiguration but also fanfictions and other forms of participatory fandom entailed in contemporary popular culture (see Barton 2014).

- *Mental refiguration of Y.*

Here, *Z* is intended as a schema, a concept, a code, or a mental disposition enabled through symbolic mediation (Erll 2011a, 103-104). Users of virtual worlds tend to be influenced by how these worlds depict the past even in their mental dispositions, or in the very way they understand and interpret their present. This is particularly observable in how contemporary relations of power determine how we recollect our own past, influencing popular media and therefore virtual worlds (Hammar 2019a). In this sense, virtual worlds are intended as nothing more than a technology, or medium, that contributes towards constructing (Hammar speaks in terms of 'manufacturing') dominant cultural memory among others, for example marginalizing groups or counter-hegemonic ideologies, dehumanizing or underrepresenting antagonists and subalterns (ibid.; see also Beverley 2001, 54; Calafell 2015; Hall 1997; Pandey 1995; Said 1979 [1978]; Spivak 2010 [1988]). Every representation of the past, both explicit or metaphoric, affects our very way to understand and recollect it even when we enquire, receive or understand novel representations of it. In other words, mental refiguration refers to all those concepts and mental dispositions that derive from virtual world experiences.

- *Social refiguration of Y.*

Here, *Z* is intended as a practice, a ritual, or a commemoration that 'carries' cultural memory. Cosplaying can be a good example of such practices: in cosplaying, fans produce their costumes inspired by fictional characters and appropriate existing stories or imaginaries through performativity (Lamerichs 2011; see also Butler 2004), therefore momentarily escaping from their actual identities and entering in an imag-

inative world through role/identity-transformation (Rahman et al. 2012). Cosplaying can be inspired by digital games, among other popular media, and can therefore imply the transformation of a fan into a virtual character – therefore offering a clear example of social refiguration of a virtual world.

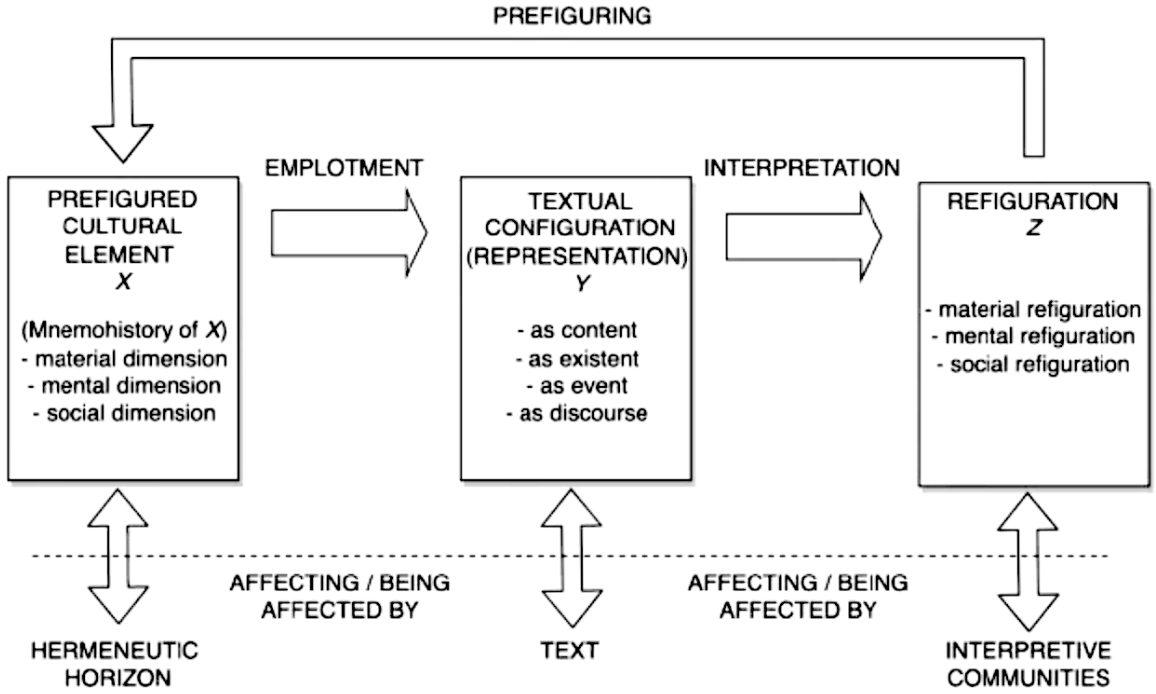

Figure 2. Representation within Virtual sites of memory

It is through the constant transformation of preconfiguration in configuration (emplotment), configuration in refiguration (reading and interpretation), and refiguration in prefiguration (the impact interpretation has on readers and their behaviours and beliefs) that certain 'interpretive communities' (communities that share a same way of reading and interpreting, i.e., that collectively refigure certain representations – see Fish 1980) raise. By paraphrasing Ricoeur's, "[w]*e are following therefore the destiny of a prefigured time that becomes a refigured time through the mediation of a configured time*" (Ricoeur 1984 [1983], 54, emphasis of the author). Virtual sites of memory configure prefigured elements and meanings, that then become refigured by their reading and interpretation, therefore mediating between a pre-existing and surrounding memory culture and its 'potential restructuring' (Erll 2011a, 156). For a scheme that summarises the framework for representational aspects of virtual sites of memory, see fig. 2.

Closely interconnected with social and mental refiguration of representational aspects of virtual sites of memory are all those practices, performances, behaviours, knowledges, schemata, and concepts that themselves happen, get performed, or actualised, *within* virtual worlds – i.e., virtual-mental and virtual-social refiguration. Many are the examples of funerals and commemorations held in virtual worlds, such as that of Hydaelyn, setting of *Final Fantasy XIV: A Realm Reborn* (Square Enix 2013), to mourn the death of users (Elliott 2020)[94] or celebrities (users paid tribute with spontaneous memorials or ceremonies, e.g., for the death of the mangaka Kentaro Miura of May, the 19th 2021 – see Parrish 2021). Other times, virtual worlds such as *Second Life* (Linden Lab 2003) have become sites for museums, memorials, and monuments dedicated to collective traumas or events (such as 9/11 or the digitization of other traumatic memories: see Trezise 2011).

Differently from all the representational aspects of virtual memory-making discussed so far, these examples of collective memory practices performed within virtual worlds are unthinkable within other media, as they rely on the phenomenological access granted by virtual world experiences – i.e., simulative aspects of virtual technologies. In other words, such practices are not pre-designed or represented but instead actively invented and performed by users as de-facto participatory cultural expressions.
It is therefore worth inspecting how virtual worlds can become virtual sites of memory due to simulative aspects and simulated processes.

5.2 Framing simulation in virtual sites of memory.

As seen during the first part of the thesis, and in sections 4.3-4.4, virtual worlds do not only represent the past but, and this is a defining characteristic that differentiate them from other technologies, they simulate it and make virtual versions of it accessible. Therefore, it would be counterproductive and misleading to limit an enquiry on virtual sites of memory to representational aspects.
Throughout the following paragraphs I will focus on virtuality intended not only as the combination and integration of digitality and fictionality but, as mentioned at 4.4, as something 'potential'. As noticed by Gualeni, "[b]y definition, every simulation is characterized by the potentiality of virtual alternatives to its current state" (Gualeni 2015, 54). In this sense, the unexpressed combinatorial content of a virtual world is to be intended as potential, and therefore virtual, while on the other hand only the current state of the virtual

[94] https://www.youtube.com/watch?v=19g85-kSONM&t=764s.

world is something non-virtual, and therefore actual. As a matter of fact, before a virtual world gets experienced or accessed by users all the combinatorial possibilities it provides remain available (ibid.), and therefore virtual.

To virtualise the past then means not only to re-imagine it but also to make it possible again, reframing it, transforming it, as well as changing its course. These paragraphs will be dedicated to this matter: I will analyse how virtual worlds as hermeneutic technologies can allow users to 'remember otherwise' their own past. I will focus on how virtual worlds allow us to 'fluidify' the past, both for what concerns their design and for what concerns the activation and interaction by users: this will pave the way for the consideration of virtual embodiment towards existential perspectives, from the next chapter on.

As many scholars point out, interactive media, and especially digital simulations, make accessible in an unprecedented way the vulnerability of current states of things, and encourage modes of thinking that are no longer exclusively focused on actuality (Gualeni & Vella 2020, 72; see also Vella & Gualeni 2018):

> "[D]igital simulations inevitably show – in their several different ergodic possibilities and ramifications – that the current state of things could be different from what it actually, presently is, effectively fluidifying human thought […]. [W]hen visualizing several alternative possible states of things, and when manipulating and becoming familiar with these states, the user of interactive, digital simulations is likely to become more prone to embracing what could be over what is […]. The cognitive flexibility that could emerge from being in virtual worlds could, thus, facilitate both the envisaging of new possible courses of action and their acceptance. In this sense, experiences of virtual worlds are inherently expected to foster the involvement in processes that guide and promote sociocultural change" (Gualeni 2015, 125).

Such an extension of users' possibilities of agency (Gualeni & Vella 2020, 72) is directed also towards the past. Historical game scholars, as seen during chapter 7, speak in terms of experiencing the contingency of the past, and therefore of all histories. By using the terminology of Gualeni and Vella, I will claim that virtual worlds can fluidify how we think our past, and therefore can be used as technologies to 'remember otherwise', or to favour less deterministic understandings of the past – and therefore of the present.

A brief premise is necessary concerning how the 'fluidification' of the past I am dealing with is not something that exists only within digital simulative experiences. In a sense, virtual worlds 'fluidify' the past also through their representational aspects (as we have seen throughout the previous paragraphs): the very possibility to represent fictional pasts or to project pasts onto the future, and to invent fantasy past worlds, is in other words present even outside of simulations. In similar way to the cinematic audience or to readers, virtual world users are surrounded by re-imaginings of the past that show its inherent vulnerability and contingency, favouring novel ways to think about it as well as to remember it. The chance of actively re-enacting the past in different ways, or to follow different paths, is on the other hand something virtual worlds provide differently from any other technology. Being that agency and interactivity are the defining characteristics of virtual worlds, I will discuss and analyse different ways in which they can 'fluidify' the past. Representations will be implied - as no simulation exists without an at least minimal form of representational content. Even simulative aspects of virtual sites of memory, in other words, must be functionalised.

5.2.1 Procedural rhetoric and procedural memory.

To begin with, virtual worlds can favour remembering by using procedural rhetoric. In this case, the specific kind of memory elicited by procedural rhetoric may be collective procedural memory, i.e., how the "members of a mnemonic community can follow traditions or rituals without even knowing that they are learned and view their own behaviour as natural" (see 3.2.2), or individual procedural memory. I will distinguish between two kinds of procedural memory within virtual worlds.

1. *Procedural-transmedial/intermedial memories.*

A first kind of procedural memory within virtual worlds is that of control schemes or behavioural patterns that have already been used in other virtual worlds. Among other game scholars, Peter Howell provides a framework to catalogue and inspect the knowledge involved in, or gathered from, digital games (Howell 2016; Howell et al. 2014). Inspired by the author, I will distinguish between a 'transmedial' and an 'intermedial' knowledge: the former is formed across multiple virtual world experiences, such as that of pressing the start button when a digital game starts; the latter is a much more specific and contextualised knowledge, that refers to subsets of virtual worlds (Howell makes the example of "the

semantic knowledge that the 'Phoenix Down' item revives characters from death in the Final Fantasy series", idem, 2).[95]

Gaming conventions, gimmicks, and the use of control schemes within digital games are all examples of this: in first-person shooter digital games, skilled players know that the key 'R' is used to reload, and 'E' is used to interact with objects, vehicles, and doors. For a skilled first-person shooter player there is no need to watch the tutorial of a game to know that these are the keys needed to perform such actions. At the same time, such players know beforehand that the health of their character may be recovered in some way when they get injured, and that ammunitions or weapons can be found across the game space. All the expectations that players have when they play are inherited by previous, transmedial and intermedial knowledge of digital games in general, or of the genre, the franchise, or the series that a specific game belongs to (see also Van de Mosselaer & Gualeni 2020).

2. *Procedural-metaphorical memories.*

Inspired by Sebastian Möring's discussion on simulation and metaphor in computer games, I contend that virtual worlds can also simulate abstract concepts (Möring 2013, 69). Furthermore, simulations can be understood as "always already metaphoric" (Möring 2012, 14) since the very definition of simulation and that of metaphor are inherently similar: "the essence of metaphor is understanding and experiencing one kind of thing in terms of another" (Lakoff & Johnson 1980, 5), and "to simulate is to model a (source) system through a different system" (Frasca 2003b, 223), as summarized and observed by Möring (2012; see also Bogost 2007, 9).

Without deepening the relationship between the two concepts further (for which I remind the reader, among others, to Jesper Juul, who contends that "real-world actions have a metaphorical relation to the fictional in-game action" (Juul 2005, 196)), I will operationally assume that simulations can convey meaning as de-facto metaphors. Virtual worlds can trigger individual or collective memories through the procedures they invite users to perform.[96]

[95] Both can entail episodic, semantic, and procedural memory, and can therefore imply facts, events, concepts, and especially procedures from other games. Whilst we may describe semantic and procedural memory gathered from other virtual worlds or other media as the re-configuration or specific prefigured elements that allows intertextuality (6.1.1-6.1.2), the favouring of procedural memories' recollections within virtual worlds implies something that in other media is completely absent.

[96] By drawing on the example made by Möring (2012), we may understand The Marriage (Humble 2007) as a virtual site of memory allowing users remembering, for example, their own marriage, or the marriage of their relatives, or

By drawing on Jason Begy's application of the concept of 'structural metaphor' to board games (Begy 2015), I will also observe that certain procedures can elicit remembering of a collective past. A 'structural metaphor' consists in the use of a structured concept to structure another: the metaphor 'rational argument is war', for example, relies upon structural similarities between a lower level, familiar structured concept (rational argument) and a higher level one (war), and allows speakers and interpreters to conceptualize the former in terms of something more readily understandable (Lakoff & Johnson 1980, 61-68). Structural metaphors are necessarily historically situated and change according to their context of use: Begy observes that, since they manifest how a certain culture perceives its own world, they can be used just as other cultural elements to investigate how cultures understand their present and their past (Begy 2015, 6-7).

I contend that virtual worlds can simulate structural metaphors too: many management or strategy videogames, for example, simulate the metaphor 'time is a resource' by allowing users allocating energies to purchase time or to speed up processes; many adventure games simulate the metaphor 'life is a journey' (*Journey,* Thatgamecompany & Santa Monica Studio 2012); many role-playing games that of 'mind is a machine' or 'fate is a dice-game' (Disco Elysium, ZA/UM 2019). By grasping how several survival or strategy games are perpetrating colonialist metaphors of expansionist thinking and territorial expansion (Mukherjee 2017a, 29-52), similarly, we may experience remembering through playing. Re-enacting procedures of old games, in this sense, may become a way to remember how the culture that produced them used to perceive its own world. Accordingly, by engaging with sci-fi virtual worlds such as *No Man's Sky* (Hello Games 2016), which allows users to explore countless planets in a never-ending expansion through unknown, alien territories, users may find out that they are re-enacting and performing structural metaphors influenced by the colonialist mindset (Mukherjee 2017a, 29), therefore 'remembering' colonialism through procedural rhetoric.

5.2.2 Meta-memory simulations.

The 'fluidification' of the past through virtual worlds intended as digital simulations can also happen through meta-memory fictions. I term "meta-memory fiction" all those fictions that provide "critically reflexive perspectives on the functioning of memory, thus rendering

even a marriage they have seen in a movie or in a tv series, or in general 'marriage' as a socio-culturally defined concept.

the question of how we remember the central content of the remembered itself [...], [and that therefore] not only present past events, but also reflect on the possibilities of representing the past" (Neumann 2008a, 138). Several virtual worlds provide users not only with the possibility to reflect on memory (representing it, focusing on it through narratives, and so on)[97] but also with the chance to actively explore, investigate, create, reconfigure, and produce diegetic memories, therefore exploring the possibilities of virtualising memory. In all these cases, virtual worlds favour the reflection on memory not only through textual configuration but, most importantly, allowing users to manipulate and reconfigure that configuration. In other words, users of virtual worlds can actively co-shape fictional memories, as well as they can experience first-hand the vulnerability, contextuality, and unreliability of memory. In this sense, virtual worlds can take part in a broader multimedia re-mediation of the very concept of memory, constructing novel ways to think of our memories.

Just to provide a few examples of such simulations: the psychological explorative game *The Town of Light* (LKA 2016) follows the story of Renée, ex-patient at the mental hospital of Volterra, in her journey to recollect lost memories. As users explore the mental hospital, now abandoned, they trigger traumatic dismissed memories bound, for the main character and avatar of the game, to the place where she was hospitalized. The virtual world of *The Town of Light* (ibid.) allows the player therefore to experience first-hand the effects of memory-losses, and the slow and painful journey of recovering obliterated memories (both individual – the traumatic past of Renée – and collective – the reality of mental hospitals in Italy before the reform of the psychiatric system of the Basaglia Law, 1978). To progress through the game, users must actively 'trigger' Renée's memories by finding objects or places that serve as prompts for the activation of engrams, or as memory cues,[98] for the

[97] Examples of meta-memory virtual fictions can be found in the *Final Fantasy* series. As I will claim later, discussing virtual subjectivities and amnesiac characters, the games of this series usually focus on the nexus between identity and memory, and therefore deal with amnesiac heroes that look for their lost role, identity, and place in the world (Stang 2017). The role-playing game *Final Fantasy VIII* (Square 1999) also provides an example of collective recollection depicted during one of the most important sequences of the game: in a pre-scripted animated sequence, the characters explore a place where they all lived, long before forgetting it. During the exploration, they start remembering all together as they speak and share thoughts from their own past. Though this, as well as other sequences, is clearly an example of a virtual meta-memory fiction, such a scene is not an interactive one, and players cannot but observe what is depicted on screen.

[98] Within memory studies and neuropsychology, engrams are clusters of neurons that store memories in neuronal connections, and that therefore include their own triggers for enacting the corresponding memories (Josselyn et al. 2015, 521). Under both sensory/sensational prompts from outside the head (i.e., memory triggers or cues) and conceptual prompts inside the head, groupings of neurons that correspond to certain memories activate and recreate those memories, therefore allowing remembering (idem, see also Reimanis 2017, 11). According to Merlin Donald and John Sutton, such engrams can be externalized through media, codes, tokens, or symbols (Donald 1991; Sutton 2006;

main character, as they prompt or trigger her episodic recollection of a traumatic past. Similarly, other digital games that feature amnesiac characters and their journey to recover their memories such as *S.T.A.L.K.E.R.: Shadow of Chernobyl* (GSC Game World 2007) favour meta-memory reflection on processes of recollection and how remembering influences personal identity (see Mukherjee 2011). *Before I Forget* (3-Fold Games & Plug In Digital 2020), another explorative digital game, focuses on a main character living with dementia: it is by exploring her own house that users can uncover her past. Both these virtual worlds depict, and then make accessible, memory intended as an active, at times painful, vulnerable, and subjective process of reconstruction.

In a similar guise, but devoid of investigative aspects, *What Remains of Edith Finch* (Giant Sparrow 2017 – an explorative adventure game) allows users to explore a huge family house, as well as to experience the death of its inhabitants by reading their diaries. The memories of their deaths arise from personal traces they left behind, now turned in memorials, and the reading of their memories transforms the game into an imaginative re-enactment of their last moments, constructed through interactive re-mediations (comic-books, drawings, photographs) that can only be accessed by written words, and then re-imagined by the main character (and enacted by users). It turns out, in the end, that the whole game consists in the reading of the main character's diary, in a Chinese boxes system of remembrance. Through the virtual experience of the game, users can therefore access memory intended as both a subjective and imaginative recollection, that ultimately obliterates or re-writes the past instead of carrying it onto the present. This re-writing and re-imagining happens thrice within the game: users engage with a virtual world that is nothing but an interpretation (of the reader of Edith Finch's diary) of an interpretation (Edith Finch that reads all the diaries in her family house) of an interpretation (letters, photographs, reports, dreams, diaries written by those who are dead or by who was in touch with them) of the past. It is only within this severely mediated memory space that users, and the characters with them, can engage with the past of the Finch family.

The virtual experience *Promesa* (Palacios Gechtman 2020) retraces personal memories and collapses present, past, and imaginative landscapes onto a same ever-changing virtual environment that users traverse as they follow the lead of a conversation between grandfa-

2010). An external memory cue, or memorabilia, is in turn to be intended as something that can activate the process of retrieving a memory in the mind (Belcher & Kangas 2013; Goddard et al. 2005; Intons-Peterson & Fournier 1986; Miles 2013; Petrelli et al. 2008; Sherman 1991; Van den Hoven & Eggen 2014; Ziljema et al. 2017).

ther and grandson. The gameworld represents Italian and Argentinian landscapes, as well as irreal, metaphysical environments, and it makes accessible memory intended as a personal, fragmented process of recollection, firmly situated within the present and directed towards a fragmented, highly subjective, and nebulous past. A similarly subjective and highly personal approach to memory is provided by the horror game *Silent Hill: Shattered Memories* (Climax Studios 2009), in which users play the role of a father who remembers traumatic and horrific dismissed memories, now inhabited by horrible monsters, and enmeshed with rotten, abandoned landscapes.

Different, and maybe more interesting from the memory perspective, the point-and-click series games *Attentat 1942* (Charles University et al. 2017), *Czechoslovakia 38-89: Assassination* (Charles University et al. 2015), and *Svoboda 1945: Liberation* (Charles Games 2021) focus on past events that users must investigate and reconstruct. They both consist of the search and analysis of several personal memories of the witnesses of certain events, and then of the reconstruction of that event based on their words, perspectives, and beliefs. Based on historical contexts, such games make accessible the past as 'composed and multifaceted, intimate, idiosyncratic, and personal' (Pötzsch & Šisler 2016, 20).

Lastly, being technological, digital artefacts, i.e., machines designed to match input with pre-determined digital outputs, virtual worlds have always been distinguished by the reversibility of most of their states. This is particularly observable in digital games, where both reverting causality and restoring previous game states are "granted by the formal, modal nature of digital processes" (Gualeni 2015, 124). These allow players not only to return to earlier states but, quite often, to interact with a game state knowing its immediate future conditions (Nitsche 2007, 148).

Virtual worlds such as those of *Assassin's Creed* (Ubisoft Montreal 2007) and *Nier: Automata* (PlatinumGames 2017) can therefore be intended as meta-memory simulations due to their use of the save-game function. The former, an action-adventure historical game, clarifies that the past users' access is only a simulation, and therefore make them reaccess it each game over. In this way, it transforms the meta-operator of the save-game (Fassone 2017) into a diegetic device, inviting users to reflect on technological memories. Similarly, *Nier: Automata* (PlatinumGames 2017) features characters that each time die and get re-fabricated, maintaining their memories through memory-chips. Both cases allow me to focus on how virtual worlds in general that feature save-state functions are, and

can be experienced as, de-facto meta-memory fictions. Every time a virtual world allows users to reload saved files, it allows them to fluidify their past within the game:[99] improving performances, making different choices with novel knowledges, and so on. This is regardless of meta-textual references or narratives. Checkpoints, save-game options and restart buttons are all meta-operators that grant users the possibility to undo their actions, to experiment diverse configurations, new behaviours, or different choices, and therefore to understand virtual worlds as controlled, reversible experiences that at any time can be subverted, re-experienced, and transformed (see also Alvarez Igarzábal 2019; Murray 1997, 35-36; Wolf 2002, 80). This is despite such novel re-configurations lead to alternative scenarios that are themselves pre-designed or 'emergent', i.e., not predicted by designers and nonetheless possible within the limitations that the virtual world in question provides (Juul 2002). I will deal more with the existential implications of the reversibility of virtual worlds later, see 7.2.2 and 8.1.2.

5.2.3 Past-in-the-making.

Virtual worlds, intended as procedural technologies, also allow users to experience the past-in-the-making. This is another distinctive way simulations afford memory-making and can be understood as virtual sites of memory. In this sense, every simulation of every kind of past may provide users with the conceptual or experiential tools to re-think their own pasts in light of its virtualisations.

Some virtual worlds[100] describe users' actions and choices as already happened within their fictional world, and therefore as past events or (pseudo- or fictional-)historical events. Others emphasize how the very choices of users are transforming fictional histories or are turning into memory as they happen. As pointed out by Koski, for example, the pseudo-historical game *Valkyria Chronicles* (Sega 2008) "is about history-in-the-making, about the transformation of events into history, and about how they are retold to those who come after the events transpired" (Koski 2016, 409) due to the use it makes of the system interface and menus as diegetic war-reports. In this sense, the game examines the representations of the past itself, "taking note of the way history is *made* instead of only reproducing parts of it" (Koski 2016, 409, emphasis of the author).

[99] As well as their memory of it, as I will discuss throughout the following paragraph.
[100] This happens within a hermeneutic circle of interpretation, and through the figure of an implied designer; see 2.1 and 7.2.4.

The turn-based strategy game *Fire Emblem: Three Houses* (Intelligent System & Koei Tecmo 2019) follows the same lead: all the actions users perform actively shape the history of the world, as it gets retold for an unspecified posterity – after each level, the outcomes of the users' behaviour are 'written' as the history of the fictional world of the game. *What Remains of Edith Finch* (Giant Sparrow 2017), as well as *Battlefield 1* (DICE 2016), and *Mafia III* (Hangar 13 2016) allow players to act within a flashback: in *Battlefield I* (DICE 2016) the main characters remember their own past by writing diaries or looking at photographs, and it is only within that past that users can play; in *Mafia III* (Hangar 13 2016) the gameplay is interspersed by interviews, journals, and fragments of a fictional documentary that focus on the history of the main character – players control him and at the same time his story already happened. This latter example, as well as *Fire Emblem: Three Houses* (Intelligent Stystem & Koei Tecmo 2019), even more interestingly, allows players to achieve different endings depending on their choices: players can therefore actively (and explicitly) change the very past of the game as it is being retold.

Whilst such examples are those of pre-scripted and designed, conditional outcomes that construct a conditional past, the strategy genre grants the access to a past that in unprecedentedly open to reinterpretations, re-configurations, and changes. The grand strategy game *Europa Universalis* (Paradox Development Studio 2000), for example, lets users take control of one of several European nations from 1492 to 1801 and allows them to construct a whole fictional history, entirely different from the actual one. Every choice or configuration that the virtual world of *Europa Universalis* (ibid.) therefore provides is to be intended as 'emergent', i.e., unpredicted by its designers. Users can create a whole new past and can endlessly re-configure the fictional past they access.

In all these cases, by allowing users to access the fictional past, virtual worlds make it accessible, therefore favouring its presentification by users. They reflect, more or less explicitly, on memory as an active process, or performance, and therefore re-mediate and simulate its functioning, as well as its vulnerability and mutability. Regardless of the presence of pre-designed virtual pasts, or of emergent past experiences, virtual worlds can therefore become a way to reflect and experiment with memory. Such a possibility is a technological one: on the one hand, and differently from other fictional worlds, virtual worlds favour meta-memory reflection through technological mediation and all the peculiar features that digitality and simulation technology carry with them. On the other, and following this lead,

they cannot but provide an understanding of memory and the past that is both empowered and constrained by technological mediation.

5.2.4 Virtual subjectivities towards a virtual past.

Another interesting aspect of such a 'fluidification' is that it usually coincides with the taking of certain virtual roles, or subjectivities. For now, I shall limit myself to consider the effects that adopting a virtual subjectivity may have for virtual worlds intended as virtual sites of memory. This perspective will bridge the previous chapters of the thesis and the following one but will only focus on the use of subjectivity to reflect on the past.

In *Consuming History* (2009) Jerome De Groot focuses on (among other topics) reality television, online virtual worlds, and other forms of re-enactment and claims that "the dominant mode of interaction with the past in contemporary culture is through embodiment, engagement, and experience [as well as] the revelation of the contemporary self through the consideration of the historical subject" (idem, 180; see also idem, 40-41).
In other words, the possibility to 'fluidify' the past and memory in these worlds derives also from the controlled freedom they give users towards their identities, personal beliefs, and will.

Historical virtual worlds imply the user's alignment with one or more historical subjectivities (see Uricchio 2005, 334) – therefore, historical game scholars echo Mark Gilderhus' definition of historicism as the attempt to imagine the perspective of historical actors as a way to comprehend the past (Gilderhus 2003, 45-46), and contend that by experiencing a 'particular kind of subjectivity' (King 2007) users can achieving historicism (see also Peterson et al. 2013, 39).[101] Nonetheless, basically, every virtual subjectivity can favour the 'fluidification' of the past by users. Historical and pseudo-historical subjectivities explicitly favour such processes: role-playing and role-based choices can, in this sense, be understood as ways to re-enact the past and to experiment with it by adopting different perspectives, even within fantasy configurations of prefigured mnemonic elements. What is generally observable within virtual worlds that allow users to control specific characters (differently, e.g., from grand strategy digital games where users are not embodied in any figure) is an 'increasing relativisation and individualisation of the past' (Caselli & Toniolo 2021), in

[101] The alignment of subjectivities that digital games favour has been frequently discussed over the years (see also Bayliss 2007a; 2007b; Calleja 2011; Gee 2008; Grodal & Gregersen 2008; Grodal 2003; Kania 2017; Klevjer 2006b; Leino 2010; Taylor 2002; Vella 2015; Vella & Gualeni 2018; Wilhelmson 2008), and I will deal with it carefully later, in chapter 8.2.1.

which the past is seen from the perspective of an individual who has own background, beliefs, and will, and contributes to writing the past as much as other individuals.

In *Fire Emblem: Three Houses* (Intelligent System & Koei Tecmo 2019) users control a professor that takes under his/her wing one out of three rival commanders, destined to change the fate of the world as he/she grows up. By interacting with them, users get in touch with their personal traumas, their backgrounds, their responsibilities, and throughout several adventures they can understand why they make certain choices (eventually leading to the death of thousands of people), in turn deciding whether stopping them or not in certain situations. By following them, by controlling them during battles, by training them, and by flirting with them, users can both see (and forge) a fantasy history from their perspective and engage with them to the point they 'fall in love' with them (see also Hasegawa 2013). Characters take part in major historical events and fight wars that change forever the history of the continent of Fódlan: their backgrounds and choices can therefore favour the reflection on actual historical characters, and actual wars, by emphasizing the empathic and immersive engagement with them that the virtual world allows. *Three Houses* re-imagines a fictional past through a relativistic perspective: even mass-murder can become understandable and even mass-murderers can be understood, if not even loved. Users may even project themselves onto them, and therefore reinterpret the actual past according to virtual memories they have of such virtual experience – i.e., they may fluidify the actual past through virtual memories of it. By getting emotionally attached to Edelgard, and by creating several virtual memories in which she is present (of the battlefield, of dialogues, side activities, and so on), one may transform how she, e.g., perceives past mass-murderers, becoming more inclined to recognise that even behind those tremendous acts were people with feelings, backgrounds, and so on – i.e., human beings, with a human dimension beyond their political life (just as that explored by the game on the side of battlefields and strategy). *Azur Lane* (Shanghai Manjuu & Xiamen Yongshi 2017) furtherly provides users with the possibility to play "a virtual past in which even Nazi and American can fight side by side and become dorm mates" (Caselli & Toniolo 2021).

Virtual sites of memory, in this sense, provide access to highly immersive prosthetic memories (see 3.2.4) that allow users to engage with the historical or collective past of other mnemonic communities by favouring also bodily, sensuous, and emphatic mnemonic role-play. Whilst Landsberg introduces the concept of prosthetic memory by speaking of non-virtual mass media such as films, that "[engage] us in a bodily way: haptically, aurally, vis-

ually" (Landsberg 2015, 30), I will emphasise how virtual sites of memory not only favour identification and prosthetic memory-making by means of other 'representational' media but, as we have seen so far, by making prostheses experienceable in a phenomenological sense.

5.3 Virtualising the past.

I may list two further segments to my framework dedicated to simulative aspects of virtual sites of memory. Being that the processes and meaning of a simulation can be designed, I find it productive to distinguish between a production-side and a reception-side, as I have done for prefiguration and refiguration. With reference to the previous segments of the framework I will claim that, once on the production-side of a virtual world designers have identified the implied mnemonic communities they are referring to; and have acknowledged an element *X* within the correspondent memory culture as prefigured, they may decide to:

- *Functionalise X as a virtual site of memory – as a simulation of X:*
    - *Transmedial/intermedial procedures*;
    - *Metaphorical procedures*.

On the other hand, given a virtual site of memory *Y*, and before on the reception-side of a virtual world users acknowledge *X* as prefigured; and identify the correspondent mnemonic communities, they may:

- *Functionalise Y as a virtual site of memory – as a simulation of X:*
    - *Transmedial/intermedial procedures;*
    - *Metaphorical procedures.*

In both these schematisations, 'metaphorical procedures' includes both processes that simulate structural metaphors, meta-memory simulations, past-in-the-making, and the taking of virtual subjectivities. I therefore schematise the framework as follows:

- *Production-side functionalisation of virtual sites of memory:*
    - *Identify implied mnemonic communities*;
    - *Acknowledge X as a prefigured;*
    - *Functionalise X as a virtual site of memory – as a representation of X; or*

    - *Functionalise X as a virtual site of memory – as a simulation of X.*
- *Reception-side functionalisation of virtual sites of memory:*
    - *Functionalise Y as a virtual site of memory – as a representation of X; or*
    - *Functionalise Y as a virtual site of memory – as a simulation of X;*
    - *Acknowledge X as prefigured;*
    - *Identify implied mnemonic communities.*

Functionalisation is necessary for the simulative aspects of virtual worlds too: without functionalising them, e.g., processes cannot be interpreted as metaphors of structural metaphors.

The present framework has allowed me to focus on virtual worlds intended as: referential, as they (similarly to texts) represent the past drawing from prefigured elements, genre conventions, topoi, clichés, and archetypes inherited by other texts (i.e., mediated memories); technological, as they empower (e.g., the save state in digital games) and at the same time constrain users due to, among other things, technological capabilities or limitations; and simulative, as they re-arrange and disclose virtual pasts that become accessible, re-accessible, and changeable at will. It is in this sense that virtual worlds may become virtual sites of memory: on the production-side, they can be designed to favour remembering or to take part into a broader cultural memory framework due to their simulative or representational aspects. On the reception-side, they can be functionalised as sites of memory and understood, interpreted, and used as engaging with the past and with memory. Once users functionalise them as virtual sites of memory, or functionalise some of their elements as such, they can 'fluidify' the past: re-imagine it, re-interpret it, relativise it, reverse it, transform it, or think it otherwise. Therefore, virtual sites of memory can favour the 'fluidification' of memory itself, by representing it and simulating it as fragmented, re-accessible, vulnerable, and technologically mediated.

This framework can be used to design or analyse how virtual sites of memory deal with the past, and therefore:

- To emphasise the intertextual dimension of virtual worlds, and to understand their memory-making potential as framed towards a broader hermeneutic, intertextual horizon, and therefore to invite reflection on how virtual worlds can be carrier of certain culturally mediated understanding of the world or of the past.

- To understand how virtual worlds, intended as fictional worlds, may fragment, re-imagine, or re-interpret both the past and memory.
- To point out the trajectories of the representations of the past and of memory, and favour a closer consideration of how virtual worlds affect such trajectories, construct peculiar communities, or (intentionally or not) mediate and produce certain meanings.
- To look at how virtual simulations affect our understanding of the past and memories due to their very features of technological, predictable, and therefore reversible technologies.

A further avenue of this research, that would take me far from the matter in hand here, would be considering virtual worlds intended as cultural objects to observe, study, and analyse to understand the culture that produced them. The approach of material culture theory, among others, considers cultural objectivations as primary data to study "the beliefs – values, ideas, attitudes, and assumptions – of a particular community or a society at a given time" (Prown 1982, 1; see also Woodward 2007). Towards material culture theory, material artefacts are considered as evidence through which culture is created and carried on, rather than mere illustrations (ibid.). Such approach is shared, within memory studies, by all those studies that focus on the material dimension of a memory culture and can be fruitfully applied to virtual worlds. By addressing concepts such as musealisation, nostalgic trends, and vernacular memory-making through virtual worlds intended as cultural objectivations, we may also achieve meaningful insights on preservation and virtual heritage. Further avenues of this research may tackle these topics, which I have already addressed in an article co-authored with Krista Bonello Rutter Giappone (Bonello Rutter Giappone & Caselli 2021).

Throughout this and the previous chapter, I have been addressing virtual worlds as hermeneutic memory technologies and defined them as virtual sites of memory. This allowed me to frame their representational, simulative, and technological complexity towards a broader cultural memory framework. But virtual worlds not only remember the past on our behalf, or allow us remembering it thgough them, they also actively provide us with experiences to remember, and with unprecedented ways to remember them. By doing so, virtual worlds affect our very existence, and not only our culture. To address such dimensions, I shall address virtual worlds as embodied memory technologies.

Chapter 6. Virtual memory.

In chapters 4 and 5, I have been dealing with how virtual worlds favour memory-making as hermeneutic memory technologies. The engagement with virtual worlds and virtual memories also has existential and phenomenological implications, which intersect with hermeneutic ones during the experience.

It is considering the existential and subjective dimension of the engagement with memory within virtual worlds that will allow me to answer questions outside the field of hermeneutics, historiography, or history, such as: how do human beings engage with virtual memories? Are virtual memories different from actual ones? What does it mean to remember virtual experiences? And do memories of virtual worlds affect human subjects in existential terms? As a matter of fact, instead of favouring remembering through interpretation (as hermeneutic technologies), virtual worlds may also be considered embodied technologies through which, and enmeshed with which, we remember. To tackle the relation between memory and subjectivity in virtual worlds requires, in other words, a slightly different approach than the one I have been following so far: on the one hand, inclined towards existential phenomenology instead of hermeneutics, and on the other hand, focusing on embodied memory technologies instead of hermeneutic ones.

As outlined before, it is worth specifying once more that no technology is to be interpreted as strictly 'existential'. Rather, regardless of the relation we have with it, every technology has existential implications for human beings. Accordingly, I will not speak of 'existential memory technologies' but, rather, of the existential implications the relations with memory technologies may have on human subjects. To refer to the definition Michel Foucault gives of 'technologies of the self', but at the same time extending its definition to every other kind of technology, I will analyse how technologies

> "[P]ermit individuals to effect by their own means or with the help of others a certain number of operations on their own bodies and souls, thoughts, conduct, and way of being, so as to transform themselves in order to attain a certain state of happiness, purity, wisdom, perfection, or immortality" (Foucault 1988, 18).

As I will explain later, to deal with the existential implications of the engagement with virtual worlds it is necessary to understand how we develop existential projects within them, and therefore how we adopt virtual subjectivities as we engage with them. Virtual subjects

can therefore be intended as subjects that arise from the engagement of actual subjects with the virtual world: they are hybrid subjects, that perform hybrid fictional/real actions, and that therefore remember hybrid fictional/real memories. This hybridity can be described and analysed as an embodied (or cyborg) relation with memory technologies:

virtual subject ⇢ virtual memories

Which is nothing but a rephrased version of

(human/virtual technology) ⇢ virtual world

I will dedicate the rest of the chapter to virtual remembering as arising from embodiment relations between actual human subjects and virtual technologies. This will allow me to understand how virtual memories take part in the development and adoption of virtual subjectivities, and therefore to frame the existential implications of virtual memories towards a broader problematisation of the existential impact virtual worlds may have on human beings.

6.1 will be dedicated to the concepts of self and subjectivity towards existential philosophy and existential phenomenology, and to the role memory has in constructing the self. 6.2 will deal with a definition of virtual subjectivity, inspired and informed by related fields such as avatar studies, game studies, and existential ludology. 6.3 will introduce the concept of virtual memory and distinguish between several kinds of memory at play in virtual worlds. 6.4 will deal with how virtual experiences and virtual memory may affect our self, therefore conceived (6.5) as multiplicitous and in-between different worlds.

6.1 Subjectivity, memory, and selfhood.

Throughout this section, I will deal with the relation between memory and the self. To understand how virtual memories affect, and engage with, actual human subjects, an operational overview of how human subjects are affected by memories is needed. As I explained in chapter 2, even organic and bodily forms of memory are framed towards intersubjective, cultural memory. It is therefore improper, at least from my perspective, to speak of individual memory without considering it intertwined and nested in a broader cultural horizon or raising from intersubjective and social construction, as debated within cultural memory

studies or by the so-called social interactionist approach to human memory development (see Fivush & Reese 1992; Nelson 1993; Pillemer & White 1989; Reese 2002; Sutton 2002; Welch-Ross 1997).

The multidisciplinary debate on the contribution of memory to our sense of the self is lively. The literature on the topic includes a growing literature that merges cognitive science, developmental psychology, clinical psychology, and a wide range of different other subfields, ranging from neuropsychology and memory studies to phenomenology (see Guerini et al. 2019; Hoerl 2007). When discussing the relevance of the role of memory in the construction the self, it is almost unavoidable to step into autobiographical and episodic memory. However, there is no consensus about the relation between autobiographical memory, episodic memory, and the self, and the multidisciplinary debate is ongoing.[102] I am not interested in providing an ultimate theory of self and memory. Regardless of the methodological and theoretical approach one may have, it is almost a cliché to observe that the concepts of memory and self are always strictly related to the point that they usually become mutually dependent. By approaching the question operationally, I may claim that regardless of which one of the two precedes, reconfigures, and transforms the other, it is impossible to conceive the self without memory and vice versa. The self and memory are dynamically and mutually constructing each other's during life experience.

This has, and cannot but have, implications for human existence. Human existence is largely affected by the past and therefore memories humans have of it. It is therefore necessary to frame the role memories have in affecting our existence before proceeding. One of the most interesting accounts of memory and selfhood has been given within existential philosophy, and by the mid-20th century existentialist Jean-Paul Sartre in particular. To understand how memory and selfhood are intertwined for Sartre, it is necessary to have a

[102] For some scholars, autobiographical memory can be defined in terms of episodic memory, "where the latter includes a reference to the self" (Guerini et al.). Tulving, for example, points out how episodic memory, almost by definition, "require[s] a self. It is the self that engages in the mental activity that is referred to as mental time travel: there can be no travel without a traveler" (Tulving 2005, 14-15). In his view, a pre-condition of autobiographical memory is an automatic pre-reflexive sense of being the subject of experience (self-experience), that receives diachronic unity across time thanks to episodic memory. Episodic memory, in other words, makes possible the unification of the self by reconnecting the present moment to such inherent 'mineness' (see also Prebble et al. 2013, 818-819). The present self is constructed according to, and constantly re-absorbed by, pre-reflexive self-experience. According to the self-memory system framework, proposed by Martin A. Conway (Conway 2005; 2009; Conway & Pleydell-Peirce 2000), it is instead the present self that selects, organises, and even distorts episodic memories to increase the sense of personal continuity, and therefore transforms them into autobiographical memory. Katherine Nelson, differently from both the aforementioned approaches, stresses how the self may raise from relationships, and originate from social and communicative interactions and memory narratives (Nelson 1993; 1996; see also Hoerl 2007, 624-630).

brief overview of his thought, inspired and drawing from previous phenomenologists and psychologists (Martin Heidegger, Edmund Husserl, and Theodor Lipps among others).

6.1.1 The past and the self.

According to Sartre, the human existence is basically determined by the duality between facticity and freedom. The term 'facticity' is borrowed by Heidegger, who, to summarise and simplify, claims that as human beings, we are not the ground of our own existence but rather we are thrown into the world we inhabit without being responsible for the position we are in (our being-in-the world, German: *In-der-Welt-sein*). We are, in other words, thrown into a facticity (German: *Faktizität*), and such thrownness (German: *Geworfenheit*) is something we cannot undo (Heidegger 1962 [1927], 82-83, 157, 174, 234). Another way to term this total, contingent set of facts is 'existential situation'. Since facticity is 'already there' when human subjects get thrown into it, it also has a fundamentally temporal meaning: "The primary existential meaning of facticity lies in the character of 'having been'. […] The temporal meaning of existentiality and facticity is indicated by the expressions 'before' and 'already'" (Heidegger 1962 [1927], 376).

Sartre emphasises the temporal dimension of facticity to the point of claiming that "'[f]acticity' and 'past' are two words to indicate one and the same thing" (Sartre 1956 [1943], 173; see also Stone 2019, 131): facticity consists in the given, contingent elements of human existence, i.e., facts that human beings cannot choose and that, at the same time, determine their being.[103] Quite interestingly, facticity for Sartre not only includes the past but also what, according to the common sense, one may understand as 'the present' (see Levy 2011, 151-156). To clarify this, Allison Stone distinguishes two different kinds of facticity that Sartre interprets as a whole: 'initial facticity', i.e., the one described above; and 'ongoing facticity', i.e., current states that come down to every subsequent step of one's life, including physical, bodily contingencies, actions, and so on (Stone 2019, 133).

[103] Including "[…] climate and the earth, race and class, language, the history of the collectivity of which [they are] part, heredity, the individual circumstances of [their] childhood, acquired habits, the great and small events of [their] life […]. I am not 'free' either to escape the lot of my class, of my nation, of my family, or even to build up my own power or my fortune or to conquer my most insignificant appetites or habits" (Sartre 1956 [1943], 619). According to this quotation, it should now be clearer why I firstly introduced the term in chapter 1.5, by speaking of the concept of hermeneutic horizon: the facticity we are thrown into as human beings when we are born includes the cultural memory framework that in turn influences (if not determines) how we understand, read, interpret, and therefore produce texts.

On the opposite pole of facticity, there is freedom. Freedom consists in surpassing the given facticity of existence, to go beyond it and pursue, desire, or imagine a non-given goal (Sartre 1956 [1943]). If the temporal dimension of facticity is the past, that of freedom is the future: as human beings, we are always moving towards it, and beyond facticity and the past. Sartre thinks that human beings are entirely free to choose who they want to become:[104] "no limits to my freedom can be found except freedom itself or, if you prefer, that we are not free to cease being free" (idem, 439). Experiencing this freedom means projecting ourselves beyond our current (and therefore past) conditions, towards the selves we want to be. Sartre furthers on this purpose the idea of projectual disposition (or projectuality, German: *Entworfenheit*) by Heidegger, and similarly calls the disposition of human beings to be 'thrown ahead' of their present (and past) situation (Heidegger 1962 [1927], 184-185) an 'existential project' (Sartre 1956 [1943]).

Although it may seem counterintuitive, then, selfhood for Sartre is to be considered facticity, and therefore something 'already there' and opposite to freedom. For Sartre, the self is an object and not a genuine subject. What makes us who we are now is already past, since it is defined, concluded, and therefore in contrast to the constant movement that characterises human agency (see also Levy 2011, 155). To answer the question 'who are you?', in fact, we must reflect on ourselves as given objects to interpret, to evaluate, to construct, and to identify with. It is here that memory comes into play: the past, and the self within it, is disclosed by memory. By considering selfhood part of the facticity of existence, Sartre specifies that it emerges from reflection, which is a form of memory (Sartre 1962 [1936], 43). The self is for Sartre an imaginary object (see also Levy 2013) that is created by a perspectival and creative recollection, "weaving the past with the present and future and creating a meaningful synthesis, a story to which we give the name 'I'" (idem, 107).[105] It is therefore through memory that human beings construct selfhood as an object of perception and, most importantly, can consequently develop their own existential projects, against or according to the selfhood they have been constructing.

[104] Beauvoir's take is slightly different. She stresses how freedom is something that can be, in certain situations, dramatically limited, and asks "what transcendence is possible for a woman locked up in a harem?" – see Beauvoir 1965 [1960], 434).

[105] It is worth noting that the concept of 'memory' suggested by Sartre is perfectly in line with the one I have chosen to use during the dissertation. More precisely, memory for Sartre is not a mere re-discovery of past things but rather a dynamic process of perspectival reimagining of the past.

Such an understanding of the relation between subjectivity, selfhood, and memory is inspired by, and draws from, among others, Edmund Husserl, according to whom reflexive evaluation and operations are necessary for experiencing our ego (2012[1931], 71; see also Zahavi 2008, 36). Similar accounts can be found in psychology, e.g., in Theodor Lipps, who claims that "my own activity may become objective to me, namely, when it is no longer my present activity but when I contemplate it in retrospect. But then it is no longer immediately experienced, but only remembered in imagination. And thus it is objective" (1962[1903], 375) – clearly echoing the cognitive and psychological perspectives mentioned at the beginning of this section.

To summarise, Sartre emphasises the role memory has in distinguishing subjectivity and selfhood as different, albeit mutually dependent, concepts (see also Zahavi 2008). The main difference between subjectivity and selfhood is that subjectivity is not an object of direct perception, since subjects experience the world they inhabit through it. On the contrary, the self is an imaginary object that we perceive, reflect upon, remember, recognise, and construct (see also Levy 2011). The same take is shared by psychologists and cognitive scientists overviewed above, and by other philosophers interested in selfhood, e.g., Ricoeur (see 1992[1990]). We shall then speak of two different actual 'I' as we discuss our actual experiences: one is the perceiving actual 'I', i.e., the subject, which perceives things, acts, and chooses; the other is a perceived actual 'I', i.e., the self, which is the object of our experience through recollection (and therefore through memory).

Among others (see, e.g., Levy 2011; 2013), and partly drawing from Sartre (according to whom the self is an imaginary and reflexive concept), Dan Zahavi furthers this idea by introducing the concept of 'narrative self', i.e., of the self as narrative construct (2008, 106-107). This can be defined as the self as emerging from recollection, and therefore self-retelling and self-narrating. The reference to narration is also inspired by Ricoeur, who describes selfhood and 'narrative identity' by referring to the concept of 'character' (Ricoeur 1992, 158).[106] As anticipated by Sartre, and discussed within cognitive science and psychology,[107] this twofold movement of ascription (of my actions and experiences to myself)

[106] "[…] a twofold movement of ascending complexification starting from basic actions and from practices, and of descending specification starting from the vague and mobile horizon of ideals and projects in light of which a human life apprehends itself in its oneness" (Ricoeur 1992, 158).

[107] See, e.g., the self-memory system framework proposed by Conway (Conway 2005; 2009; Conway & Pleydell-Peirce 2000).

and contextualisation (of my actions and experiences towards myself),[108] relies exactly on memory, and is at the same time constantly in process, in the making, and not fixed.

Regardless of my agreement with Sartre and his understanding of selfhood, his take helps me frame the relation between memory and the self towards the existential perspective I choose to follow together with the hermeneutic one. Not only is memory strictly connected with the self (as outlined by the different theoretical frameworks presented at the beginning of the paragraph) but, more interestingly, it is through memory that we can develop our existential project, i.e., that we decide to project ourselves beyond the current conditions of our existence and towards the selves we wish to be. It is through memory, and by memory, that we engage with productive 'self-design' and 'self-refashioning' (Gualeni 2015, 75). But how are such processes affected, transformed, or changed by virtual technologies? What different and new perspectives may virtual technologies, intended as memory technologies, disclose regarding human existence? To answer these questions, it is first necessary to deal with how virtual worlds disclose virtual existential domains. To that end, it is worth introducing the concept of virtual subjectivity to tackle how we phenomenologically and existentially engage with virtual worlds.

6.2 Virtual subjectivity.

Virtual worlds are technologies that are "capable of fragmenting and of extending our possibilities for agency as well as our sense of personal identity" (Gualeni & Vella 2020, 72), and that therefore "disclose new worlds [as well as] provide new bodies that we can grow familiar with" (idem, 73). Most of the times, and this is exactly the point of this chapter, they disclose novel approaches to the past and to memory through the identities and roles they allow users to take on. As claimed by Sherry Turkle, "[w]e come to see ourselves differently as we catch sight of our images in the mirror of the machine" (Turkle 2007[1995], 9). Virtual worlds are 'identity-transforming' simulative machines (idem, 9-10) that affect, and contribute to, the contemporary 'culture of simulation' and influence "our ideas about mind, body, self, and machine" (ibid.). To inspect how these phenomena happen, it is worth addressing our engagement with virtual worlds through existential phenomenology.

Among the various fields that investigate the topic, a relevant part of game studies deals with both the phenomenology of being in virtual worlds and with subjectivity and existen-

[108] See also Vella 2015, 339-340.

tialism through, and towards, virtual technologies. Since, as I observed in 1.7, gameworlds are fully-fledged virtual worlds according to my understanding of the term, it may be unsurprising to observe that concepts such as 'gameplay condition' (Leino 2010), 'gameplay situation' (Kania 2017), 'ludic subjectivity' (Vella 2015), and more broadly, the proposed subfield of 'existential ludology' (Payne 2008), as well as related fields such as game studies and avatar studies, can be fruitfully and well applied to virtual worlds in general. [109]

From an existential perspective, virtual worlds can be in fact described using the words Marta M. Kania uses to describe gameworlds, as they "[provide] the players with a fresh and unique existential situatedness" (Kania 2017, 2). As Leino puts it, virtual worlds provide users with an 'extended facticity' (Leino 2010, 220): in virtual worlds we find ourselves thrown into a contingent set of facts, i.e., virtual facts, that may be entirely different from the actual one. Such extended, virtual facticity discloses possibilities of self-determination and self-transformation within the virtual world in question, and therefore is the very basis according to which (or against which) we aim at existential freedom within virtual worlds.

On close examination, the fact that both such facticity and such a quest for existential freedom are experienced within virtual worlds implies a deeper consideration of our engagement with these worlds intended as existential domains. It is to tackle the relationship between the virtual and the actual that many game scholars introduce concepts that are both analogue and partly serving the same theoretical purpose. All the perspectives mentioned above focus on how, to consider gameworlds from an existential perspective, one may focus on how players develop a 'subjective I-in-the-gameworld' while engaging with digital games (Vella 2015, 22; see also Vella & Gualeni 2018). When players engage with game-

[109] Not unlike existential phenomenology, existential ludology asks about the possibilities and meaningfulness of human actions in (digital) gameworlds (Payne 2008, 622) – and therefore, in virtual worlds. Since the approach of existential ludology emphasises the ludic engagement with gameworlds, one may think of 'gameness' as a criterion to distinguish gameworlds from non-game virtual worlds. With 'gameness', I point out that set of 'paradigmatic ideas' within game studies (Leino 2020, viii) that emphasise "games and play as the core ingredients in the software packages we are accustomed to calling 'computer games'" (ibid.). To claim that certain pieces of software possess such features would imply the risk of underestimating their inherent multistability (1.3; see Leino 2012), i.e., if we look for the 'gameness' of gameworlds, we may risk ignoring that gameworlds, as technological artefacts, "are not made into what they are until they are brought into the range of human praxis, and, that they often afford a diverse range of possible uses" (ibid.; see also Ihde 1990). As emphasised by Olli Tapio Leino, 'gameness' as a concept is undergoing many transformations and may need a rethinking: art games "present aesthetically interesting worlds for players to explore but lack any gameplay condition" (Leino 2020, viii; see also Leino 2009; 2010; 2012); e-sports run the risk of transforming games into 'serious' activities (Leino 2020, ix); 'gamification' provides us with the entrance of game elements in previously off-limits places (ibid.), just to name few.

worlds, they adopt subjective standpoints internal to them. By drawing on Gualeni and Vella, with the term 'virtual subjects' I point out the entities that raise from this engagement, denoting "the player's self, merged with the already-given perspective of the avatar she is expected to internalize" (Kania 2017, 65). Such entities do not merely pre-exist the engagement of players with the game: they are not pre-scripted by game developers; instead, they raise from the subjective engagement of players with the playable figure. Kania terms such entities 'self-avatars' and defines them as "[…] emergent being[s] situated within the gameworld, consisting of the player's existence and intentional acts, and the features of the avatar" (Kania 2017, 7). It is therefore a hybrid subject that arises from both the features and choices of an actual being, those of a fictional one, and those of a digital one, including:

- features of the user, i.e., the actual subject - actual inclinations, backgrounds, experiences, choices, ideologies, and biases;
- features of the avatar, i.e., the fictional subject – fictional inclinations, backgrounds, experiences, choices, ideologies, and biases; and
- digital, technological constraints - movement limitations, affordances, patterns, audio/visual appearance, graphics.

Virtual subjects are complex and dynamic, technologically mediated hybrids between actual subjects and fictional ones. Many concepts in game studies reflect on such hybridity, both for what concerns virtual subjects and the act of play in general: Ulf Wilhelmson speaks in terms of 'game ego' (2008) as "the bodily based function that allows the player to exert control and interact with the game environment through a tactile motor/kinesthetic link" (idem, 58); Gordon Calleja of 'incorporation' (2011) as an intensified, internalised experiential blending of different dimensions of player involvement; Jesper Juul famously writes of the 'half-reality' of digital games (2005) to define the tension between actual rules, real digital actions, and the fictionality of games; and I have already mentioned above other scholars such as Leino, Kania, Vella, and Gualeni, all interested in the existential and phenomenological relation between actual, fictional, and virtual subjects. Even studies that concern online identity and shared virtual worlds tend to emphasise how online personas may make it increasingly hard to distinguish between choices traced back to actual subjects or fictional ones: Benjamin Koehne, Matthew Bietz, and David Redmiles describe for example the identity of a character as 'a complex amalgam of avatar and play-

er', towards which it is counterproductive to separate between what is in the game and what is real-life (Koehne et al. 2013, 65).[110]

The concept of virtual subjectivity is necessary as it allows me to tackle the complexity of the interrelation between actual and virtual selves. Nonetheless, it is worth noting is that the term 'virtual subject' may be misunderstood and be read by following a slightly metaphorical take which I find it useful to dismiss. Though virtual subjects can be observed, analysed, and discussed on their own, they do not possess their own will, freedom, and intentions. Again, there is a definite hierarchy between actual subjects and virtual ones, and virtual subjectivities (as well as virtual facticity) must be understood as nested, rooted in actual existential situations (Gualeni & Vella 2020, 9-10, 12). By following Vella, to clarify this I shall introduce the argument of a 'double perspectival structure' of engagement with virtual worlds: users do not entirely 'disappear' into virtual worlds, they retain their existential standpoint as users engaging with a virtual technology. In other words, they are both virtual subjects and users as they engage with a virtual world (Vella 2015, 71).

From both a phenomenological and existential perspective, users are neither entirely external nor entirely internal to the virtual worlds they act within as they engage with them. This is widely discussed within avatar studies, either in terms of existential, aesthetic, or participatory/spectatorial experience. Regardless of the approach chosen, players are always seen as at the same time acting within (as subjects) virtual worlds, and perceiving their avatars or actions (as objects) as spectators (see, e.g., Kania 2017; Rehak 2003; Ryan 2006; Westecott 2009; see also Kwastek 2013). Virtual subjects arise exactly within the dynamic exchange between these two perspectives, internal and external, and therefore, I may say, between actual and fictional engagement with virtual worlds. The double perspectival structure of engagement suits both the theoretical framework I provided to analyse

[110] It is worth noting that virtual worlds include also experiences in which there is no embodiment within a playable figure or an avatar. Vella (2016) speaks in terms of 'transcendent subjectivity' to describe, e.g., city-builder digital games in which there is no avatar to control. Notwithstanding that, virtual subjectivities that arise from the engagement with controllable figures are not only the most interesting from a phenomenological and existential perspective (Gualeni & Vella 2020, 19) but most importantly, they are those that allow me to tackle virtual memory in a clearer and more explicit way. This does not entail that, e.g., transcendent virtual subjectivities are not of interest when it comes to memory. On the contrary, further avenues of this research may deal exactly with non-embodied virtual subjectivities and related memories. For now, I choose to focus on embodied virtual subjectivities both because they align with the readapted version of mediation theory that I decided to use to analyse memory technologies, and because they make observable and explicit the relationship between actual, fictional, and virtual subjects more than the others.

virtual worlds and, consequently, the related understanding of virtual worlds as fictional experiences.

When users engage with virtual worlds at the same time they experience them 'internally', fictionally acting within them (virtual subjects as perceiving subjects) and 'externally', watching, e.g., the actions performed by their avatars as spectators would do with a movie or other fictional worlds (virtual subjects as perceived subjects), i.e., having an 'aesthetic attitude' towards them (Sartre 2010 [1940], 191-193; see also Kania 2015; 2017). Their virtuality is nested in the actual world, and at the same time constrained, affected, shaped, and transformed by both the fictional world and the technological mediation that allows engagement (and these observations apply to all kinds of virtual worlds, from digital games to text editors).[111] Such reflection allows me to distinguish between different kinds of remembering subjects, and memories, within virtual worlds.

6.3 Defining virtual memory.

On the basis of the observations made throughout the previous paragraph, it may be evident that several kinds of memory, each corresponding to a different subject, come into play as we engage with virtual worlds. Two distinctions are worth making, between both the content of what is remembered, and the subject who remembers it. Before introducing virtual subjects within this taxonomy, to the question 'who is remembering during the engagement with a virtual world' I answer either:

- actual subjects, i.e., actual human beings, subjects that inhabit the same world we inhabit as biological, organic beings;

[111] As an actual subject, I am currently using a text editor to write this thesis. By following these latter observations, I will describe it as a both actual and fictional experience. I am actually pressing buttons and making pixels appear on the screen, and at the same time these pixels are grouped together to form letters and words I need to understand and interpret as if they were actual letters and words. I am therefore experiencing such a virtual world as both an actual subject, pressing buttons and making pixels appear on the screen, and a virtual one, 'fictionally' writing fictional letters, as well as fictional words. I can be interrupted by someone who steps into the room I am in, which shows that my virtual experience is necessarily nested in the actual world. I am constrained by the technology I am using: for example, if my laptop runs out of battery the virtual document I am writing on would become darker, or I would even risk losing everything I have been writing so far in case of major hardware issues. Finally, I am constrained by the range of possibilities that the fictional world I am experiencing provides me, e.g., I can write a huge number of symbols and letters but, unlike for an actual paper and an actual pen (which are technologies but not virtual ones), I cannot write down the meaningless symbol I am imagining right now. The same thing can easily be observed within every other virtual world. Who is writing then, I may ask, when I am using a text editor? Not an actual subject, who is simply pressing buttons. Not a fictional subject, since the action of writing is something that is digitally, and therefore really, taking place. Therefore, a virtual subject: an 'I-in-the-virtual-world' of which I am adopting the role when I, e.g., answer "I am writing" when someone asks me what I am doing right now – see also Gualeni 2015).

- fictional subjects, i.e., represented subjects, that have their represented feelings and experiences, such as main characters of a book or non-player entities, controlled by the software, in virtual worlds.

And between:

- actual memories, i.e., memories of events that took place within the actual world we inhabit as organic beings;
- fictional memories, i.e., memories of represented events that took place within fictional worlds.

Fictional subjects can remember fictional represented events.[112] Examples of this can be found in several digital games in which fictional characters remember their own past during, e.g., cutscenes or non-interactive sequences. Though it is represented within a virtual world, for example, the flashback in which Francis York Morgan suddenly remembers his own traumatic past, the adventure investigative digital game *Deadly Premonition* (Access Games 2010) is in all respects analogue to those that one can find in literature, or within movies. It is Francis York Morgan, a digitally represented character, who remembers his own past. No actual remembering is taking place, i.e., the remembering itself is something fictional, and only represented. Even if fictional subjects remember seemingly actual events, e.g., historical events, nonetheless these events are represented and fictionalised, as we have seen during the previous chapters. It is therefore impossible, for fictional subjects, both to remember non-fictional events and to remember non-fictionally.

At the same time, actual subjects remember both their actual engagement with virtual experiences[113] and the fictional events that happen within virtual worlds.[114] Examples of the former are all those memories players may have of the engagement with a game but devoid of references to the virtual world itself, e.g., of them breaking a controller, chatting with their friends during play, watching walkthroughs as playing, being interrupted by someone, receiving an actual call on their phones while being immersed within a virtual medieval fantasy setting, and so on and so forth. In all these cases, actual subjects are directed towards actual memories, while virtual worlds are in the background of the remembered

[112] Schematisation: fictional subject ⇢ fictional world.
[113] Schematisation: actual subject ⇢ actual world (- virtual world)
[114] Schematisation: actual subjects ⇢ fictional world (- actual world).

experience (see 2.3.4). Examples of the latter are instead all those that imply remembering things that happened only within fictional worlds, and therefore fictional events. When we interpret fictional events, or tell them to friends or colleagues, we know and remember things that are fictionally true, i.e., true within the fictional worlds they belong to (see 1.5), as well as we remember what certain characters experienced during their lives. Just as we distinguish the actual world and fictional worlds, we intuitively distinguish fictional memories from actual memories and experiences.

One may analyse these kinds of remembering towards several different scholarly fields, from literary studies to philosophy of fiction, which I have mentioned several times previously during this dissertation. Dealing with virtual worlds intended as memory technologies, and with subjective engagement with virtual memories, means to focus on a further different kind of remembering, and on a different subject and a different kind of remembered events as well. It is here that virtual memories and virtual subjects come into play. I will define all those memories that are neither entirely fictional neither entirely actual but that are instead both at the same time 'virtual memories':

- virtual memories, i.e., memories of virtual events, or in other words of events or experiences that take place in worlds that are at the same time fictional and digital, and which intertwine fictional and actual memories.

Such memories and events are not intended as merely actual since they are experienced (and therefore remembered) towards virtual worlds. At the same time, they are not intended as merely fictional since they involve and need actual subjects and actual actions to happen (and therefore are remembered as involving them). The difference I am pointing out, in other words, is that between fictional events, virtual events, and corresponding memories: fictional events are intended as represented, non-actual events such as those described by novels, films, and tv series; virtual events require instead the involvement of actual subjects. In digital games, for example, I term 'fictional events' those represented in cutscenes. Instead, I term what players do, choose, or achieve during the gameplay 'virtual events', intended as both digital (real) and fictional (non-real) experiences. Such experiences require, and can be remembered by, a further kind of subject, namely:

- virtual subjects, i.e., subjects that arise from the engagement between users and virtual worlds or, in other words, hybrid emergent subjects that consist of the intentions, directedness, and actions of actual subjects, and at the same time of the represented intentions, directedness, and actions of corresponding represented subjects.

By borrowing and re-adapting from Vella (2015, 74), and according to the theory of the double perspectival structure of engagement with virtual worlds, I emphasise how virtual subjects and virtual memories are essentially nested in our actual ones (fig. 8). When engaging with a virtual world and remembering choices we have made within it as virtual subjects, we acknowledge how those choices were made virtually, and within that virtual world. Despite that, it is 'us' that made such choices, affected and influenced by the fictional world. The same thing can be said for virtual memories. Virtual memories are virtual events we took part in, and that we remember both virtually (internal perspective) and as part of our actual experience (external perspective). When we fall down a virtual cliff in a digital game, for example, we remember both having felt the cliff from an internal perspective (as 'perceiving I') and having watched ourselves falling down the cliff, as spectators (as 'perceived I', from the external perspective). This also means that by taking an internal subject-position within a virtual world and therefore perceiving the 'mineness' of virtual experiences (Vella 2015, 319), we also perceive as our own the memories virtual subjects have.[115]

[115] To exemplify this before proceeding, let us imagine a conversation between two friends concerning a random story-driven and choice-based digital game *Pathologic 2* (Ice-Pick Lodge 2019). Let us imagine that one of the two does not know anything about the game and asks the other about the game experience. Memories bound to avatars, or those we perceive as merely represented, such as those presented at the beginning of the game, tend to be described as those we find in other non-interactive media: the Haruspex gets to the Town by train; he seems having received a letter from his father; he speaks with a mysterious passenger; and so on. The fictional events and fictional things the player recalls are told from the external perspective, both if they are events experienced during play or experiences that the avatar fictionally remembers. To questions concerning events that took place during play, instead, the player may answer by describing actions, choices, and thoughts, by using the first person. By listening to such answers, it is clear how the concept of virtual subjectivities arises as we engage with virtual worlds: 'I' killed that character; 'I' decided to visit my friend Lara Ravel; 'I' found hard to find enough supplies and was forced to rob a house; and so on. Here the player (actual subject) is recalling virtual memories she (virtual subject) performed within the virtual world. To prevent any misreading, among virtual memories I may also find happenings that are more inclined towards the actual world and less toward the fictional one, such as: the camera angle started to make me sick, and I had to stay still for a while in a safe building. Finally, there is another 'I' that recalls things which gets mentioned when the player remembers by adopting a perspective external to the virtual world: I have been interrupted by a blackout; I run out of disk space and could not save the game; my mouse broke, and I had to replace it; and so on. Here the player (actual subject) is recalling actual memories that entail the experience of the virtual world as part of her actuality.

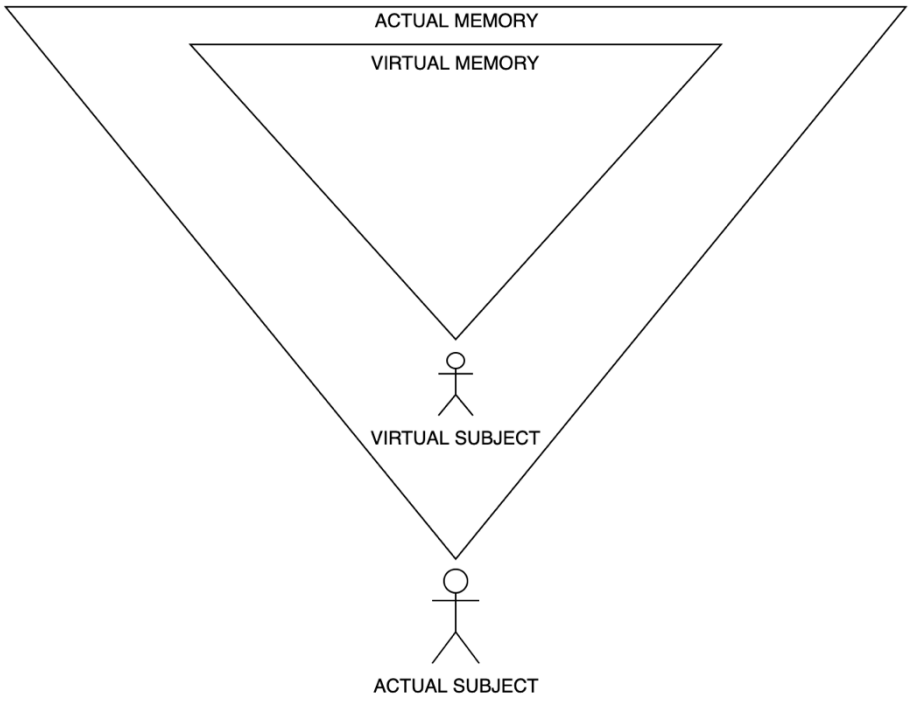

Figure 8: Actual subjects, virtual subjects, and memory.

In the broadest sense, and basing on the definition I gave in chapter 2, I define virtual memory as:

> A capacity enacted by virtual subjects, i.e., to actual subjects, when engaging with virtual worlds and adopting a subjective-standpoint position within them; of which virtual remembering and virtual forgetting are present, situated, context-related, embodied corresponding processes; which produces virtual memories; and which is functional to identity formation and is influenced by identity-oriented goals and biases of individuals or groups.

More specifically, with reference to 3.2, I will limit myself to distinguishing between the various forms of memory at play in virtual worlds as follows:[116]

- Episodic memory:

[116] Since my focus is now individual memory, I will emphasise how the subsequent taxonomy is thought for cultural memory on the individual level. At the same time, as for the taxonomy provided in the third chapter of this thesis, all these distinctions may be metaphorically re-adapted for the collective level of cultural memory as well.

- Actual episodic memory (of virtual worlds).
  - Schematisation: actual subject ⇢ actual world (- virtual world)
  - E.g.,: “I remember a noise out of the window as I played”
- Fictional/represented episodic memory (within fictional worlds).
  - Schematisation: fictional subject ⇢ fictional world
  - E.g.,: A character is represented to remember his daughter
- Actual episodic memory (of fictional worlds).
  - Schematisation: actual subject ⇢ (fictional subject ⇢ fictional world)
  - E.g.,: “I remember my character losing his daughter”
- Virtual episodic memory.
  - Schematisation: virtual subject ⇢ virtual world
  - E.g.,: “I (virtual subject) remember striving to save my daughter (virtual memories)”

- Semantic memory:
  - Actual semantic memory (of virtual worlds).
    - Schematisation: actual subject ⇢ actual world (- virtual world)
    - E.g.,: “I know this is a four-hundred-thousand budget digital game”
  - Fictional/represented semantic memory (within fictional worlds).
    - Schematisation: fictional subject ⇢ fictional world
    - E.g.,: A character is represented to know how many gods do exist in her fictional world
  - Actual semantic memory (of fictional worlds).
    - Schematisation: actual subject ⇢ (fictional subject ⇢ fictional world)
    - E.g.,: “I know my character has lost his daughter”
  - Virtual semantic memory.
    - Schematisation: virtual subject ⇢ virtual world
    - E.g.,: “I (virtual subject) know that I strove to save my daughter (virtual memories)”

- Body memory:
  - Actual body memory (of virtual worlds).
    - Schematisation: actual subject ⇢ actual world (- virtual world)

        - E.g.,: Being pre-reflectively aware of the space I am in as I play a digital game
    - Fictional/represented body memory (within fictional worlds).
        - Schematisation: fictional subject ⇢ fictional world
        - E.g.,: A character is represented to be pre-reflectively aware of how to drive a car
    - Virtual body memory.
        - Schematisation: virtual subject ⇢ virtual world
        - E.g.,: Being pre-reflectively aware that I must press a certain button to draw my gun within a digital game;[117]

All these forms of memory contribute to the shaping of the corresponding selves.
What is left is to see how virtual subjects, virtual memory, and virtual memories affect the actual existential situatedness they are nested in, and therefore how virtual memories and subjectivities affect our (either actual or virtual) selfhood.

6.4 Virtual selves.

On the basis of what has been observed so far, I can describe the virtual self as an imaginary object that emerges from recollection and reflection on virtual events, i.e., through virtual memory. Users perceive virtual memories as their own, having had direct experience of them, and at the same time as something entirely other, remembered as users remember memories they have of other non-virtual fictional worlds. Virtual memory is therefore a capacity through which two different narrative selves (see 7.1) are constructed: both virtual and actual ones. What is now left before analysing the impact virtual memory may have on actual subjects and selves, is to frame how virtual selves and actual selves engage with each other. Virtual selves are hybrid fictional/actual narratives that are constructed by actual selves but within, and towards, virtual experiences.

To describe virtual selves and their effect on actual selves from the external perspective it is even unnecessary to define virtual selves, since we perceive them as fictional selves, i.e., as narrative selves that fictional characters develop basing on fictional experiences, memories, and situatedness. Virtual selves, from this perspective, affect actual selves like other

[117] This also includes 'absorbing virtual environments into consciousness' (i.e., being incorporated within virtual worlds – see Calleja 2009, 169, see also 4.3.2).

fictional selves or experiences of fiction. Such affect is demonstrated, either within psychology, social psychology, or philosophy of fiction: see the concept of 'transportation' (Gerrig 1993; Green 2004; Green & Brock 2000; 2002), and studies on participation in fictional worlds and developmental changes (McAdams & Olson 2010; see also Djick et al. 2009; Gabriel & Young 2011), especially including phenomena of identification (Sestir & Green 2010). Affect does not happen only in terms of assimilation but also of contrast. Recipients' narrative selves may not just become similar to those depicted in fiction – at times they might be contrasted away from those depicted (Appel 2011; Biernat 2005).

By adopting an internal perspective, instead, we perceive virtual selves as our own. I will enrich the so-far introduced theory of double perspectival engagement with virtual worlds by referring to the account Sartre gives of 'analogon' and imaginary consciousness. To simplify, according to Sartre, analogical objects that stand for irreal objects are 'analogon', which allow us to imagine their irreal counterparts (Sartre 2010, 183). Since our (actual) subjectivity cannot be translated within imaginary worlds, we can act upon irreal objects (i.e., object we imagine) only through an imaginary version of ourselves (idem, 170; see also idem, 125). This echoes the intertwined concepts of 'imaginative participation' and 'fictional interaction' (Van de Mosselaer 2020) I introduced in chapter 1.6, as well as the definition of fiction as a prompted make-believe game given by Walton (1990) discussed within the same chapter. I cannot touch irreal objects, if not fictionally, and therefore if not through a fictional version of myself, i.e., 'irrealising myself' (Sartre 2010, 125). This means that an actual subject adopts an imaginary subjectivity and goes beyond her being-in-the-actual-world (Gualeni & Vella 2020, 94-95). Virtual worlds, phenomenologically mirroring our perception of the actual world towards fictional (irreal) domains, therefore allow us to imagine (I could also use the term 'project' here to refer to the inherent projectuality of human existence) ourselves towards a different existential horizon, even though nested in the actual one. I define virtual selves as:

> imaginative narrative selves emergent from virtual experiences, constructed through virtual memory, and raising from the tension between: our actual facticity, the extended facticity of the virtual world, our actual freedom, and the virtual freedom the virtual world we are experiencing allows us to experience.

Just like actual selves are constructed through actual memory, virtual selves are 'quite literally created by [virtual] memory' (Mukherjee 2017b, 57). Differently from actual selves, virtual selves are easier to construct, observe, and customise, since they are doubly perceived from an external perspective: first, as objects of recollection, just like actual selves, i.e., narratives one must construct through memory; second, as already-objects users perceive as fictional ones during their engagement with the virtual world in question. The virtual recollection of the self, or rather of self-perception or 'autoscopy' (Mishara 2009), in fact, differently from its actual counterpart, is favoured by the inherent double perspectival engagement with virtual subjectivity we experience towards virtual worlds. In virtual worlds, the self

> "[…] does not emerge through a reflective inward turn on the part of the subject […]. Instead, the formal establishment of an external perspective does this work for the [user], presenting her with a very literal image of herself-in-the-[virtual-world]" (Vella 2015, 363).

It is the double perspectival engagement with virtual worlds that allows actual subjects to intuitively perceive virtual subjects as already-objects, i.e., virtual selves. Since the perspective of users is at the same time internal and external to virtual worlds, they make experience of their virtual selves as already simultaneously 'perceived' and 'perceiving': a process that differs entirely from its actual counterpart. If actual selfhood (perceived 'I') is constructed through reflection by actual subjects (perceiving 'I'), who cannot perceive themselves as objects since objects are perceived *through* them (see also Husserl 2012[1931], 54), virtual subjects are at the same time both perceiving 'I' (i.e., subjects) and perceived 'I' (i.e., selves).

Once that has been specified, to grasp the role virtual memory has in human existence it is necessary to put virtual selves and actual ones into relation. To discuss how virtual selves can be perceived towards as nested in actual selves, I first find it necessary to conceptualise selfhood as multifaceted, or rather 'multiplicitous'.

6.5 The multiplicitous self.

Transhumanism and cyborg theory, as mentioned previously during this thesis, already understands human selves as hybrids and emerging between intermeshed actual/digital experiential domains: a vision that is widely shared across various fields, from philosophy

(De Mul speaks of humans as 'hybrid creatures' with 'multiple [...] simultaneous awarenessess' – De Mul 2010 [2002], 32), to sociology (Turkle writes that virtual worlds "encourage us to think of ourselves as fluid, emergent, decentralized, multiplicitous, flexible, and ever in progress" - Turkle 2007 [1995], 263-264). Donna Haraway likewise claims that the self "is partial in all its guises, never finished, whole, simply there and original; it is always constructed and stitched together imperfectly" (Haraway 1988, 586). In a similar guise, even contemporary memory studies and cognitive sciences tend to focus on forms of 'distributed', 'situated', 'dynamical' cognition, constructed across different contextual frameworks (see, e.g., Clark 1997; 2001; 2003; Clark & Chalmers 1998; Haugeland 1998, 207-237; Sutton 2006). One of the most thorough accounts of such 'multiplicity' of the self, built upon Heidegger, and therefore useful for my present existential perspective, is provided by the phenomenologist feminist Mariana Ortega.

In *In-Between* (2016), Ortega provides an interesting phenomenological account of multiplicitous selfhood borrowed and furthered from the one Heidegger gives of 'Dasein'. Ortega provides a theory of multiplicitous selfhood that is almost automatic to apply towards virtual worlds, as it describes selves as characterised by "[...] their condition of liminality, their in-betweenness" (idem, 64). Ortega speaks of being-between-worlds, being-in-worlds, and becoming-with (idem, 3) as three existential dimensions of the multiplicitous self (idem, 65).[118] To summarise, she speaks of selfhood in terms of the possibility of being in various worlds, be those social, cultural, religious, ethnic, 'crisscrossing and overlapping in many experiences' (idem, 66).

Though Ortega does not mention fictional experiences or virtual worlds, I will list among the different worlds across which human beings experience their 'in-betweeness' also those disclosed by virtual experiences. Our being-between-worlds is therefore intended as finding ourselves between different phenomenological domains, either actual, virtual, or fictional. Based on the observations made so far, after all, it may be evident how while we are engaging with a virtual world, we are having direct experience of both our being-in-worlds

[118] The concept of 'world' Ortega refers to is slightly different from Heidegger's. According to Ortega, who draws on Maria Lugones (2003), worlds are to be defined as intertwined, always incomplete, open to interpretation and reinterpretation. Furthermore, worlds are constructions of life in terms of the relationships of production, gender, race, sexuality, class, politics, and so forth, i.e., communities of meaning that can be extended as whole societies or small portions of them (Ortega 2016, 65; Lugones 2003, 21-26). Despite that, the definition Ortega gives of the term 'world' can be easily applied to virtual worlds as I have been defining them throughout this thesis, as it describes a self that gets formed, told, and defined in between different contexts of experience (amongst which we can include also fictional and virtual worlds).

and being-between-worlds – being between the actual and the virtual, and at the same time within both. Virtual subjects, and therefore virtual selves, arise as 'in-between-worlds' by definition. The worlds we are in-between can share some elements, or on the contrary they can differ in most of their characteristics. Even more importantly, the self is constructed differently within different worlds (idem, 67), since it gets constructed through the relation with those worlds and with the other subjects that inhabit them (idem, 168). By drawing on Heidegger's 'Being-with' (German: *Mitsein*), Ortega lists 'becoming-with' as the third fundamental existential dimension of the multiplicitous self, meaning "the possibility that my relations with others [...] stands to change both who I am and my understanding of worlds" (idem, 13).[119]

A final remark shall concern how these various narrative selves, constructed across, within, and between different worlds, are 'assembled' within the multiplicitous self, i.e., how they become a consistent whole. Inspired by the concept of 'mineness' (German: *Jemeinigkeit*) of the self by Heidegger, to which Ortega adds 'togetherness' (Ortega 2001), and which by the synthetic quality of selfhood Ricoeur describes in terms of 'idem' and 'ipse' identity (i.e., sameness of the self and selfhood of the self, the latter intended therefore as the 'ipseity of the self' – see Ricoeur 1992 [1990], 111), I emphasise that the multiplicitous self is not to be conceived as 'additive'. Rather than summed, the different narrative selves we construct within different worlds are intersected and enmeshed to become the flexible and dynamic narrative entity of the multiplicitous self (Ortega 2016, 76).[120] To understand and analyse it, we may interpret the self as inherently intersectional, flexible, and 'tactical': according to both the cognitive self-memory system (Conway 2005; 2009; Conway & Pleydell-Peirce 2000; see also 7.1) and the phenomenological account given by Ortega. In other words I may claim that, as multiplicitous, we have the ability to tactically and contextually highlight different selves in different contexts, and not always compartmentalising them (Ortega 2016, 77). This goes against any understanding of the self as unified, unique, and stable. As discussed also by Erving Goffman, we usually adopt different and even potentially contradictory roles, and selfhood is always performative, in a state of flux (Goffman

[119] An equally important role to others in the development of selfhood is given by Ricoeur. In *Oneself as Another* (1992[1990]), Ricoeur describe the self as emerging dialectically from three experiences of otherness, namely: the own body; the other selves (intersubjectivity); and the conscience (idem, 297-356). Adriana Cavarero notices something similar, and claims that we narrate ourselves relationally, as we engage with others and as we get exposed to them (Cavarero 1997).

[120] Its construction is not as stable as we may think anyway: its lability is studied, e.g., towards schizoid conditions (e.g., Laing [1959]) or theatre studies (e.g., Tinkler 2014), and especially towards those circumstances in which the "continuity of me and not me" (Johnson & Emunah 2009, 76) is harder to maintain and recognise.

1956) – the point I am making here is that this selfhood is not only constructed across different social contexts and worlds, but also in-between various phenomenological domains.

As I am writing this thesis, I am in-between different worlds, and within each I construct a different version of myself: I am a PhD student at the University of Malta, an Italian citizen, a cinemagoer, and so on and so forth. Last, but not least for my present purpose, I interpret as part of my self the many virtual selves I constructed, customised, and observed during various digital gaming experiences. Virtual selves and experiences, as part of my multiplicitous self, play a role in the dynamic process of construction of myself.[121] This is also why virtual worlds may have transformative potentials: since the self is constructed across various experiential domains, and arises in-between different selves, then virtual selves, virtual experiences, and virtual memories are nothing but part of an experiential continuum towards and within which I develop myself. And since, as a human being, I am always projecting towards freedom based on my current self, virtual selves have impact on my overall existential project as well.

It is towards this framework that I suggest interpreting virtual memories: though the experiences we remember virtually are remembered as nested in our actual experience, they nonetheless affect our narrative self as a whole and therefore take part in our existential situatedness and affect our experiential projects. In other words, through this chapter not only I introduced the concept of virtual memory but also laid the theoretical foundations for a consideration of virtual memory as something that can affect us from an existential perspective. Now that such foundations have been laid, I can delve into such affection by addressing how virtual memory can have transformative potentials on human beings.

[121] From now on, based on these observations, I will distinguish between 'virtual self' and 'actual self' only for operational purposes, since such a distinction is meaningless towards the concept of multiplicitous selfhood I have been introducing so far. Since our self is multiplicitous, it is neither entirely actual nor entirely virtual. Nonetheless, it is useful to distinguish, although artificially and operationally, between the multiplicitous selves constructed without considering the virtual world (prior to the virtual experience, i.e., 'actual self') and the specific contextual selves constructed during the engagement with the virtual experience (i.e., 'virtual self'). They are de-facto merged and intertwined during the experience.

Chapter 7. Transformative potentials of virtual memory.

Virtual memory blurs the distinction between fictional memories and actual memories, and it is constructed with technology in the background, towards technology, and through technology. It is through the overlapping and intertwining of these different levels that virtual memory can have transformative potentials on human beings.

With 'transformative potentials', I point out the potential influences certain experiences have on our narrative selves, and therefore on our constructed, multiplicitous self as a whole. To refer to the existential background introduced in 6.1, I will specify that any change, although minimal, in our construction of selfhood may lead to a shift in our current existential project. Any experience can have a transformative potential on the experiencer. A new job, a conversation, a fortuitous encounter, a walk in the woods, or whatever, may literally 'transform' us, allowing us to define and recognise who we are differently. Transformative experiences are both 'epistemically transformative' (meaning that they provide "forms or degrees of knowledge and understanding that were previously unavailable and, more importantly, previously inaccessible, insofar as they depend on having the relevant experience but they are experiences one cannot voluntarily undertake or would not" – Carel & Kidd 2019) and 'personally transformative' (meaning that they change one's "values, preferences, desires, and, therefore, transforming one's identity in substantive ways" – ibid.). Memory plays a pivotal role in making transformative experiences de facto transformative: to grasp this, suffice it to think of how an undoubtedly transformative experience loses all its transformative potential if one loses one's memory of it. Epistemic as well as personal transformations, in other words, rely on memories experiencers have of them – be they semantic, for epistemic transformation, or episodic or procedural, for the personal one. I must remember experiences I have been having to be transformed by them in a first place. The very fact that we can have transformative virtual experiences, therefore, lies on the fact that we remember those virtual experiences.

The perspective of this chapter, like that of the previous one, is rooted in existentialism and subjective engagements with virtual worlds, and therefore considers virtual worlds as embodied memory technologies. As we will see, nonetheless, the hermeneutic perspective will also be implied, since the transformative potential of virtual memory can also lead to epistemic transformations of how we interpret the world and our past as members of certain mnemonic communities. In other words, this chapter will bridge the previous and the sub-

sequent one, leading from an existential consideration of virtual memory to focus on how it gets framed towards, and affected by, intersubjective frameworks of cultural memory. To address the transformative potentials of virtual memory, I will introduce over 7.1 how virtual memory can be experienced as transformative; in 7.2, I will discuss how virtual memory can be designed and used to transform human beings by 'fluidifying' their past; in 7.3, I will conclude by remarking my understanding of virtual memory as in-between different worlds.

7.1 Transformed by virtual memory.

As mentioned, every kind of experience can be transformative. On the other hand, not every experience transforms us during our lifetime. Even watching a movie can be a transformative experience – but not every time we watch movies, do we undergo personal or epistemic transformations. Experiences transform us depending on many factors, including subjective and psychological ones as well as social and cultural ones, and it is impossible to know whether an experience will be experienced as transformative or not beforehand. It would therefore be misleading to think that every act of virtual remembering exerts a transformative effect on us. It is necessary to specify when virtual memory promotes a rethinking, reworking, and re-remembering of our past, or ourselves, and whether it is experienced only as something detached from our daily experience, and therefore without any implication from our selves or our understanding of the past.

To tackle virtual remembering as a transformative experience, I will firstly introduce the concept of 'transformative decision', or 'transformative choice', discussed by the philosopher Laurie Ann Paul and anticipated by Ullmann-Margalit (2006). One of the most interesting aspects of such account of transformative experiences, which lies at the core of her very definition of the term, is how transformations may depend on certain choices made by individuals, i.e., transformative choices (Paul 2014, 31), or 'big decisions' (Ullmann-Margalit 2006, 171). According to Paul, when we make a transformative choice, we choose to "undergo an epistemically and personally transformative experience" (Paul 2014, 31.), regardless of how deep is our awareness of how that experience will change (idem, 32).[122]

[122] In other words, excluding extreme cases (Paul mentions 'shark-eating cases', see Paul 2014, 32), we face our substantial ignorance about what it is like to have a certain transformative experience until we have had it (ibid.), and yet we choose to have it (Ullmann-Margalit terms this 'opting' – see Ullmann-Margalit 2006, 167). Paul stresses how transformative decisions must be made to undergo a transformative experience: making a transformative decision means embracing the 'intrinsic experiential nature' of transformative experiences (Paul 2014, 78), therefore becoming ready to change ourselves through them.

By speaking of transformative decisions, then, we conceive transformative experiences as essentially voluntary. Undergoing transformative experiences through transformative decisions implies a will to get transformed, or a will to embrace the potential transformative implications of a certain experience. In some contexts, this is far more observable than in others: suffice it to think of psychotherapy, in which "despite widely varying theoretical and clinical models [...] client participation is essential" (Nelson & Borkovec 1989, 155) and patients have to accept a therapy model, to carry out certain behaviours both within and outside the therapeutic context, and in general are expected to actively participate, accepting to undergo transformation through psychotherapy (ibid.). The role of the patient has to be active for transformation to take place.[123]

I will term all these transformative experiences 'voluntary', and therefore describe a first way for virtual remembering to be experienced as transformative:

- *Virtual remembering as a voluntary transformative experience*.
  Virtual memory can be experienced as transformative when one voluntarily accepts to be transformed by experiencing it. We can choose to be transformed by certain virtual experiences, therefore embracing the transforming potential of virtual remembering, just like we choose to be transformed by non-virtual forms of role-play (e.g., in dramatherapy) and not by others.

At the same time, not all the transformative experiences are voluntarily undertaken. Certain transformative experiences are not at all elected by their experiencer through conscious deliberation. As observed by Havi Carel and Ian James Kidd, since as human beings we are also subject to contingencies (bodily, social, practical, psychological, cultural), and also abuses, exploitation, oppression, i.e., forms of both social and cultural subjection (Carel & Kidd 2019), it is fruitful to extend our taxonomy of transformative experiences accordingly. To use once more the lexicon of existential philosophy, and borrowing from Carel and Kidd, I claim that these are essential features of human life (Heidegger would term them '*existentialia*' – see Heidegger 1962[1927]), i.e., features of the (both initial and ongoing, see chapter 6.1.1) facticity of the life we are thrown into. In other words, we can-

[123] This also echoes the definition of 'critique' provided by Foucault, according to which 'critique' is the act of giving oneself "the right to question truth on its effects on power and question power on its discourses on truth" (Foucault 1997, 47). I will be back on the matter in 8.3.1, when considering how counter-hegemonic enactments of virtual memory can raise only towards such 'critical' approach (either to virtual worlds or to reality).

not avoid being vulnerable or subjugated, just as we cannot avoid certain contingencies that suddenly affect our lives, and yet being suddenly exposed to unexpected contingencies can, and often does transform us.

By drawing from Carel and Kidd, I therefore add a further way for virtual remembering to be experienced transformatively:[124]

- *Virtual remembering as non-voluntary transformative experience*.
  Virtual memory can be experienced as transformative even if one does not voluntarily accept to be transformed by experiencing it. Our present beliefs, knowledge, and behaviours can change according to virtual memories even when we engage with a virtual world just to have some fun. Also, virtual sites of memory can provide users with transformative virtual memories even if they are uninterested in being transformed by them. Just like schoolchildren may be transformed, epistemically and personally, by the experience of visiting a museum or memorial on the Holocaust even if they are initially taking part in the visit just to have some fun with their classmates, a virtual museum or memorial can provide transformative experiences even without the will of their users.

Another distinction it is worth making is between singular and cumulative transformative experiences (Carell & Kidd 2019.). Voluntary, involuntary, and nonvoluntary transformative experiences can be either striking, notable, and singular, or even small, minimal, and mundane (ibid.). Though the model of transformative experiences Paul provides focuses on voluntary dramatic transformative experiences, small everyday moments may also be experienced as cumulatively transformative (see also Callard 2018, Chapter 1; see also Janis & Mann 1977, 170).

Even other non-voluntary small experiences can transform us, as they become transformative 'if their cumulative effects are transformative' (Carel & Kidd 2019). This is observable, e.g., in the 'socialisation effect' that causes the values and beliefs of the individual to be in-

[124] Carel and Kidd add two further kinds of transformative experiences to the voluntary ones: involuntary and nonvoluntary. Involuntary transformative experiences are those that transform us without our deliberately embracing them, i.e., being imprisoned, assaulted, experiencing traumas, getting seriously ill, and so on and so forth. Nonvoluntary transformative experiences are instead those we undergo by choice but without embracing their transformativity (Carel & Kidd 2019). Since this distinction would be problematic towards virtual memory, I will avoid borrowing it and I will group both these categories under the same one.

creasingly similar to those socially shared around him/her (see Bardi et al. 2014); in personal growth; and in how "a plurality of individually incidental microaggressions can, over time, radically distort the development of a person's self-esteem, identity, and capacities" (Carel & Kidd 2019). It is therefore worth introducing this distinction to the previously explained ones:

- *Virtual remembering as a 'sudden' transformative experience.*
  Virtual memory can be experienced as transformative in relation to certain remembered virtual events or state of things, therefore experienced as a 'big change' regardless of how voluntarily we experience it as transformative. On the individual level virtual memories can transform me epistemically and personally, for instance when I adopt memories of another as my own, therefore projecting myself onto a different state of being; on the collective level, memoeries are transformative when the virtual memories I engage with re-imagine the historical past in an unexpected way, disclosing new perspectives onto past state of things.

- *Virtual remembering as a 'gradual', cumulative transformative experience.*
  Virtual memory can transform not through a singular moment or event but cumulatively, through minor virtual memories we 'store' during a virtual experience. On the individual level, we can be transformed by remembering minor virtual choices we have been making over time. On the collective level, seemingly trivial representations/simulations of the past may affect our way to think of it, to imagine it, or even to behave according to it.

Regardless of our 'opting' for being transformed by it, virtual memory can transform us both as individuals and as members of a mnemonic community, therefore producing effects that it is worth analysing through the existential perspective. As I will observe in the next chapter, such effects can be empowering, desirable, or abusively controlled, and improperly manipulated. For now, it is worth drawing once more upon the existential perspective to address how users can be transformed by virtual memory, once they (voluntarily or not) embrace its experience as transformative.

7.2 'Fluidifying' our past.

The previous section, merged with the framework used in chapters 6-7 to address virtual sites of memory towards memory culture, can already be used to describe how virtual sites of memory can affect mnemonic communities and the correspondent hermeneutic horizons. I will now claim that, in that sense, virtual sites of memory already 'transform' their users, affecting (gradually) how they remember their shared pasts.

The aim of this and the following paragraphs is to analyse how virtual memory can be experienced as transformative for human subjects. To that end, I shall adopt once more the existential perspective and discuss how virtual memory can be designed or used to 'fluidify' the experience users have of their past, or of memory itself. Though it is ultimately subjective (i.e., subjectively experienced, enacted, and determined, although intersubjectively affected, shared, and constructed), virtual memory is partly designed by virtual world designers and partly enacted by virtual world users. Or rather: it arises within, from, and towards, experiences that are designed and crafted by someone (designers) and at the same time enacted and lived by others (users). At the same time, it is constrained, made possible, and arises through technology and technological mediation. This is why during the following section I will analyse how virtual memory is designed and enacted within virtual worlds (and the two processes of designing it – production-side - and enacting it – reception-side – are to be intended as complementary and intertwined).

To that end, I will draw inspiration from dramatherapy. Dramatherapy entails the use of dramatic processes, including role-playing and role-taking, for therapeutic purposes (Davies 1987; Johnson & Emunah 2009; Jones 2002; Leveton 2010; Malchiodi 2003; Radmal 1995; Starr 1977; Wilshire 1976; 1982), and has already been fruitfully used to achieve a comprehensive understanding of the transformative possibilities afforded by adopting virtual subjectivities (see Gualeni & Vella 2020, 25-64; Vella et al. 2019; Gualeni et al. 2017). This is due to the evident similarity between the taking on temporary (or alternative) subjectivities in role-play or theatrical performance and in virtual worlds. In both cases, one both adopts a subjective standpoint within a fictional world and acts within, and towards, that world 'as if' one was someone or something else, by maintaining an 'aesthetic distance' (Landy 1986) from their actions and roles (I described it towards virtual worlds in terms of double perspectival engagement). In both cases, adopting a different subjectivity affords transformative possibilities on human subjects. My focus here is on the role virtual memo-

ries have towards these possibilities: I will therefore use psychodrama and dramatherapy as leads and inspirations to identify two different ways in which virtual memory can have transformative potentials on human beings – virtual 'vibration' and virtual memory design.

7.2.1 'Vibrating' virtual memories and experimentation.

A first way in which virtual memory can favour self-refashioning and transformation concerns identification. Virtual memory can elicit identification in users, and therefore allow them to experiment and project themselves towards contexts of actions that are at the same time similar and hugely different from their actual ones. The emotional resonance between virtual and actual memories plays a huge role in establishing the link between virtual and actual selves, regardless of how much distance users put between their virtual counterparts and themselves.

I frame identification towards the 'emotional' potential of virtual memories. With the term I refer to the concept 'emotion memory', or 'emotional memory' (less frequently: 'affective memory') introduced by Théodule-Armand Ribot (1903) and as extensively used and discussed by Konstantin Stanislavski in his *An Actor Prepares* (1958; see also Bentley 1962), as well as borrowed, more recently, by dramatherapy scholars for therapeutic purposes (Jennings 1987; Radmal 1995). According to those uses, 'emotional memories' are memories that have certain emotions attached to them, with which someone can sympathise. Callow describes such process 'vibration' (1985): actors who play a role usually 'match' the characteristics of that role, including the memories that role has, with their 'inner self' to make for a more credible performance. These ideas emphasise how it is not only the mere content of what is recalled that matters in role-play or acting; rather it is also how what is remembered by the performed character which 'resonates' with the memories of the performer.

A similar process can be found in virtual worlds, e.g., digital games. It is evident that the idea presented above is bound to the concepts of episodic memory and autobiographical memory. Nonetheless, I claim that something similar can be said even for what concerns semantic memory. In establishing a link between the actual world and a virtual one, a degree of resonance or 'vibration' between memories is always needed. In the case of avatars and personal backgrounds, such vibration can be established through emotions connected to past experiences (fictional, actual, and virtual). Nonetheless, I contend that even by

adopting a transcendent subjectivity (see footnote 123) we witness a resonance between our semantic memory and the virtual memories we recall during the game. Our very understanding of what happens within virtual worlds is bound, at least in a minimal sense, to the establishment of such resonance (in either emotional, hermeneutic, or cognitive terms). Once more, I will use 'identification' with virtual subjects as an example only because it makes certain processes more observable and clearer for the readers: my dealing with the topic is not to be intended as a full-length threatening of how users identify with playable character, a more thorough account of which can be found across game and avatar studies (see, e.g., Shaw 2012).

Identification is determinant for the enjoyment of story-driven digital games (Hefner et al. 2007) and it is usually experienced by users through the perceived similarity of the playable character (Hoffner & Buchanan 2005). Of course, the 'resonance' between actual and virtual memories can play a huge role in aiding such a similarity between users and playable characters. Virtual memories may be of choices, events, and acts that users virtually make that are in line with other non-virtual choices, events, or acts they have done previously outside of the virtual experience. In that case, their virtual self will be in line with their constructed self-concept, and therefore they will identify with their virtual selves more easily.

Virtual inclinations usually rely on this 'resonance' of different kinds of memories. If a user has been engaged in a romantic relationship with someone and meets a virtual character whose characteristics, depiction, way of being, resemble those of that someone, she can choose to get closer to that virtual character and not others only because the virtual memories she has of it resonate, 'vibrate' with the actual ones she has. The romantic relationships users decide to have in role-playing games such as *Persona 5* (P-Studio 2016) or *Fire Emblem: Three Houses* (Intelligent System & Koei Tecmo 2019), as well as those they decide to have within dating simulators or visual novels such as *LovePlus* (Konami 2009) may be in other words explained by the 'vibration' between virtual memories and actual ones. The same thing can be observed in any other virtual choice, action, or behaviour, intentionally or unintentionally made according to the resonance between virtual emotional memory and its actual counterpart. In all these cases, users use virtual memory to strengthen and reinforce a consistent version of their narrative selves, in line with what

they perceive as 'their own', by projecting themselves towards the virtual world as they are within the actual one.

Virtual memory also aids experimentation. It is by leveraging the resonance between actual and virtual memories, among other processes, that users can experiment with their virtual selves, acting differently from how they would outside of the virtual world. The point that I am making here is that every virtual 'what if' is implicitly based on an alignment between virtual and actual memories: neither identification nor the possibility to act differently within the virtual, as in a 'what if', could exist without any resonance, although minimal, between virtual memories and actual ones. Both role-taking and role-playing rely on it (Radmal 1995). It is such 'vibration' that discloses "the virtual as a new horizon of possibility [that] grants consciousness the possibility to depart from the actual world and freely choose to orient towards another [...] if only momentarily" (Gualeni & Vella 2020, 95). It is only once the emotional memory resonance is established that users, just like dramatherapy patients, "[...] can experience new [...] aspects of [themselves] while witnessing them in a non-rejecting way" (Radmal 1995, 15).[125]

It is through virtual memory that we construct our virtual selves, and that we can project ourselves within alternative contexts of existence, experimenting with virtual choices, behaviours, and existential projects that will be reabsorbed and intertwined with our multiplicitous selfhood. 'Vibration' can be favoured and enhanced by virtual world designers – see, e.g., how the trope of the amnesiac hero is often used to facilitate identification (Caselli 2018).

7.2.2 Virtual memory design.

Another way in which virtual memory can have transformative potentials on human beings is through 'virtual memory design'. In virtual worlds, users can not only identify with virtual characters and experiment with virtual versions of their selves – they can also design their own virtual memory.

Within dramatherapy, the benefits of role-play within therapeutic contexts arises also from a dynamic relation with the 'script'. Patients step into their roles by following what roles 'call forth' to them, and therefore 'bring up', and therefore can discover hidden, ignored, or

[125] As we have seen, identification is also pivotal for virtual sites of memory (5.2.4).

unaccepted aspects of themselves by adopting a perspective that they normally would not adopt – i.e., they follow, although with a certain degree of freedom and improvisation, the 'script' that such roles call forth to them as they adopt them (Radmal 1995, 16-17). In this sense, it is the very 'openness' of theatrical roles and scripts that enhances the transformative potential of dramatherapy and theatre in general. Cultural memory can also be seen as either sticking or resisting to previously existent and surrounding 'media scriptings' (see Lagerkvist 2013, 43-44).

In a similar way, virtual selves provide users with a set of characteristics that they dynamically enact during engagement with virtual worlds. Virtual selves tend to be more customisable, fluid, and malleable than actual ones. Users can use them to create alternate versions of themselves, or to project themselves into completely alien perspectives or ways of thinking. It is through identity design and subsequent role-play that many virtual worlds can be used by users to transform themselves. As a matter of fact, online technologies increasingly allow us to customise and design the virtual identities we have: on social media, for example, we can change the appearance of our avatar, the cover images we use to introduce others to our public account, and so on.

Most importantly for my present focus, many virtual worlds allow users not only to customise and design their appearance or presence but even their shared memories. This is also observable in avatar-based multiplayer games (see also Turkle 2007 [1995]) such as massive multiplayer online role-playing games (MMORPGs), in which users can experiment with alternate identities in fictional worlds (Koehne et al. 2013; Taylor 2002; 2006).[126] These kinds of virtual worlds allow us to grasp some aspects of virtual memory and identity design more clearly.

In these worlds, players usually construct their identities through active design of identity presentation, and at the same time necessarily design them constrained by both the technological boundaries those worlds posit and their own real-life identities (Koehne et al 2013, 57-60). Exploring these worlds, one may then encounter characters that are nothing

[126] Such views, it is worth specifying, are not only aimed at being showed to others but also to their own producers: virtual self-narratives are in this sense both versions of ourselves that we externalise to appeal others and which we construct for ourselves, to facilitate processes of 'autoscopy' which reinforce ideal versions of who we want to be, or think we are. Not by chance, these processes are also observable in non-shared virtual worlds, such as single-player digital games, where no one is expected to observe our virtual selves except ourselves: we design our virtual selves in a similar guise to how we design our 'actual' self.

but complex amalgams of the identity of the avatar (constrained by the fictional world it is part of, as well as by its physical appearance, although usually customisable); of the player (constrained by the different worlds in-between of which her multiplicitous self has been constructed and developed); both as constrained by the technological mediation that allow them to intertwine within a virtual subject (e.g., limitations in graphic, in the amount of selectable hair colours, eye shapes, facial expressions, range of body movements, affordances, and so on and so forth – see also Boellstorff 2008). At the same time, similarly to their social media counterparts, these virtual selves are also constructed through their virtual memories.

On social media, virtual selves may share some photographs and exclude others; they may modify, transform, and enhance their memories by using visual filters; or they may actively create memories by shooting photographs specially made for social media sharing. In MMORPGs virtual selves may instead have virtual scars, or may carry with them virtual weapons or objects only for the sentimental value those have for them. What happens in these cases is that users not only identify with their virtual selves through the 'vibration' between their actual and virtual memories – they can also produce, customise, and design their own virtual memories. This happens also retroactively: here, 'virtual memories' are to be understood as events that, through recollection, are literally projected within the past (regardless of whether such a past has been actually lived or not). I term these retroactive virtual memory projection 'virtual memory design' to emphasise how, just like virtual selfhood, virtual memory can be customised and designed. The possibility to create, customise, and change our past within virtual worlds is therefore a way to 'fluidify' both our virtual and actual selves.

As mentioned, virtual memory design entails either selection of pre-existing memories, i.e., of memories that become part of the virtual memory baggage and memory that instead get excluded, or the projection of new imaginative memories within the past. Examples of virtual memory design can be found in almost every process of avatar customisation, including not only the physical appearance of the virtual subject but also her weaponry and clothing, the place in which she lives, and the choices she makes based on her past. As I explained elsewhere (Caselli 2020), even seemingly cosmetic details we choose to customise our avatars or their dwellings with (like a scar on the face of a hunter, a piece of furniture, a painting attached to a wall) may become mementos, i.e., memory triggers that favour rec-

ollection and therefore contribute 'cuing' the corresponding virtual self that has them (see Zijlema et al. 2017). Virtual mementos, both those we are free to choose and those we cannot change or hide, favour the projection of virtual memories within the past.[127]

By analysing the effects of virtual memory design, we clearly acknowledge the hybridity of virtual memory. By observing how certain dwellings are furnished in *Final Fantasy XIV: A Realm Reborn* (Square Enix 2013), for example, one may find either drawings that depict the land from which the dweller comes, which 'trigger' fictional memories of events that happened before the engagement with the virtual world; or mementos like trophies or rare armours, which 'trigger' virtual memories of having beaten a dangerous dragon or deity; or even posters from other gameworlds the dweller played; or furnishings that the dweller chose to purchase and organise according to an old actual house he has been inhabiting within the actual world, which 'trigger' memories gathered outside of the virtual world in question, either fictional or actual. Last, but not least, one may find furnishings that 'trigger' imaginative memories, projecting onto the past something that the dweller pretends to have experienced. The intertwining of these three dimensions makes exploring a virtual dwelling an in-between experience, in which many memory cues refer to different selves, indistinguishable and merged.

Furthermore, virtual memory design happens at times without deliberation, arising from paradoxical dissonances between different kinds of memory. As Mukherjee observes, players may have "parallel memories of the same moment in time that comprise of totally different outcomes" (Mukherjee 2017b, 54). This is observable, for instance, in game overs and in-game deaths. Regardless of how many game overs players encountered, their avatars usually forget having died. On the contrary, players necessarily know that they have been failing many times, leading their character to several deaths. Barry Atkins speaks of in-game deaths in terms of "inconvenient moments that must be quickly erased from the consciousness of the player [...]" (Atkins 2007, 244). Virtual memory arises hence as a paradoxical capacity, built upon the capacity of forgetting, alternatively and dynamically, ac-

[127] In both cases, it is worth specifying that virtual mementos, just like actual ones, do not trigger memories themselves but rather can aid users in recollection (both actual and virtual). In other words, the observations that follow have to be interpreted as 'potential' and depending on the recollection by users, and not as something objectively inscribed in mementos. I imagine the past of my character both if I decide to customise it with a scar in the face and if that scar is already there and I cannot delete it. The difference between the two is that the first is an intentional memento that I, as a user, design for my character with the intention to project certain imaginative memories within her virtual past; on the other hand, the latter is something that favours such a projection by design of someone else, i.e., the designers of the virtual world.

tual or fictional memories., The virtual subject both remembers and forgets having died, and the experience of having died gets included in, and at the same time excluded from, the construction of the virtual self. Just like the same virtual choice can have different outcomes, it can produce two different virtual memories. Different virtual memories can aid the construction of different corresponding virtual selves, and at the same time virtual selfhood does not erase previous virtual memories. Present virtual choices are made not only based on the most recent corresponding virtual memories but, instead, they rely on the dynamic sum of all the previous, and alternative, virtual memories one has.

Although this process of dynamic exclusion/inclusion of memories within virtual selfhood is particularly observable in the case of virtual deaths, it is at play in other circumstances as well: being interrupted by a thunderstorm in the actual world, having to pause the game to feed the dog, or having to stop playing for months to go abroad are all memories that tend to be excluded from the construction of virtual selves. At the same time, even the fictional events that affect the main character and gameworld may be excluded by virtual memory – suffice it to imagine a player who is interested in the performance and challenge, and not in the plot of the game.[128] Rather than in terms of mutual exclusion, I have been speaking of 'dynamic exclusion/inclusion' to emphasise how no memories are permanently erased from the construction of virtual memory. Rather, the dynamics of virtual memory are better understood as 'tactically enacted', as the multiplicitous self, described at 9.5: its parts get enacted, or inhibited, depending on present purposes and needs.

This looks evident, e.g., when certain gameworlds introduce meta-fictional elements and address players directly, suddenly evoking memories that they were not intuitively considering parts of the virtual selves they were adopting the role of. When Flowey destroys the save file in the adventure game *Undertale* (Fox 2015), for example, unveiling the whole narrative of the game as meta-fiction, the memories of saving the game that were previously not considered as pivotal in the construction of the virtual selfhood connected to the gameworld are suddenly evoked and from that moment on become part of the virtual self that chooses, acts, and decides within the game. In other words, those memories, connected to the meta-operator of saving the game, are tactically enacted as parts of a virtual self

[128] I have written elsewhere (Van de Mosselaer & Caselli 2022) regarding the paradoxicality of virtual memories, and how it could be implemented in virtual worlds as a narrative device. At times, narrative tropes such as that of the amnesiac hero are used, within digital games, to reduce the dissonance between virtual memory and actual memories (see Caselli 2019).

that is radically transformed within the game, and unveiled by the game narrative as amid reality and fiction. Similar things happen in other games in which major narrative twists revolve around the metaleptic unfolding of the gameworld as meta-fictional (see also Edrei 2017), e.g., games such as *Metal Gear Solid* (Kojima 1998), *Nier* (Taro 2010), *Doki Doki Literature Club!* (Team Salvato 2017), and *Nier: Automata* (PlatinumGames 2017), in which extra-fictional memories (save states of the game) are thrown into the fictional world of the in-game narrative, and therefore unveiled as parts of virtual memory. In all these cases, players are requested to change the perspective from which they were remembering virtual events, and therefore to choose, and to behave, according to virtual selves that are suddenly extended through the enacting of previously excluded, but nonetheless there, ready to be dynamically connected to the virtual self, virtual memories.

Both the possibility to surround our virtual selves with identity markers and personal memory cues that are in-between different worlds (including worlds we imagine as we project those memories within our virtual past); and the possibility of dynamically remembering or forgetting events or aspects of the different worlds entailed in the virtual experience, can lead to the construction of more fluid, inconsistent, or even paradoxical versions of ourselves. In this sense, virtual worlds allow us to engage with a phenomenologically more stable, and yet even more existentially unstable and paradoxical, form of role-playing.

7.3 Memories in-between.

Virtual experiences have a transformative potential on our existence through memories that we have, enact, and construct across different worlds, i.e., virtually. To summarise this and the previous chapters, I will distinguish between two dimensions of virtual memory:

- *Alternativity and multiplicity*: virtual memories are themselves multiplicitous, in the sense that we may have different memories of the same virtual event. None of these memories is erased but rather they get tactically enacted depending on the present needs and purposes of the virtual self;

- *In-betweenness and hybridity*: virtual memories are remembered through the overlapping and intertwining of different perspectives, in the sense that we may remember the same virtual event from both the internal and the external perspective. None of these perspectives is erased but rather virtual memory arises as hybrid and

multi-perspectival, although nested in the actual capacity human have of remembering.

It is due to these dimensions that virtual memory can be used transformatively by users, for instance, allowing them to play the role of others; to actively erase or change their memories; or to experiment within virtual 'as ifs' through vibration and resonance. The very chance to fluidify ourselves within virtual worlds relies on virtual memory, and on its dimensions as described above.

After having introduced virtual memory, and how users can be transformed by it, it is worth problematising how the transformative potential of virtual memory can be used by either users, to aim at freedom and self-construction, or by certain systems of power they live within.

Chapter 8. Power, ideology, and virtual memory.

The previous chapters have been dedicated to the relationship between virtual worlds and memory. As previously specified, I have decided to keep the existential and the hermeneutic perspectives distinguished only for operational purposes. It is worth noting, in fact, just like memory in the broadest sense, 'virtual memory' is an umbrella term that refers to both:

- the representational and simulative aspects of virtual worlds intended as virtual sites of memory, i.e., the collective frameworks of virtual memory – which I have been analysing through the hermeneutic perspective;

- our subjective capacity to remember as virtual subjects – which I have been analysing through the existential perspective.

Virtual worlds favour the emergence of virtual memory at both these levels, and simultaneously: at the hermeneutic level, they allow us to 'fluidify' our collective past, and at the existential one, they allow us to 'fluidify' our individual past, our memory, and therefore our sense of the self. Virtual pasts, virtual selves, and virtual memories are therefore to be conceived as dynamically interconnected: when we engage with a virtual world, we construct virtual memories that get involved and used in the construction of ourselves, and which at the same time are framed towards collective frameworks of memory (which virtual worlds re-enact, as virtual memory, and take part in constructing). The hermeneutic and the existential, then, coexist, overlap, and are intertwined.

Once the transformative potential of both these levels of virtual memory understood, it is worth questioning whether fluidifying the past is something spontaneous, i.e., enacted, wanted, and engaged willingly and freely either for the self, the mnemonic communities, and the individual selves that take part into them; or something designed and favoured with manipulatory intent by, and within, certain cultural frameworks.

As both individuals and mnemonic communities, we are not only increasingly reliant on digital memory but, most importantly for our present focus, on virtual memory. Since virtual worlds are increasingly used and widespread in our daily experience, virtual memory is progressively present in our everyday lives as well (see also Van House & Churchill

2008). It is therefore necessary to consider which effects this social diffusion may have on us remembering the past, intended as a process affected by the socio-economic, cultural, and ideological frameworks in which virtual memory is produced, enacted, and interpreted.

To this end, this chapter will consider the ideological implications of what has been observed so far during this thesis. In 8.1, I will introduce the concept of 'hegemonic virtual memory' to address how every form of memory, and especially virtual ones, arises within power relations and processes of subjectivation – to describe this, I will refer the philosophical concept of 'apparatus'. 8.1.1 and 8.1.2 will be dedicated to two forms of hegemonic virtual memory, named blocked and manipulated virtual memory; 8.1.3 will instead emphasise how, arising within complex networks of heterogeneous elements, virtual memory is necessarily vulnerable (and therefore cannot but makes human subjects more vulnerable as they construct themselves through it). In 8.2, I will discuss using virtual memory to target personal freedom within power relations, introducing in 8.3 the idea of 'virtual counter-memory'. 8.3.1 and 8.3.2 will describe how virtual counter-memory can be favoured by design or through transgressive approaches to virtual worlds; in 8.4 I will analyse instead utopian memory-thinking as a further way to target self-construction within virtual apparatuses. 8.5 will conclude the chapter.

8.1 Hegemonic virtual memory.

Framing the transformativity of virtual memory has been necessary to tackle how users of virtual worlds can, or cannot, experience it as transformative. I will now analyse whether the transformative potential of virtual memory can be seen as free, creative, and productive for users, or rather as affected, if not even determined, by power relations.

Power relations are inherent in cultural memory, both at the individual and the collective level. Inspired by the theorists of ideology and hegemony (Althusser 2015[1971]; Foucault 2003; Gramsci 1975; Laclau 2000; Laclau & Mouffe 2001), I will point out that any form of cultural memory is intended as at least partly hegemonic, meaning that remembering arises within a hermeneutic horizon in which certain interpretations of the world are perceived as quasi-natural universalities, and such interpretations are established, constructed, and imposed to support the interests of certain dominant groups (Molden 2016, 126; see also Laclau & Mouffe 2001, xii; Molden 2014). Hegemony is constructed, among other ways, by

prioritising some memories over others according to 'specific power constellations' of a given mnemonic community, and especially through the omission or manipulation of certain remembered events within media (see Molden 2016, 126, 133-134). The increasing shift towards digitised and virtual forms of memory, therefore, introduces technological mediation into an already complex frame of 'relation of forces' (Molden 2016, 125) that already determine every form of cultural memory.

As contended by Van House and Churchill, even though recent technological developments (including the rise of virtual technologies) may favour an enthusiastic response concerning the potentials disclosed for memory (including virtual memory), we should approach them 'cautiously' (Van House & Churchill 2008, 306). In other words, it is important that as we observe and analyse virtual memory we avoid being 'fooled by [rhetorics] of technological Utopianism' (ibid.). As Tzvetan Todorov already warned us in *Les Abus de la mémoire* (1995), against the 'unconditional praise of memory' (idem, 13) we should acknowledge, as both individuals and communities, that "the stakes of memory are too great to be left to enthusiasm […]" (idem, 14), especially once we acknowledge that technological mediation itself is not a neutral process outside of hegemonical influences and worldviews.

To analyse the relation between hegemony, technology, and human beings, I find inspiration in the concept of 'apparatus' (French: *dispositif*). More precisely, I suggest interpreting virtual worlds as apparatuses. The apparatus, according to Michel Foucault, and as discussed by Giorgio Agamben, Gilles Deleuze, and Bertolt Brecht, is a network that connects heterogenous elements (Foucault terms them 'systems of relations' – see Foucault in Agamben 2009, 2), ranging from "discourses, institutions, architectural forms, regulatory decisions, laws, administrative measures, scientific statements, philosophical, moral, and philanthropic propositions" (ibid.), and also including "practices, bodies of knowledge, measures, and institutions" (Agamben 2009, 19), and technologies[129] which aim at managing, controlling, governing, and orienting "the behaviours, gestures, and thoughts of human beings" (ibid.). Apparatuses aim at maintaining, redirecting, or establishing particular power relations (Greene 1998, 27; Packer 2013, 20), and can also be defined as 'machines of governance' (Agamben 2009, 23), which function 'to attach a population to a policy' (Greene 1998, 27). An apparatus can be

[129] Intended here as not mere artefacts but as defined in chapter 1.

> "[…] literally anything that has in some way the capacity to capture, orient, determine, intercept, model, control, or secure the gestures, behaviors, opinions, or discourses of living beings. Not only, therefore, prisons, madhouses, the panopticon, schools, confession, factories, disciplines, judicial measures, and so forth (whose connection with power is in a certain sense evident), but also the pen, writing, literature, philosophy, agriculture, cigarettes, navigation, computers, cellular telephones and - why not - language itself, which is perhaps the most ancient of apparatuses […]" (Agamben 2009, 14).

The concept of apparatus is useful to link every form of expression to the context in which it is produced and received: one of the most championed and debated examples of this is observing how every cultural objectivation within capitalism is and cannot but be tied to the worldview and modes of production proper of capitalism, drawing from Brecht (1978[1957], 51-53; see also Dyer-Witheford & de Peuter 2009; 2021).

Apparatuses maintain and establish certain power relations, and do so by affecting, if not determining, how subjects behave, think, and interpret within them. It is within apparatuses that communities are constructed, and subjectivities are produced: in his 'Technologies for the Self' (1988) Foucault terms this process 'subjectivation' (see also Dorrestijn 2012). Other authors, and especially Louis Althusser, speak in terms of 'interpellation or hailing', pointing out to how, e.g., ideologies constitute individual persons as subjects (Althusser 2014[1971], 188-194). As human beings get transformed in subjects within apparatuses, they also get transformed in objects, in a process of simultaneous subjectivation and objectivation: human beings become both subjects and objects of power relations (Esposito 2012).[130]

The 'apparatus' is especially significant for the present purpose when applied to media and technologies. Jeremy Packer describes the 'media apparatus' (Packer 2013, 20) as necessary to investigate the production of different subjectivities in different historical periods, coinciding with the use of specific technologies (idem, 19). By speaking of media apparatuses, he contends, we understand both how users become subjects through technologies and at the same time 'objectified' through what these technologies facilitate (ibid.). Since

[130] See also how the concept of autopoietic social systems by Niklas Luhmann considers individual persons as constructed, projected by the social systems they are within (1995, 210).

virtual worlds are technologies that arise within, and towards, different 'media apparatuses', they play a "formative role [...] in not simply communicating (representing) iterations [...] conductive to contemporary formations of power/knowledge [...], but also in providing the material and institutional conditions for [...] subjects to be shaped/shape themselves" (Taylor & Voorhees 2018, 9-10).

The concept of 'apparatus' allows me to consider the role that power relations play in the co-constitution between human beings and technologies that I introduced in chapter 1. At the same time, it allows me to consider how the co-constitution between human beings and memories (6.2) is not neutral, but always already affected by politics of memory, ideology, and hegemony. I therefore define as 'hegemonic' every form of virtual memory arising from, and constrained by, certain power relations through apparatuses. If apparatuses tend to control, and construct subjects, they do so also by giving rise to the kinds of memory that they control: I define as 'hegemonic virtual memory' every form of virtual memory determined by hegemonic master narratives, through which apparatuses control, construct, and 'objectify' users. Such forms of memory legitimise systems of power and produce certain interpretations of the world. In other words, remembering users 'are used' by hegemonic virtual memory.

'Being used by hegemonic virtual memory' is a figure of speech, and precisely a personification. As a matter of fact, as we have seen throughout the thesis, virtual memory is a capacity that belongs to users, either if it arises from understanding, interpretation, and functionalisation of virtual sites of memory (hermeneutic side) or if it gets enacted when users adopt virtual subjectivities and construct virtual selves (existential side). To unpack this term, I will contend that 'being used by virtual memory', as a term, points out how enacting virtual memory as constrained, limited, and manipulated by certain apparatuses allow users to construct themselves, as well as to imagine and interpret both their collective and individual pasts, in a way that is not free and spontaneous but that instead arises from manipulated networks of meaning, action, interpretation, and so on and so forth. This is also what the Foucauldian term 'being objectified by apparatuses' means: even if ultimately is always the subject that construct herself, apparatuses heavily affect how this construction happens, and therefore, in a sense, subjects are always already constructed by the apparatuses even if they construct themselves through, and within, them.

Once specified that, and inspired by many game scholars who reflect on games as reflecting (and reflected upon in) the corresponding socio-technical apparatuses (see, e.g., Friedman 1999; Möring & Leino 2016; Hammar 2020; Taylor & Voorhees 2018), I will describe two kinds of hegemonic virtual memory. To do so, I will draw inspiration from Ricoeur (2004[2002], 68-93), distinguishing between blocked and manipulated virtual memory.

8.1.1 Blocked virtual memory.

In *Memory, History, Forgetting* (2004[2002]), Ricoeur contends that "the exercise of memory is its use; yet use includes the possibility of abuse" (idem, 57), and defines 'abuse' as linked with "bad 'mimetics'" (ibid.): in other words, he contends that the aim of memory is 'truthfulness', and that truthfulness can be threatened by abuses of memory (ibid.). According to Ricoeur, multiple abuses of memory expose the fundamental vulnerability of memory, intended as implying the past as it has objectively been (idem, 57-58). Based on what I have observed so far, especially in chapters 4, 5, and 8, I will follow a less truth-based approach to memory. As I have explained, every act of remembering is, by definition, a re-imagining of the past and does not aim to portray it objectively – instead, remembering constructs relatively stable versions of the past according to present purposes and aims, functional to identity formation, both on the individual and on the collective level. It is therefore misleading, from my perspective, to contend that truthfulness is the aim of memory.

Nonetheless, to address hegemonic virtual memory I find it useful to refer to the two 'abuses' of memory Ricoeur identifies. The interpretation Ricoeur provides already merges individual and collective accounts of memory, therefore allowing me to address virtual memory from both the existential and the hermeneutic perspectives simultaneously. Scholars interested in hegemonic memory, although without referencing Ricoeur, address these two forms of memory as well, and contend that hegemonic memory is constructed through the exclusion of certain past events and the manipulation of remembered ones (see Medina 2006, 108; Bourdieu 1977, 78-79), i.e., through constant processes of 'omission and manipulation' of memory in the service of hegemonic narratives (Molden 2016, 133).

Inspired by this distinction, I will distinguish between 'blocked' and 'manipulated' virtual memory. By 'blocked virtual memory', I refer to those forms of virtual memory that are inhibited, limited, or substituted by a compulsion to repeat. As argued by Ricoeur, who is inspired by Sigmund Freud, blocked memory arises from the tie between a compulsion to repeat and resistance (idem, 69-80). The therapeutic context provides us with a clear example of this compulsion: when the memory of a patient is 'blocked' by a traumatic event, the patient resists remembering it (ibid.). As a result, she tends to 'act out' and re-enact traumatic memories over and over without knowing it ('compulsion to repeat' – see ibid.).

An example that can be easily transferred towards collective forms of memory and therefore virtual worlds is that of violence (also used by Ricoeur). Many collective identities (e.g., national identities or group identities – see, e.g., Bar-Tal 2003; Burton 1969; Coser 1956; Galtung 1969; Mitchell 1981) arise from some kinds of violence, and yet they resist engaging with the memory of it – therefore compulsively re-enact violence without remembering it (Ricoeur 2004[2002], 78-79). This emerges clearly within virtual worlds too, arousing experiences of blocked virtual memory on both the individual and the collective level. Many virtual worlds such as digital games tend to re-imagine the past by reducing its complexity, and by selectively focusing on conflicts such as battles or wars. In this sense, virtual sites of memory often provide users with versions of the past that are refashioned through pushing to the margins, or 'blocking out' entirely, some memories of it, and at the same time re-enacting violence and conflicts as a compulsory substitution to remembering the complexity (or the horror) of that past. Not only does violence often compulsively substitute memory but it is also itself selectively depicted to "exclude attention to salient, yet unpleasant, features of warfare such as problematic forms of violence, long-term psychological impacts, or sociopolitical blowbacks" (Pötzsch 2015, 156).

I have analysed an example of this elsewhere (Caselli & Toniolo 2021), by dealing with the gacha pseudohistorical mobile game *Azur Lane* (Shanghai Manjuu & Xiamen Yongshi 2017): just as in many other pseudohistorical games, *Azur Lane* re-imagines the Second World War conflict in a heavily relativistic way. It revolves around only heroically depicted and simulated fights and battles, while at the same time 'blocking', e.g., every memory that deal with the Holocaust. Despite the fact that German, Japanese, and Italian characters are involved and playable, they are systematically cleansed of references to the most horrific aspects of their history, and only presented as commodified and highly fetishized heroes to

empathise with and to project ourselves onto (Caselli & Toniolo 2021). Since *Azur Lane* selectively 'blocks' certain virtual memories of the Second World War, by experiencing it as a virtual site of memory one may be exposed (voluntarily or non-voluntarily) to transformative consequences such as, e.g., underestimating, or even forgetting, some dramatic aspects of the Second World War Conflict.

The bias digital games have towards memory-making emphasising violence (regardless of its being historical, fantastical, or pseudohistorical; see also Hammar 2020) can be therefore interpreted as a form of compulsory re-enactment, in place of blocked traumatic memories we have never fully dealt with. This blocked virtual memory, as well as other kinds, can be observed both on the individual and on the collective side. Virtual sites of memory usually provide us with representations, simulations, and re-enactments of the past by blocking some memories of it, and at the same time we engage with them as virtual subjects, choosing how to behave and what to do within them. By engaging with such worlds, and by playing a role within them, we are exposed to re-mediations of a past that we recognise, understand, and interpret (hermeneutically) and that we inhabit, affect, and construct ourselves towards (existentially).If the term 'blocked' refers to pathological inhibitions or malfunctions of memory, 'manipulated' refers instead to a slightly different process.

8.1.2 Manipulated virtual memory.

By 'manipulated virtual memory', I refer to all those processes of 'concerted manipulations', or instrumentalizations, of virtual memory "by those who hold the power" (Ricoeur 2004[2002], 80). Both ideology and hegemony tend to lead to this manipulation: by 'remaining hidden', 'unacknowledged', and by 'inverting themselves' (Ricoeur claims "denouncing its adversaries in the field of competition between ideologies, for it is always the other who stoops to ideology" – idem, 82), they both tend to affect every act of collective and individual remembering, therefore re-imagining the past for operational and present purposes of both individual and collective identity-creation (idem, 80-85).

As observed by Hammar, digital games "are ripe for analysing how understandings of the past are formed in the present and their political ramifications" (Hammar 2020). I will extend this claim to virtual worlds in general. As hermeneutic technologies, virtual worlds interpret reality as we engage with it, and this is evident especially with the past. Being pro-

duced towards, within, and at times even by, power hierarchies, economical needs, and hegemonically determined cultural frameworks, virtual worlds cannot but reinterpret the past according to present needs, beliefs, and purposes. As an example, one may think of how hegemonic masculinity (for an overview of the concept see Connell & Messerschmidt 2005) affects virtual memory-making, both on the individual (and therefore existential) and collective (and therefore hermeneutic) level, e.g., in digital games. As a matter of fact, 'decades of research on gender and digital gameplay have established [that] video games have historically been the domain of men and boys' (Taylor & Voorhees 2018, 3), marginalising "girls […], women […], and other gender identities that trouble heteronormativity" (ibid.; see also, e.g., Jenson & de Castell 2010; 2011; Kafai et al. 2009).

To provide an example, suffice it to think of historical open-world digital games. As with many renowned open-world games set in the contemporary age, *Mafia III* (Hangar 13 2016) re-interprets the past according to a "capitalist hegemonic masculinity that emphasize violence, car fetishism, heterosexual titillation, and anti-communism" (Hammar 2020). A similar route is followed by many other historical games, which depict the past focusing on masculinity, violence, power, and conquest.

In pseudohistorical and fantasy virtual worlds, such hegemony is even more observable: suffice it to think how most fantasy games are set in a re-imagined or wholly fictional past world are usually imbued with the power fantasy trope,[131] which many scholars have increasingly associated with sexism, homophobia, racism, patriarchy and other cultural biases (see Baker 2015), and which provides "some of the most virulent toxic gender expressions seen in recent times" (Habel 2018). As a virtual site of memory, *God of War* (Santa Monica Studio 2005) re-imagines Ancient Greece by adopting a heavily gendered perspective (Habel 2018) focused on hyperviolence, slaughter, and favouring 'masculine performances' (Burril 2008, 2) - not to mention the sexist power fantasy sequence of the erotic mini game. It therefore re-imagines the past and mythology as heavily gendered, favouring virtual memory-making that is also hegemonized and manipulated. It is also interesting analysing gendered power fantasies from an existential perspective. Even at the individual

[131] I describe this trope as the intertwining between representational/narrative devices (taking violent revenge over powerful enemies and becoming increasingly stronger; dominating over the narrative world of the game; becoming unstoppable and feared by other virtual characters) and procedural elements (convincing the users that they are becoming increasingly skillful by decreasing difficulty – see, among others, Habel 2018; Baker 2015.

level of virtual memory, power fantasies tend to provide players with highly selective, and empowering, virtual memories.

I already mentioned in 8.2.2 how certain events are usually automatically excluded from virtual memory: by removing and trivialising death,[132] for example, many virtual worlds provide users with "a fantasy of constant self-improvement, in which [they] can accumulate experiences indefinitely, growing ever stronger and more capable without the shadow of the inevitability of decline, senility, and mortality" (Gualeni & Vella 2020, 80). This choice fulfils not only the existential need of tactically isolating destructive and disturbing thoughts (ibid.) but also provides users with empowering gendered virtual worlds. In the digital stealth game *Hitman* (IO Interactive 2016), users play the role of the genetically engineered assassin Agent 47 and kill several targets all around the globe. The fictional aspects of the game, including the game's narrative, dialogue, and soundtrack, depict Agent 47 and his missions as cold, cynical, and almost infallible (this is also why Agent 47 keeps being assigned from one mission to the other, and kills the most influential and powerful criminals all around the world). By doing so, the game constantly re-absorbs the users' failures, their funny unintentional gags, and their incidental game-overs. Agent 47 is still a great and infallible killer, regardless of how many attempts users had before succeeding in their missions. In this sense, by not addressing certain failures, and by systematically 'erasing' game overs from the fictional world of the game (as a matter of fact, Agent 47 never dies during his missions), the gameworld empowers its users by leveraging the erasure of their in-game deaths, mistakes, and gaffes. It is in this sense that even *Hitman* favours the engagement with a virtual world by manipulating virtual memories, leveraging their paradoxicality, selectivity, and ambiguity, and providing users with a hegemonised, as well as gendered, fantasy of violence, power, and infallibility. Such enactment of 'hegemonic gender identities' goes far beyond the two examples provided here: avatars in games tend to be a "hyper empowered 'badass'" (Habel 2018) even outside of explicit power fantasy fictional worlds, and even outside of gameworlds. Broadly speaking, from an existential perspective, many virtual worlds allow us to explore ourselves and our identities (ibid.) by selectively erasing at least part of our 'incidental' virtual memories.

[132] On this matter, Jesper Juul also observes how the possibility to reach a fail-state within a digital game is itself problematic if we want to reduce the experience of the game as that of a fictional world. The fact that playable characters usually have more than one life favours a de-facto trivialisation of death as a fictional event, to the point at which it becomes almost irrelevant from a narrative perspective (Juul 2005, 123; see also Hogenbirk et al. 2018).

8.1.3 Vulnerable virtual pasts, vulnerable virtual memory.

Manipulations and omissions within hegemonic virtual memory must be carefully taken into account to understand how freely we fluidify our past, and how much this past is instead crafted, ideologised, and technologised beforehand as we virtually fluidify it (with all the implications such manipulation may have from an ideological and therefore existential perspective).

Virtual worlds 'hegemonise' virtual memory for many interlocking reasons, which I will gather all of them under the umbrella term 'design choices'. Some of them are the same as those that determine also other forms of hegemonic memory across different media: representational biases (i.e., the 'repertoire' of pre-existing and surrounding mediated memories, which determine the hermeneutic horizon and the intermedial level - see 6.1), for example, those which also affect non-virtual hegemonic forms of mediated memory, e.g., in cinema and literature. Other reasons are specific to virtual worlds, including: procedural reasons (i.e., design choices that concern the procedures that the virtual world in question allows user to perform within it – at times, e.g., violence in games is enacted and emphasised to enhance player agency, immersion, challenge, and engagement in general); technological limitations (i.e., omitting memories results from a process of selection that is disclosed also by technological limitations. Since our possibility within simulations are limited, designers must choose which aspects they simulate and which aspects should be instead excluded); marketability (i.e., marketing decisions behind the design of virtual worlds, including, e.g., how they fulfil certain needs as marketable objects, for example through replayability); and established medium literacies, including the expectations users have basing on genre, theme, and author, also constructed across other non-virtual media.

The engagement with virtual memory can raise from worlds that are crafted, and designed, with certain (although involuntary) purposes in mind, i.e., through, within, by, and towards certain 'media apparatuses', i.e., at the same time 'technological', 'representational', 'biased', 'hegemonical or counter-hegemonical', 'economical', 'procedural' apparatuses, intertwining medium conventions, established media literacies, representational biases, economic purposes and needs, all intertwined. Virtual memory is constrained by users (as 'objectified' by the technological apparatus they construct their selves towards, i.e., their background, their interpretation), designers (their background, interpretation, intention, design choices), by socio-cultural, economic contingencies, and by the technology in use

(limits and affordances). All these aspects of virtual worlds and virtual memory needs to be accounted for when considering the existential implications of virtual memory, since the construction of the self that these technologies (as well as the memories we construct within and towards them) favour is, and cannot but be, constrained by the technological apparatus they are produced and used within. Ultimately, and regardless of how voluntarily or not users enact virtual memory as a transformative experience, such constraints can also be unacknowledged, unnoticed, and therefore can expose users to nonvoluntary transformations. Notwithstanding the fact that users voluntarily experience virtual memory to embrace novel perspectives, unexplored ways of thinking and to construct their selves, i.e., as transformative events undertaken by a transformative choice, nonetheless they can be exposed to cumulative, non-voluntary virtual memories: they can be, in other words, non-voluntarily 'constructed' and 'objectified' by virtual memory – as both individuals and as communities. Digital games already provide (both memory and game) scholars with noteworthy examples of how users and gameworlds, through virtual memory, are exposed to such processes of co-definition and manipulation. As fruitfully observed by Hammar (see, e.g., 2019c, 2020), and implied by other game scholars mentioned so far and especially throughout sections 8.1.1 and 8.1.2, many are the factors within the gaming industry that can be interpreted as reinforcing hegemonic worldviews, on either the level of production, market, design, and reception, or rather on all these levels conjoined and intertwined. For a thorough account of how hegemony affects digital games it is necessary to approach them as texts designed, sold, played, and received towards several interlocked and co-defining mnemonic frameworks – and a same thing can be observed for virtual worlds in general.

Since it arises from engagement with virtual worlds that are "socio-technical systems, neither entirely social nor technical" (Van House & Churchill 2008, 306), I contend that virtual memory is to be interpreted by focusing on its vulnerability. Since it arises, and therefore is tactically enacted towards, systems that manipulate and re-imagine the collective as well as the individual past to serve and reinforce present or future powers, virtual memory is to be intended as making the past vulnerable. As I observed so far, virtual worlds provide users with selectively chosen elements they can remember of it, and with selected ways in which they can remember it. This is observable in both virtual remembering of collective pasts and in virtual remembering of personal experiences, i.e., both virtualising Ancient Rome and personal memories (selectively erased or overwritten). At the same time, virtual memory is itself vulnerable: it is subjected, as a capacity, to subsequent overwriting, shift-

ing, re-imagining – think of the possibility, e.g., to replay a historical battle in a virtual site of memory; or to replay a same story multiple times by changing our approach to it.

Fluidifying the past and fluidifying memory, in this sense, means making them more vulnerable, less stable, and therefore more subjected to manipulation, erasure, or control. Being transformed by virtual memory means, at the same time, to become more vulnerable as subjects, as well as more controllable and exposed to manipulation.[133] It would be surprisingly hard to speak of transformative virtual memory without referencing its manipulation, or vulnerability. Virtual memories are essentially constructed within, and towards, a network of cultural and technological apparatuses that manipulates them, at least to a degree. And such manipulation also determines how we are existentially transformed by virtual memory and construct ourselves through it: as observed by Nick Dyer-Witheford and Greig de Peuter in *Games of Empire* (idem), "[c]ontra enthusiasts for game 'empowerment,' interactivity does not mean virtual play is free from ideology; rather, it intensifies the sense of free will necessary for ideology to work really well. Players, of their own choice, rehearse socially stipulated subjectivities" (idem, 192).

By analysing virtual memory, then, a significant question arises: is every form of virtual memory to be intended as 'manipulated'? Is there any way to experience virtual memory as not 'already-abused' by some apparatus? Is it possible to 'use' virtual memory, aiming at self-construction, and away from these manipulations? To answer this question, I may delve into apparatus theory once more: the following paragraph will be dedicated to this matter.

8.2 Virtual memory and freedom.

In the previous paragraph, I have defined 'hegemonic' virtual memory as either blocked or manipulated by, and within, certain apparatuses. Since, as we have seen in the previous chapters, users construct themselves and the mnemonic communities they are part of also through such memories, a worrying consequence has arisen: can we make 'use' of virtual memory to construct ourselves in a way that is free from the technological, medial, cultural, ideological apparatuses that allow us to experience it? The question has a Foucauldian inspiration: just as Foucault questioned whether human beings could aim at self-construction, and not at being constructed and subjectified through (and therefore objecti-

[133] As also contended by existential media scholars (see, e.g., Lagerkvist 2017; 2019).

fied by) systems of power, I may ask whether users can 'use' virtual memory to freely construct themselves, instead of 'being used', or being objectified by it? Can virtual memory, as a transformative experience, be used outside of designed, cultural, ideological, and technological manipulations? And can users construct themselves in a way that is not constrained by the subjectivities that these apparatuses aim at constructing? This section will deal with this matter.

In his work, Foucault provides a concept of freedom towards the apparatus that could be used to fit my present purpose. First, according to Foucault, no society can exist outside of power relations, and therefore outside of apparatuses. As observed by the author,

> "[...] in human relationships, whether they involve verbal communication [...] or amorous, institutional, or economic relationships, power is always present [...]. So I am speaking of relations that exist at different levels, in different forms; these power relations are mobile, they can be modified, they are not fixed once and for all" (Foucault 2000[1984], 291-292).

As a consequence, we may contend, there is no 'essential freedom', intended as a state of being outside of relations of power or apparatuses (Foucault 1982, 790). At the same time, for Foucault, power relations do not prevent existential freedom, rather they are its necessary preconditions, and vice versa. Even in relations that are not balanced an at least minimum degree of freedom on both sides is present, to the point that Foucault interprets freedom as a precondition of every relation of power (idem 292). In other words, every system of power is based upon the possibility of resisting it, even in cases in which the apparatus allows 'extremely limited margins of freedom' (ibid.). Subjects always have, in other words, always the potential to distance themselves from the apparatuses that construct them, and yet this potential cannot but be realised within apparatuses themselves (idem).

To clarify this point, Foucault distinguishes between freedom and liberation: the first concept is 'internal' to the apparatus, the second points out instead to the possibility of exiting it. Certain relations of power are based upon domination, e.g., slavery, and systematically tend to prevent dominated individual or communities to experience their freedom (even at a minimal degree). In these cases, liberation from the apparatus is (and cannot but be) the condition for freedom (idem, 283-284; see also Armstrong 2008; Frost 2019, 163). None-

theless, liberation is a form of resistance to domination that releases pre-existing subjects and identities from an oppressive relation of power – therefore leading to the establishment of new power relations (Foucault 2000[1984], 283-284; Armstrong 2008, 22). Since there is no way to live outside of an apparatus, liberation only consists in exiting from one apparatus and giving birth to a new one or re-enacting the apparatus that existed before the domination.

On the other hand, freedom is a possibility to break free that is provided, and contemplated, by apparatuses themselves. An example to clarify this, provided by Foucault himself, is that of conventional marital structures of the eighteenth and nineteenth centuries: there, despite only men wielded power, women had nonetheless 'quite a few options' to experience their freedom – "they could deceive their husbands, pilfer money from them, refuse them sex" (Foucault 2000[1984], 292). Even if apparatuses are always at place in societies, technologies, and ultimately human beings, they nonetheless grant certain degrees of freedom, allowing people to resist within them,[134] and are obliged to change in the face of acts of resistance (Foucault 2000[1982]).

The definition Foucault provides of freedom is therefore dependent on that of apparatus: freedom is the agonistic 'permanent provocation' between subjects and apparatuses (Foucault 1982, 790), a creative process of promoting new kinds of subjectivities by refusing the subjectivation that constructed them as they are (idem, 785). In other words, freedom consists in self-creation, i.e., in subjects self-creating themselves anew, but always considering the apparatuses that enable them to discern the actions and interventions to effect change and moving towards the new (see also Frost 2019, 165). Apparatuses control life, and yet they must react to the creative acts of self-creation they allow. According to this view, freedom is therefore not to be intended as a 'moving out' from apparatuses (such as liberation) but instead as resisting them, and (most significantly) 'reworking them' (idem, 164), both processes that cannot but happen within them (Foucault 2000[1984]). Therefore, I will point out that self-refashioning and self-transformation through virtual memory (see chapter 7) can indeed be intended as acts of freedom, once they are appropriately framed towards an apparatus, and directed against it.

[134] According to readers of Foucault such as Deleuze, in retaining resistance as fundamental for every system of power, in a sense the author also interprets it as something that is even 'prior' to power (Deleuze 2006 [1988], 89).

Taking inspiration from Foucault,[135] I will list the ways in which virtual memory can be used to aim at self-construction. In other words, I will list two different 'practices of freedom' (Foucault 2000[1984]) that imply virtual memory and through which we can resist, and rework, apparatuses. This list is not intended as comprehensive and finished, but as an initial attempt at taxonomising different ways to 'use' virtual memory creatively, to achieve freedom from different apparatuses as both communities and individuals. Both these 'uses' of virtual memory, as it may be evident, revolve around the inherent future-orientation of memory.

8.3 Virtual counter-memory.

I use 'counter-memory' to point out processes "of being *contra/counter*-memory, as well as *contra/counter*-history – but not so much vis-à-vis amnesia, as much as the desire to contest the hegemony of monolithic, monumental memory sites and historiography" (Tello 2019, 390, emphasis of the author). The concept of counter-memory has been introduced by Foucault (1998 [1971]) and has been discussed several times by many other philosophers, and scholars (see Tello 2012 for a genealogy of the term; see also Barthes 1980; Lipsitz 1990, 213-214; Stephen 2005; Tachibana 1998; Young 2000). Enacting counter-memory means running counter, e.g., "the official histories of governments, mainstream mass media, and the society of the spectacle" (Demos 2012), or, in general, to go against hegemonic memory, i.e., manipulations of memory by systems of power and through apparatuses – it is therefore an 'act of political subjectification' (ibid.), which may produce 'nomadic subjectivities' (Braidotti 2002; 2011) that resist "assimilation and homologation into normative modes of being and performing the self" (Tello 2019, 394). Regardless counter-memory is usually associated with memorialisation, i.e., "a collective practice of relearning […] of forgotten, suppressed, and excluded histories" (Demos 2012), I term every counter-hegemonical, political enactment of memory against current systems of power 'counter-memory', including those that happen only at the individual level. Counter-memory per-

[135] Foucault has not been the only philosopher to speak of power relations, apparatuses, and freedom. Among others, it is especially Agamben who disagrees with his claims, and instead sees in evading apparatuses as the only possible freedom (see Agamben 2009; see also Frost 2019). Instead of revolving around 'practices of freedom', Agamben's thought deals with the need to 'deactivate' the apparatus, becoming indifferent to it, and therefore to rethink our life outside of the processes of subjectivation that the apparatus entails. Such approach to freedom, nonetheless, is far less concrete than that provided by Foucault. By relying on the concept of immanence, and on the whole rethinking of human life outside of power relations, the thought of Agamben and other singularity theorists (see Agamben 2007; Nancy 1991) seems therefore less suitable for my present purpose. I will rely on the framework provided by Foucault, which already offers an operational 'tool-box' that we can fruitfully apply to our virtual world experiences.

formances allow subjects to project themselves beyond the processes of subjectivation (and objectification) within systems of power, attempting at creative self-construction.

Within virtual worlds, such self-construction happens through a human-technology relation, i.e., through the technological apparatus (the virtual world in question). Within such worlds enactments of virtual counter-memory can happen: on the collective level, if and only if a user acknowledges them to be virtual sites of memory (see 4.5 and chapter 5) used as apparatuses to reinforce and produce subjectivities towards certain systems of power; on the individual level, if and only if a user acknowledges the use the virtual world in question does of virtual memory enacts or reinforce systems of power, therefore favouring the emergence of certain subjectivities and preventing the construction of others. As claimed by Hammar, virtual worlds:

> "[…] allow performances within the constraints of both the representational layer and mechanical system and this can feed into processes of cultural memory and thus how [users] actively remember the past. Given [this] and the fact that contemporary hegemonic power hierarchies, processes of cultural memory and mediated cultural expressions intertwine in how collectives and individuals remember the past, it therefore seems that the media-specific affordances of [virtual worlds] have the potential to play a significant part in these processes" (Hammar 2017, 392).

More specifically, inspired by the categorisation of different kinds of transgressivity in digital games provided by Pötzsch (2018), I consider experiences of virtual counter-memory capable of causing processes of subversion that are critical, i.e., which question and possibly subvert 'prevailing discourses and power relations' (idem, 53), 'often driven by an awareness of injustice and oppression and aim at facilitating resistance and change' (ibid.), therefore excluding other kinds of transgression and subversion. Virtual counter-memory can be enacted in two different ways: by design, or by the transgressive or subversive actions of users against the design of virtual worlds.

8.3.1 'Designed' virtual counter-memory.

When the virtual worlds themselves provide users with forms of virtual memory that go against current systems of power, provided that users must nonetheless acknowledge and therefore enact virtual memory themselves, I may speak of 'designed' virtual counter-

memory. The possibility of virtual worlds to favour critical thinking and to question current power relations by design is discussed by many game scholars, and especially by Mary Flanagan (2009) and Ian Bogost (2009). Both focus on how virtual worlds, and digital games specifically, can be designed with specific rhetorical purposes in mind, i.e., with the intent of persuading players of the wrongness or undesirability of certain states of things. Not only virtual worlds can be designed to criticise power relations and corresponding values and beliefs – at times, they "not only reflect and express but also activate these beliefs and values in powerful ways" (Flanagan & Nissenbaum 2014, 3), inviting users to acknowledge limitations, wrongness, or questionability of power relations and favouring users, by using the terminology of Foucault, to adopt a critical distance towards them (Foucault 1997, 47).
In other words, virtual worlds can be designed to unveil the presence of certain power relations, to resist them, and to rework them.

Here it is worth raising doubts on the very possibility of providing users with the possibility of thinking 'outside' of the apparatus, from its inside. Is it possible to favour counter-memory by design? In 'Counter-hegemonic commemorative play' (2017), Hammar contends that historical digital games

> "[…] possess the capability to enable the legitimacy and acceptability of marginalised identities in the same manner as hegemonic identities […] by offering counter-hegemonic commemorative play […]. It seems clear that digital games are able to meaningfully engage, or even challenge, understandings of the past" (idem, 391).

Such a process, to be precise, shows the very potential virtual worlds may have to favour fluidifications of the past, either collective or individual. It is worth noting that such a process of re-making collective memory is, and cannot but be, a way to manipulate it, even if it is against certain systems of power. By engaging with virtual worlds that simulate and represent memories that are usually forgotten for hegemonic or ideological reasons, users can re-imagine the past against how it is usually re-told and interpreted, and act within a virtual version of it. This may also favour transformative consequences for both individuals and communities – Hammar speaks, for example, of how 'designed recognition' and the acknowledgement of non-hegemonic identities (and, I may add, subjectivities) may lead to empowerment and inclusion of marginalised communities or individuals (idem), providing

the example of *Assassin's Creed Freedom Cry* (Ubisoft Québec 2013), which revolves around the historical trauma of the transatlantic slave trade and slave system across the Caribbean.

Some virtual worlds achieve this through procedural means. As observed by Pötzsch, e.g., the independent tactical survival game *This War of Mine* (11 bit studios 2014), "[b]y forcing attention to the fate of civilians, deliberately estranging the controls for in-game combat, and keeping necessary resources at a constant minimum, [...] recalibrates key filters that are determinate of the presentation of war in generic game titles as well as in hegemonic war discourse" (Pötzsch 2018, 54) – this provided that it is enacted and perceived as a virtual site of memory by users (the game is inspired by the Siege of Sarajevo (1992-1996). The same can be said for the re-invention of genre clichés and war narratives in the third-person shooter (and political fiction) *Spec Ops: The Line* (Yager Development 2012) - the game, an interactive re-adaptation of the novel *Heart of Darkness* (Conrad 1899), "[...] does enact the psychological and ethical ruin of a Western soldier-ideal, whose prescribed role as a white protector against an Arab heart of darkness is revealed as defunct" (Murray 2016, 47), providing users with the experience of usually minimised or totally erased aspects of contemporary wars, e.g., the effects of white phosphorous on the civilians, and therefore "blurring the ethical boundary between soldier and mass murderer" (idem, 45) through the very act of play, e.g., facing hard choices, killing innocents, and so on and so forth. By taking the role of a virtual soldier, users may in other words enact counter-memory and find themselves immersed in a gameworld that continuously undermines the traditional role and figure war narratives, and especially war games, ascribe soldiers.

Similarly, the 'historical public bathroom simulator' *The Tearoom* (Yang 2017a; see Yang 2017b) draws, by design, users in the role of fictionalised historical queer subjects, striving to perform illicit oral sex without being caught by the police, therefore both shedding light on the queer community of the 60s and on the perspectival positioning of identity and subjectivity towards pleasure, history, and society (see Harvat 2018, 17-23). Here, it may be evident how leveraging on collective memory the virtual world in question allows users to adopt a virtual subjectivity that challenges both traditional historical gaming and heteronormative gaming procedures:

> "Games often produce (non-sexual) pleasure: excitement, joy and catharsis are common affective features of games. Typically, games attempt to maximize player pleasure by producing situations in which players manipulate systems designed specifically for that purpose to the player's benefit: pleasure in games is almost always player-focused and player-directed. But while players may experience pleasure from *The Tearoom* (and certainly I believe that they are supposed to), the game is primarily about pleasuring someone else, about getting pleasure precisely through giving it" (Harvat 2018, 18).

The procedures users enact within *The Tearoom* (Yang 2017a) at the same time reinterpret the past against heteronormative hegemonical discourses (virtual counter-memory) and challenge traditional gaming roles and purposes – favouring, I may say, e.g., the fluidification of the self and the challenging of traditional gendered subjectivation through virtual memory in hetero male players. Here 'virtual memory' is used to point out both the individual and collective levels of cultural memory, simultaneously. By simulating a historical context (with metaphorical elements), *The Tearoom* (ibid.) can be experienced and interpreted as a virtual site of memory (collective side), in which 'counter-memory' means going against the grain in traditional and heteronormative historical representations/simulations. At the same time, by making users play the role of virtual queer subjects, the game favours them acquiring virtual memories (individual side) of giving pleasure and eluding control of the authorities that may be absorbed, once experienced transformatively, into one's multiplicitous self.

Even the most seemingly explicit cases of 'designed' virtual counter-memory need further attention and must be analysed in their (both textual and procedural) complexity. Being experiences that are designed within specific cultural and hermeneutic horizons, in fact, virtual worlds may provide virtual counter-memory 'by design' for what concerns certain events, identities, or processes, and at the same time may give rise to hegemonic narratives in simulating other elements. It is really hard, in other words, to find virtual worlds that contrast by design every hegemonic implication or discourse. The case of *Spec Ops: The Line* (Yager Development 2012) is quite explicative in this sense: as suggested by Murray, despite the game use genre expectations, narrative, and choice to go against hegemonic and stereotypical war narratives and war game clichés, at the same time

> "[…] in the ideological treatment of present-day Dubai, its racialized sense of place points to fears surrounding the modernization of non-Western centers and what that might mean for the United States, with its imperilled superpower status. Core to the pleasure of *The Line* is its access to a deeper American cultural imaginary of the Arab world as regressing into calamity, and the necessity of intervention in the name of women and the innocent" (Murray 2016, 47).

Similar is the case of the role-playing game *Greedfall* (Spiders 2019). *Greedfall* (ibid.) is a pseudohistorical game set in a 17th century-styled fantasy world, in which the island of Teer Fradee is discovered by the colonial forces of the Merchant Congregation. After traveling to the island, the player establishes diplomatic relations with the natives and with two neighbouring colonizing countries. Instead of overtly embracing colonialist themes, at a surface level the game seems to use characterizations and narratives to subvert traditional post-colonialist depictions of the discovery of America (a case of 'designed' virtual counter-memory). Despite this, the gameplay explicitly re-enacts post-colonialist schemata and rhetoric, e.g., implicitly asserting that the space of the unknown island is only there to become a digital playground for the player, i.e., to 'be colonised' by him; offering a crafting system all based on the exploitation of natural resources; constantly recurring to violence as the only way to solve conflicts with both natives and other colonisers; depicting the protagonist as Thomas Carlyle's 'great man' (2001 [1908]; see also Chan 2019). Despite (according to implied intentionality) the game seems interested in going against colonialist rhetoric and ideals, players will, in other words and nonetheless, "inevitably be playing out a colonialist fantasy" (ibid.), therefore re-enacting the fantasies of colonialism-capitalism (as fruitfully noticed in Mukherjee 2016, 2017a; Jayanth 2021).

As these two examples show, and as already observed by Foucault, it is impossible to design an experience that is entirely outside of any sort of hegemonic discourse. It is therefore necessary to approach such virtual worlds carefully and interpret them by distinguishing between experiences of virtual counter-memory and virtual memory-making that reinforces, although subtly, hegemonic power relations and subjectivations.

8.3.2 'Subversive' virtual counter-memory.

In the case of virtual worlds that do not favour 'counter-memory' by design, users may engage with it by subverting either the power relations and systems of value that the virtual

world depicts or the procedures that the virtual world in question requires them to perform. In virtual worlds, subversive users can loosely be defined as those who aim at "subverting the will of the designer" (Tanenbaum 2014, 12; see also Aarseth 2007b), both for what concerns representational aspects of the virtual world (i.e., subverting the fictional world, producing representations that are not in line with those designed) and the simulative aspects of it (i.e., subverting its rules, and exploiting interactional mechanics to go against what the virtual world in question expects you to perform within it[136] - see also Ruberg 2019; Taylor 2018).[137] In dealing with virtual memory, subverting the will of the designer is the most effective way to practice counter-memory. This requires acknowledging how the virtual world in question is depicting or enacting memory (either on the individual or the collective level) to reinforce or re-enact certain systems of power and embracing the freedom it provides us to go against this.

In *GreedFall* (Spiders 2019), e.g., it is necessary: first of all, to acknowledge the game as a virtual site of memory. Secondly, to recognise certain mechanics within the game as hegemonic, biased, or affected and re-enacting current systems of power: an example could be that of the in-game bestiary, which requires users to kill creatures before obtaining their description, experience points, and items, therefore reinforcing the exploitation of natural resources (and even the very perception of the natural world as a resource) proper of the colonialist thought. By acknowledging such simulation of an unknown, past other world as a 'colonialist fantasy' (Chan 2019), one may therefore choose to subvert it – enacting anti-colonialist behaviours, and therefore producing virtual counter-memory. One may, e.g., choose to avoid gathering resources or experience points by slaughtering autochthonous animals, at the cost of leaving the bestiary of the game incomplete, of not gathering strength or powerful items through crafting, and so on. The game's progression, although it criticises colonialist thinking through narrative, revolves around a colonialist understanding and interpretation of the past: it is therefore by subverting such interpretations that one may produce an (although paradoxical) anti-colonialist representation of the past, by using its simulative aspects to go against the systems of power they re-enact and are affected by. This may also mean, as subjects constructed within and by colonialist, imperialist systems of power, (virtually) going against themselves: fluidifying the past though vir-

[136] Here it is worth noting that, with reference to what observed in chapter 1.5, the 'expectations' I am referring to arise from the engagement of users with the virtual world in question, and through the creation of the figure of an implied designer.

[137] Subversive play also echoes 'critical play', introduced by Mary Flanagan. Flanagan terms practices of subversive engagement with games 'unplaying' (Flanagan 2009, 32).

tual counter-memory, in that sense, means also going against us as constructed and influenced by that past. It is by reimagining the past, and ourselves within it, that we may attempt at reinventing ourselves through it, therefore using our virtual memory to aim at free self-construction against current power systems.

It is worth noting that many virtual worlds are also structurally linked, procedurally, to the interpretation of the past they provide. Going against colonialist thinking within virtual sites of memory that re-imagine colonialism may in other words make it impossible to engage with certain aspects of them. In-game achievements in *GreedFall* (Spiders 2019) revolve, e.g., around the completion of the bestiary mentioned above: by subverting the game's colonialist expectations and historical interpretation, one may be forced to not complete its bestiary. The game as a whole counters virtual counter-memory: not exploiting natural resources and not killing animals may make some (both primary and optional) quests impossible to complete, with the result of preventing users getting to the game finale. By countering the procedures and representations of the game, virtual counter-memory means totally subverting the flow of the game at the risk of being exposed to failure, frustration, and ultimately making it impossible to complete. Regardless of how strict the margins of freedom a virtual world provide users are, it is pushing it towards its own boundaries, and therefore unveiling how it is limited and biased in how it re-imagines the past, which unveils the freeing and creative potential of virtual counter-memory, as a way to counter how we have been constructed as subjects by power relations too.

At the individual level, virtual counter-memory may be even more sweeping. As observed in 8.2, manipulating virtual memory at the individual level means also transforming virtual worlds in highly commodified experiences in which failure and identity are constantly re-absorbed and open to re-imagination. To counter these processes and to 'resist' the manipulation of virtual memory at the individual level means then to refuse the digital environment as a highly commodified one, at the disposal of users to the point in which even mistakes and failure get constantly erased. This too can be favoured by design and be achieved by subverting the design of virtual worlds.

In *Fire Emblem: Three Houses* (Intelligent Systems & Koei Tecmo 2019), which can also be engaged with as an effective virtual site of memory,[138] users can replay at different times a same time span of approximately five years, but each time changing either the gender of the player character, the faction they are aligned with, the comrade-in-arms, or the secondary characters with which to become friend or to have romantic relationships. Moreover, to these intentional choices subsequent playthrough also exposes users to the unintentional risk of losing someone on the battlefield. All the different memories one may have of different subsequent playthroughs, e.g., having affairs with different characters and learning their hidden emotional backgrounds; losing a friend on the field; being a rival to characters that previously were friends or even lovers; eventually overlap. Remembering the virtual world of *Three Houses* means remembering falling in love with a character and at the same time facing and killing him in battle; marrying him and at the same time watching him die. Different personal pasts affect both the development of the characters and the overall game narrative, and conjoined they also produce different world histories: the more users explore the game, i.e., the more virtual memories they construct within it, the more complex and deep its worldbuilding becomes, including character motivations, beliefs, major narrative events, and overall impact on the gameworld. I notice that all this fluidification happens within, as well as is determined by, a simulation of 'a global capitalist order' (Dyer-Witheford & de Peuter 2009, 192) and of its "normalized subjectivities […] – consumer, commander, commanded […], criminal – not to mention the rapid shedding and swapping between identities that is such an important aptitude of [contemporary] workers […]" (ibid.), especially through the development, erasure, and overlapping of virtual memories. The mechanics of the game favour the construction of virtual memories in a highly economised, capitalistic fashion: the memories one builds within the game are, in other words, themselves manipulated by the very experience of growing, getting attached to, and

[138] See 7.2.3. The game also simulates a fictional past which is inhabited by characters with which players can have a romantic relationship, with the only prerequisite of choosing an avatar of the opposite gender (design choice that is already a non-neutral way of depicting the past as heteronormative). Each male character is 'a socially constructed and stereotyped image' (Schaufert 2018), which I describe by using words with which Hasegawa describes other similar 'otome' characters: "shown as romanticized, eroticized, and desirable through visual images and character voices. Visually, they are androgynous and handsome figures, which is a definitive element of girls' romance narratives and comics (Hasegawa 2013, 140). Each female character, on the other hand, is sexualised and stereotyped according to several anime/manga clichés and archetypes. If, on the one hand, the game undoubtedly allows users to fluidify the past, relativising it and getting emotionally attached to both victims and perpetrators, it also re-imagines it as heteronormative, inhabited by stereotypes that re-enact 'traditional gender roles' (idem, 137). This can raise a different nonvoluntary transformative consequence: by being exposed to such depictions, and by constructing virtual memories that mostly entail assertive girls and agent males, users can be 'transformed' (both epistemically and personally) by re-enacting a manipulated, heteronormative, stereotyped, virtual memory of the past. These manipulations are based upon either culturally mediated and constructed representations of gender and gender roles and clichés related to game culture, either community expectations and game mechanics.

engaging with characters and the gameworld through different and subsequent playthroughs. If one would like to counter this, and therefore choose 'using' virtual memory instead of being used by it, one may then choose to play the game only once, without dealing with subsequent playthroughs, therefore actively constructing virtual memory, and refusing for it to be constructed and manipulated by the technology in use. One can even opt for self-imposing a 'permadeath' condition, refusing to replay the game once the virtual subject is killed or dies.

Similarly, virtual worlds may 'use' virtual memory critically, to provide users with alternative modes of subjectivation that counter certain trajectories and apparatuses of power. Since memory, death, and past lives are almost always erased, fixed, or re-written in many gameworlds – since virtual technologies, as digital technologies in the broadest sense, are based on reversibility, "there is no room in them for fate or tragedy. It is always possible to go back and play until you reach a happy ending. For this reason, videogames allow players to fool death itself" (Frasca 2000, 175). Gameworlds can therefore 'counter' these abuses of virtual memory in many ways, and for many different reasons: by featuring permadeath conditions, and preventing players from continuing their game after experiencing virtual deaths (of virtual subjects they control or they take care of), digital games can "recuperate a degree of existential significance" (Gualeni & Vella 2020, 20) instead of trivialising (Harrer 2013) and commodifying death, therefore re-appropriating virtual death 'as a form of resistance to power' (Christiansen 2014, 11) – and at the same time refusing to re-read, re-write, and erase virtual memories of it. Strictly related to virtual counter-memory, utopian memory thinking is another way to use virtual memory as an act of freedom and attempting self-construction.

8.4 Utopian memory thinking.

It is almost automatic to connect utopian thinking with what has been observed so far about apparatus theory. Since utopia "refers to the future […]; to what is to come, the novum, the Not Yet" (Levinas 2005, 53), it almost automatically connects to the shift towards the new implied by the practices of freedom Foucault speaks about. At the same time, the concept of utopia is also linked with that of memory. The most referred to utopias, those which represent futures that are qualitatively different from the present, just like the hope for 'transcending' the power relations that Foucauldian thinkers share (see Frost 2019), involve "a process of transcending the past […] managing [it], both individually and

collectively" (idem, 54), i.e., a movement from a remembered past, or present, to a future projection. Even other kinds of utopias, i.e., remote utopias (of 'lost paradises'), and remembered utopias, deal with shared memory - being it in form of myths, in the form of mythological 'lost paradises', or of nostalgia in case of more recent, still remembered utopias (idem, 53-54). In other words, memory and forgetting are necessary components for any utopian project (idem, 54; see also Parr 2008, 34-54).

As observed by Galloway, we may interpret every virtual world as a utopian project, or as:

> "[T]he expression of utopian desire [...] simply because [they are] worlds in which certain laws are simulated and certain other laws are no longer simulated. The freedom to selectively simulate, then, operates in a [virtual world] as the most important scaffolding for utopia" (Galloway 2006, replaced 'video games' with 'virtual worlds').

Virtual worlds, observes Galloway, can therefore make accessible for users both the two understandings of 'utopia', as a program or as an impulse, i.e., systemic utopias (detailed, encompassing descriptions or projects) as well as allegories, reforms, and theories (see Jameson 2005, 2-7). On one hand, virtual worlds 'recreate real-world problems',[139] or as I explained in the previous paragraph depict and simulate the past in a way that re-enacts current power relations, ideologies, and cultural biases. On the other hand, they can allow users to reshape, partly or entirely, either present or future non-existent societies (see also Kłosiński 2018, 8) according to what they remember about past and present ones; or non-existent societies that they project towards the past.

Within 'utopian memory thinking', I will point out the epistemic and personal transformations that arise from enacting and using virtual memory to imagine new, different, possible futures, challenging the 'status quo' (see Schulzke 2014, 8) of present and past power relations. These transformations rely on the enactment of virtual memory, either at the individual or at the collective level: it is through virtual memory, in other words, that we can remake and rework the virtual apparatus, resisting the power relations it re-enacts. This can happen in two different ways, and either can be enacted by individual users or by

[139] See also Schulzke 2014, 6-7.

communities of users (e.g., in online multiplayer games), either by state of things that belong to the remote or recent past, or to the future.

When the virtual worlds are themselves 'utopian', I speak of a 'designed' utopian memory thinking, meaning that, by design, the virtual world itself elicits memory to simulate utopia. In other words, virtual worlds can be designed as apparatuses to resist certain power relations, reworking them, or unveiling their presence. Here it is worth raising doubts on the very possibility of providing users with the possibility of thinking 'outside' of the apparatus, from its inside. Is it possible to favour utopian memory thinking by design? The observations Galloway makes on *World of Warcraft* (Blizzard Entertainment 2004), intended as a utopian game, are significant in this sense:

> "[W]hat one sees is how two of the hitherto most useful tropes for communicating a life after or outside capitalism -- networks and play -- are slowly shifting from what Rumsfeld calls the unknown unknowns, which is what they were fifty or a hundred years ago, to the known unknowns, and perhaps simply to the known [...] What is clear is that the possibility of life after capitalism is often articulated today through a utilization of the very essence of capitalism [...]. And finally that virtual worlds are always in some basic way the expression of utopian desire, and in doing so they present the very impossibility of imagining utopia" (Galloway 2006).

I do not contend that virtual worlds cannot favour utopian memory thinking by design, as suggested by Galloway. It is worth taking into account what kind of utopian thinking these worlds favour, since they are produced within, and towards, certain relations of power; in other words, it is worth approaching seemingly 'utopian' virtual worlds carefully, and suspiciously. But instead of claiming that 'designed' utopian memory thinking is entirely impossible, I leave this possibility open: for example, certain virtual worlds may favour utopian memory thinking directed towards certain power relations and not others – e.g., *Dream Daddy: A Dad Dating Simulator* (Game Grumps 2017) subverts normative fatherhood through representations and dating simulator mechanics (see Schaufert 2018), therefore allowing us to imagine "a world without homophobia and social inequality, [...] an apolitical and ahistorical fantasy world" (idem), subverting (by design) the collective memory we have of fatherhood and heteronormativity.

Virtual worlds that are utopian by design work therefore as 'promising-machines', i.e., machines, or rather apparatuses, which promise us a future where power relations are different (see Bauchanan 1998, 22). On the other hand, each subversion of represented/simulated power relations within the virtual apparatus is to be intended as potentially favouring utopian memory thinking. Cases in which this subversion is more systematic and organised are more evidently inclined towards utopian thinking. As an example, I mention that provided by the urban planner Finn Williams, who tells about having played the city-builder game *Cities: Skylines* (Colossal Order 2015) to construct a 'post-growth' anticapitalistic city (Williams 2015). Virtual worlds react to our utopian desires in many ways, and most of the times what is not intended to be performed 'by design' within them is opposed or even blocked by the system. Nonetheless, it is in this very tension between the power systems that virtual worlds re-enact (as apparatuses) and the freedom of choice of users that utopian thinking comes into play:

> "*Cities: Skylines*' answer to whether we can achieve prosperity without growth is a resounding no. The game's boomtown model is of course incompatible with post-growth theory. But then I found other aspects of its code incompatible with my experience of the messy reality of working as an urban planner in London. The game doesn't account for the joys and challenges of local politics, heritage, or hand-to-hand negotiation with developers. So was the decline and fall of my city a failure of my ambition, the game, or society? I'd suggest that the goal of the game - rapid urban growth from scratch - isn't the goal we should have as city makers in the developed world. What we could really use is a game that helps us develop and test a compelling alternative" (ibid.).

Utopian memory thinking, in other words, is triggered by, within, and towards the virtual world in question, regardless of how much the system prevents users from performing certain actions: in both cases, users use the virtual apparatus (and the virtual memory that raise from their engagement with it) to 'resist' power relations, either external or internal to it.

8.5 Constructing, and being constructed by, virtual memory.

Throughout this chapter I have been problematising and discussing the potentials that 'fluidification' of the past virtual memory has. To that end, I have been introducing power re-

lations into the postphenomenological framework I have adopted throughout this thesis. Accordingly, I have been discussing how virtual memory can be blocked or manipulated, and therefore considered 'hegemonic', and how it can be 'used' by users to aim at self-construction and 'resist' processes of subjectivation by the virtual apparatuses in use. In all this, I have been shifting between (and at times merging) the different levels of virtual memory analysed so far (individual and collective), and correspondent approach chosen (hermeneutic and existential). As observed, virtual memory can transform and contributes towards constructing our multiplicitous selves, both for what concerns our understanding and imagining of the past and our existential projects towards our future – it is therefore necessary to acknowledge how we can use it to aim for self-construction, and when instead it gets manipulated by power relations, hegemonic world interpretations, and so on, therefore 'constructing' us as objects of power relations and imposing upon us some kinds of virtual memory and not others.

Hegemonic virtual memory on the one hand, and virtual counter-memory and utopian memory thinking on the other, are poles I have introduced for analytic purposes. The daily experience we have of virtual memory as (for example) digital game players is one of dynamic oscillation between hegemonic forms of virtual memory and free re-makings of it: within virtual worlds intended as 'virtual apparatuses' users are constantly engaged with a construction of their own virtual memory, which is neither entirely free nor entirely controlled or abused. As observed by Foucault, power relations must grant at least a minimum degree of freedom to work and to be re-worked (and therefore to transform and adapt): as we engage with virtual memory, at the same time we are constructed as subjects by it, and we can actively construct it. It is in the dynamic intertwining of constructing and being-constructed-by the virtual apparatuses that users of virtual worlds affect, and get affected by, the power relations they live within through memory. Once that has been observed, it is worth drawing the conclusions of what has been described, analysed, and discussed within this thesis.

9. Conclusion. Lining up the pieces.

This thesis has introduced and problematised the notion of virtual memory. As a concept, virtual memory is broad and multifaceted, and subsumes widely different (and at times irreconcilable) phenomena, each of which demands a specific theoretical and methodological approach. Throughout the previous chapters, I borrowed theoretical ideas from postphenomenology, memory studies, virtual worlds research, and especially game studies in an attempt to present a comprehensive account of our relation (both as individuals and as communities) with virtual forms of memory. In this concluding chapter, I will summarise my research and explain its theoretical and methodological contributions to the relevant scholarly fields.

In 9.1, I will summarise this thesis. Then, in 9.2, I will explain why the concept of virtual memory, as defined and problematised within this thesis, fills a theoretical gap within memory studies and virtual worlds research and at the same time functions as a conceptual bridge across the two fields. In 9.3, I will emphasise how virtual memory is relevant for game studies, as it is a useful lens – albeit hitherto under-theorised – capable of supplementing several approaches and theories within the field, with a specific emphasis on the three subfields of game culture, avatar studies (together with existential ludology) and historical game studies. Lastly, in 9.4, I will focus on further avenues to explore in this particular research sub-field.

9.1 A summary of this thesis.

Throughout the first two chapters of this dissertation, I introduced specific ways to understand virtual worlds and memory. To begin with, I have defined 'worlds' through a postphenomenological approach by exploring how human beings and the world that they inhabit co-constitute each other. I have then defined 'virtuality' as the intertwining between two dimensions: digitality and fictionality. This allowed me, by intersecting the chosen definition of world with that of virtuality, to address virtual worlds as experiences disclosed by technology, and that are, ontologically speaking, a combination of elements and phenomena that are real (digital) and non-real (fictional). Throughout the first chapter, I introduced several perspectives from which to analyse virtual worlds, which would become pivotal in my approach to virtual memory. Furthering the postphenomenological approach of the first section, I have suggested approaching them as technologies co-constituting and mediating human culture and existence. Subsequently, by introducing perspectives adapted

from philosophical hermeneutics, I suggested that we may understand them as artefacts that are amenable to interpretation (i.e., texts); and by addressing their fictional dimension (through the philosophy of fiction), I explored how we engage and interact with them. I later used this set of operational 'lenses' to approach different kinds of remembering within, through, and towards virtual worlds. In the last section of the first chapter, I explained why I decided to focus in my analysis on gameworlds as a specific subset of virtual worlds.

I therefore delved into memory studies and introduced memory as a discursive construct gathering widely different concepts and phenomena, ranging from organic remembering to collective rituals and represented pasts. I included all these different forms within the same umbrella-term, understanding both individual and collective forms of remembering as framed towards intersubjective, mediated, and shared frameworks of memory. By relying on the reflections on mediation, very much like cultural memory studies, I addressed memory technologies, especially digital ones, and described the implications of such contemporary memory technologies for the ways we remember, suggesting a shift.

In the third chapter, inspired by mediation theory, I provided a taxonomy of different ways to understand virtual worlds as memory technologies. I focused on how virtual experiences are remembered, on how we can remember within virtual worlds, as de-facto cyborgs, and on how we can use virtual worlds to remember the past (as hermeneutic technologies). I then explained how different types of memory can be found in virtual worlds with the goal of elucidating how they can be understood as remediating memory on every level.

From chapter 4 to 6, I inspected virtual worlds as either hermeneutic or embodied memory technologies. As hermeneutic memory technologies, virtual worlds can be understood as virtual sites of memory that represent and simulate both actual and fictional pasts. In order to speak of a virtual site of memory, it is necessary to describe it as arising from functionalisation and interpretation: failing to acknowledge this duality results in every virtual site of memory ceasing to exist as such. By introducing virtual sites of memory, I could address intertextual references, mnemonic iconisation, and the recirculation of clichés and *topoi*, thus including also historical virtual worlds and historical fictional worlds. I have used the framework provided by Ricoeur to address 'mimesis' and distinguish between various kinds of representations of the past that virtual worlds afford, as do non-virtual technologies. I then described how virtual worlds can be functionalised as virtual sites of

memory through simulative and procedural aspects, affording memory-making through metaphorical procedures, meta-memory simulations, simulating past-in-the-making, and providing users with specific past subjectivities to adopt.

As embodied memory technologies, virtual worlds allow us to enact virtual memory as we engage with them. Virtual memory is the dynamic interchange between fictional memories and actual memories, and we enact it as we adopt a subjective standpoint position within virtual worlds, i.e., a virtual subjectivity. Virtual memory is thus pivotal in our establishing of relations with our virtual selves, in our developing them, and especially in our developing of existential projects within virtual worlds. Therefore, virtual memory must be recognised as being involved both in how we engage with such worlds and in how we make sense of virtual experiences once our engagement with them is over. It is by enacting virtual memory that we can transform ourselves through virtual experiences. In chapter 7, I therefore explained the transformative potential of virtual memory when it is designed or enacted in certain ways, becoming a tool to 'fluidify' ourselves and to favour 'fluidification' within users. In addressing this, I have made reference to dramatherapy as an accompanying framework to grasp some of the implications of adopting a virtual subjectivity (and therefore virtual memories).

Lastly, I considered how virtual memory is disclosed within power relations. I showed how this happens through virtual memory-making, i.e., favoured by virtual sites of memory, and through virtual remembering, i.e., when we remember virtual events by adopting a subjective standpoint within virtual worlds. Since there is no human relation outside of power relations, no human technology is designed outside of them: power relations determine how virtual memory is designed, enacted, and received. In other words, virtual memory is often framed towards hegemonic worldviews, to reinforce and support certain interpretations of the world and to exclude, minimise, and marginalise others. Both individuals and communities are in this sense 'constructed' by socio-technical apparatuses, aimed at establishing and reinforcing current power relations. Virtual memory has a role in this construction, whether involving individuals or communities. On the other hand, virtual memory can also be used, by leveraging its future-orientation, to 'resist' such processes: I introduced virtual counter-memory and utopian memory thinking to point out how the fluidification of the past can also be used to aim for self-construction (although self-construction remains ideal and impossible).

Now that I have summarised the dissertation, I will specify its contributions to the fields in question.

9.2 Contributions: memory studies.

Although a large part of the contemporary debate within digital memory studies is concerned with how memory is transformed and affected by digital technologies, not much has been said about how many digital technologies, i.e., virtual worlds, not only digitise it but more importantly virtualise it. At its current stage of development, the field of memory studies lacks systematic accounts (and even definitions) of virtual forms of memory.
One of the primary contributions of this thesis has been to fill this scholarly gap. By establishing a dialogue between memory studies and virtual worlds research, I introduced virtual memory as a capacity that intertwines actual and fictional aspects, individual and collective remembering, and human and technological intentionality. In doing so, I built a theoretical and methodological framework that will prove useful to several subfields of memory studies.

I will summarise the contributions of the present thesis to memory studies by listing and explaining some topic sentences.

- *This thesis provides a highly theoretical and comprehensive account of virtual memory.*

To begin with, I turned to the multidisciplinarity of memory studies (Erll 2011a, 2-3; Dutceac Segesten & Wüstenberg 2016, 7) to provide a systematic study of virtual memory as a multifaceted set of phenomena, answering the need for integrated and more systematic approaches within the field (Roediger III & Wertsch 2008, 11). By providing a highly theoretical account, I attempted to counter the increasing specificity of memory studies. The field usually focuses on "particular national or regional site[s]" (Brown 2019, 113) and favours novel and unusual case studies rather than on universal and synthetic perspectives (idem, 116). Instead, by introducing terms and concepts, problematising them, and providing methodological frameworks for approaching such concepts, I built a comprehensive set of tools to approach virtual memory (taken as an umbrella term), capable of describing at times widely different phenomena of remembering within (and through) virtual worlds.

- *This thesis allows to look at virtual worlds (and their specificities) as memory technologies in an unprecedented way.*

By borrowing, extending, and adapting ideas from cultural memory studies, I have been including virtual worlds in the experiential frameworks that the subfield of cultural memory studies usually inspects, next to other popular media and memory-making practices (chapter 4), and I have provided an in-depth account of them as a distinct kind of memory technology. Previously, virtual worlds were analysed in the same way as digital technologies, i.e., as merely digitising remembering. The emphasis I have placed on defining virtual worlds as not only digital experiences but also fictional ones (see chapter 1) underpins my understanding of the ways in which they mediate and re-mediate memory as having two fundamental dimensions, intertwined: the fictional and the actual. By addressing this duality of virtual worlds, I could define virtual memory as the capacity enacted by human beings, as they remember adopting a subjective standpoint within virtual worlds (chapter 6).

- *This research sheds light on how the subjective engagement with virtual worlds is pivotal to considering collective and cultural forms of virtual memory.*

Whilst contemporary connective and digital memory studies focus on how both personal and collective memory-making are increasingly selected, produced, re-arranged, and customised by users who record, share, exclude, and even actively create memories to portray specific views of their lives, it is relatively surprising how they systematically underestimate fictionality. If we approach virtual worlds (e.g., social media) through the concept of virtual memory, we can observe how virtual remembering entails the enactment of hybrid actual/fictional subjects, i.e., virtual subjects. Considering the reflections provided throughout chapter 6, I suggest understanding and interpreting the selection, production, re-arrangement, and customisation of memory that virtual worlds make increasingly shareable not only as the result of the deliberation of actual subjects – but rather as resulting from the deliberation of actual subjects as already-influenced by technology (as described in chapters 1, 3, and 6), and already-engaging with the fictional world depicted. Online personas and avatars can therefore be understood not merely as technologies we use to empower/constrain our remembering, but more importantly as hybrid remembering subjects. The advantages of the postphenomenological account that I emphasise in the

first part of the thesis is crucial to the understanding of subjects, technologies, and remembering as never in themselves but rather as constantly intertwined in relations of co-constitution.

- *Through the concept of virtual memory, this thesis connects the hermeneutic, historical, and existential dimensions of virtual worlds.*

I approached virtual memory from two theoretical perspectives: that of philosophical hermeneutics and that of existential philosophy. In this way, I could frame my reflections on memory towards historiography and an existential consideration of digital media (see Lagerkvist 2019). The former allowed me to provide a framework for analysing how virtual worlds depict and simulate the past (chapter 5); the latter, on the other hand, allowed me to consider how virtualising the past can be transformative for ourselves (chapter 7). I then merged the two approaches and considered how virtual worlds, as both hermeneutic and existential memory technologies, are designed, produced, sold, used, interpreted, and re-enacted within power relations, as 'apparatuses' capable of manipulating, hegemonising, blocking, and more generally affect or constrain both collective and individual memories (chapter 8). This step has been fundamental, as it has allowed me to tackle the implicit ideological orientation of virtual worlds as virtual memory technologies, and thus to conclude my analysis by pointing out the increasing vulnerability and manipulability of virtual memory, implied by its fluidifying potential.

Memory studies and virtual worlds research are not the only two fields that this thesis contributes to. The field of game studies has been my most central and recurring reference point, providing corroboration for the ideas presented. The following sections will consist of an overview of the contributions of this thesis to game studies and related subfields.

9.3 Contributions: game studies.

As one of the most culturally relevant forms of the twenty-first century, digital games are the most widespread, observable, and accessible of virtual worlds. Additionally, they can be understood as a compendium of characteristics that in other virtual worlds may appear separately, or be less evident. For these reasons, I have decided to use them as my main examples and reference point. In so doing, not only have I approached them through the lenses of memory studies, philosophy of technology, and virtual worlds research, but I

have also established a dialogue between these and game studies, demonstrating the relationship between these research fields. Although some scholars already intertwined game studies and memory studies, or focused on how games can deal with memory (either as a subjective, organic phenomenon or as a cultural one, see, e.g., Alvarez Igarzábal 2019; Mukherjee 2011, 2017b), my account systematises a definition of virtual memory applicable to gameworlds and framing both individual and collective forms of remembering in relation to digital games, therefore providing valuable contributions to both fields. More specifically, this thesis contributes in particular to three subfields of game studies: video game culture, avatar studies, and historical game studies. I will deal with each of them, albeit briefly, in the following subsections.

9.3.1 Video game culture.

As noted by Adrienne Shaw, scholars interested in game culture usually look at digital games "with regard to knowledge acquisition, identity and performance, representation, and the relationship between media and audiences" (Shaw 2010, 404). When dealing with video game culture, scholars increasingly attempt to analyse games in terms of their intertwining with (as well as being framed towards) a constructed mainstream culture, rather than as a distinct and separate cultural form (idem). In my research, I contributed to such a theoretical and methodological effort by using memory studies to provide a comprehensive account of the relations between digital games and surrounding cultural forms.

- *The concept of 'virtual site of memory' allows us to understand and analyse representation and simulation within digital games as always inscribed within transmedia mnemonic frameworks.*

In section 1.5, I discussed virtual worlds (and digital games in particular) in relation to hermeneutics and defined them as texts. This allowed me to clarify how their meanings are always context-dependent (interpreted towards a historical horizon and a repertoire of previously existing texts) and reliant on a circle of subsequent prejudices and interpretations reinforcing pre-existing dispositions, based on the background of the interpreter. By working through the link between game studies and philosophical hermeneutics, in 4.5 I could introduce the concept of virtual sites of memory and emphasise its reliance on the interpretation of users, and therefore its context dependency. Adapting Nora's definition of 'sites of memory', I proposed interpreting as virtual sites of memory both digital games as

a whole and specific elements, representations, and procedures within them. After laying this basis, in chapter 5 I could provide a framework to identify, analyse, and problematise both digital games as virtual sites of memory, and virtual sites of memory within digital games.

- *The framework I introduced enables the understanding and analysing of digital games as cultural objectivations, and allows us to address the meaning and impact they can have on their interpretive/mnemonic communities in terms of the mnemonic function they fulfil.*

Whilst scholars agree on considering digital games as cultural objectivations (e.g., by acknowledging that "video games embody some of the most important aspects of contemporary society [and] are established cultural products" (Muriel & Crawford 2018, 3), not much has been said about the mnemonic role they fulfil for specific mnemonic communities. By approaching them through memory studies, I offered a comprehensive account of how both the representational and the procedural elements within digital games can be functionalised as tools to remember shared versions of a past that is actual, fictional, and virtual.

In particular, the framework emphasises how they cannot but be understood as intertwined with the material, social, and mental dimensions of memory culture; as disclosed by a dialectic involving both the production- and reception-side functionalisations; and as resulting from trajectories of memory across processes of pre-, con-, and re-figuration. Whilst contemporary cultural memory studies carefully addresses these dimensions and trajectories before dealing with any phenomenon of memory, game studies tend to underestimate such a background when considering, e.g., social and political practices associated with digital games, queer approaches to digital games, and ideological biases within the gaming discourse. The framework I have proposed here systematises and gathers, under the same methodological and terminological umbrella, phenomena that are typically addressed separately, which yet prove to be nested inside each other. For example, it can be used to approach player communities and game analysis as interacting poles of a twofold process of mnemonic functionalisation; or to grasp the relation between digital games and other media by comparing how the respective mnemonic communities refigure them as sites of memory.

Furthermore, my framework offers an easy route to navigate a complex network of interpretations and remembered meanings that lie at the basis of any mnemonic community, and can therefore be used to explore fandoms and video game subcultures as they arise from a multifaceted transmedia memory framework. Surprisingly, there is no approach in game studies that focuses on player communities through the conceptual lens of memory studies. This is especially surprising considering how memory studies generally focuses on analysing how remembering communities are constructed through the circulation and mediatisation of shared versions of a collective past. With the framework introduced in Chapter 5, I expect to contribute to filling this gap in game studies and to stimulate further research in the intersections between player communities, gaming subcultures, and the processes of remembering that lie at their foundation.

9.3.2 Avatar studies and existential ludology.

Although avatar studies focus on phenomena of embodiment, knowledge development, and the engagement with virtual subjectivities in digital games, the role of memory seems entirely absent from research within this subfield. Through section 3.2.1 and the sixth chapter of this thesis, I have demonstrated how virtual memory is nevertheless pivotal in any engagement with virtual subjectivity and selfhood. Memory is of the utmost importance within phenomenology and existential philosophy. It is the capacity through which, for example, we gather knowledge (semantic memory), internalise patterns of action, procedures, and trajectories within environments (procedural memory), build and sustain relatively stable versions of ourselves (episodic and autobiographical memory), and therefore develop existential projects. As such, it is also of the utmost importance when we deal with virtual versions of ourselves, both phenomenologically and existentially speaking.

- *From a phenomenological perspective, the thesis emphasises the pivotal role that virtual memory plays in our subjective engagement with digital games.*

From a phenomenological point of view, virtual memory lies at the basis of widely discussed concepts such as ‘involvement’ and ‘incorporation’ (in the playable figure and, by extension, in gameworlds in general). Every kind of involvement within gameworlds can be explained in terms of virtual memory. The very “absorption of a virtual environment into

consciousness" (Calleja 2011, 169), i.e., 'incorporation', happens through an intertwining between different forms of body memory and procedural memory, either actual (pressing buttons, learning how to engage with the game systems, knowing how to apply dispositions and patterns learned through previously experienced gameplays) or fictional (associating actual actions with fictional outcomes, fictionally interacting with the environment and narrative of the game, knowing and memorising spaces to explore, directions to follow, and shortcuts to opt for). In chapter 6, I explained and carefully addressed how these dimensions of virtual memory interact, and demonstrated how users can be embodied in a playable figure, as in gameworlds (as well as in virtual worlds in general), only by enacting virtual memory. By introducing this concept, this thesis therefore expressly contributes to avatar studies by emphasising the mnemonic dimension of being involved (and acting) within a gameworld.

In addition, by approaching involvement in digital games through the conceptual framework of memory, the thesis also implicitly re-interprets concepts such as 'alterbiography' ("the active construction of an ongoing story that develops through interaction with the game world's topography, inhabitants, objects, game rules and coded physics" (Calleja 2009)) by emphasising the interplay between different kinds of memories within the game.

- *From an existential perspective, the thesis emphasises the role that virtual memory plays in our developing virtual versions of ourselves.*

Aside from its role in involvement and embodiment, virtual memory is also pivotal in how we engage with virtual versions of ourselves, and therefore for any consideration of virtual subjects as hybrid actual-fictional subjects. In this sense, virtual memory provides a chance to understand how the experience of virtual worlds (from a phenomenological perspective) can affect human existence (from an existential one). In chapter 6, I explained how we cannot leave memory out when dealing with virtual subjectivity and selfhood, as well as with the intertwining between the two. This thesis contributes to current accounts of virtual subjectivity by emphasising the role memory plays in the adoption of a subjective standpoint within gameworlds: as we adopt a virtual subjectivity, we also adopt many memories that, to a degree, become our own. By distinguishing between actual and fictional memories we have of gameworlds, and by introducing virtual memory as the connection between the two, I could frame this newly introduced concept towards virtual subjectivity, by claiming that virtual memories merge actual and fictional aspects and are only remembered

when we step into a virtual subjectivity. Through the concept of 'narrative self' and with reference to existential philosophy, it is also possible to use virtual memory to bridge virtual subjectivity and selfhood: one of the most notable contributions of this thesis has been, therefore, to show how virtual memory connects virtual subjectivity and selfhood, and to emphasise the necessity of dealing with virtual memory within every account dealing with the existential implications of gameworlds and/or avatars.

- *The thesis points out how the transformative potentials of digital games rely on virtual memory.*

At the end of chapter 6, I provided a conceptualisation of selfhood as multiplicitous and in-between different phenomenological and existential domains, therefore explaining how actual, fictional, and virtual memories can affect our selves. In this way, through the concept of virtual memory, I have shown how it is possible to build a dialogue between avatar studies, existential ludology (the subfield dealing with the existential implications of games), and virtual existentialism. In chapter 7, with reference to the work of L. A. Paul, I pointed out the role that virtual memory plays in transforming us through virtual worlds and showed how, if virtual experiences can lead (both voluntary and unwilling) to existential transformation, it is due to virtual memory.

- *The thesis looks at the role that virtual memory plays in identification and self-fashioning within digital games.*

In chapter 7, I tackled two specific ways in which virtual memory can have transformative effects on players. Both are especially relevant in relation to avatar studies and deal with two major topics discussed by scholars interested in avatars: identification and self-fashioning. With regard to emotional memory, I have addressed how resonating user-avatar memories can aid identification, and therefore favour users' experimentation with a past perceived as an 'analogon' of their own. Moreover, I include virtual memory among the various characterisation elements that define virtual identities (with reference to the customisation of avatars and online personas), in view of the fact that the ability to design memory is an unprecedented tool that gameworlds provide to players.

- *Through virtual memory, this thesis also links the subjective engagement with digital games to the the socio-cultural, ideological mnemonic framework in which such games are produced, used, and received.*

Another contribution of this research, strictly connected to the ones listed so far, is having introduced the role that memory plays in processes of subjectivation through virtual worlds – a role that I could describe and problematise only by dealing with memory as connecting (past) virtual experiences to non-virtual ones and with reference to virtual subjectivity. I have dedicated sections 8.1 and 8.2 to this matter, where I considered how virtual worlds achieve hegemonic subjectivation by omitting, manipulating, or refashioning virtual memory. As a counterpoint, in the following sections, I described how virtual memory could also be used to aim for existential freedom, i.e., as a tool to 'remember otherwise' both our collective and personal pasts. In this way, I have also linked avatar studies with game culture, by showing how virtual memory may be used to reinforce or question current power relations.

9.3.3 Historical game studies.

As the scholarly field most interested in how (digital) games deal with the past, historical game studies has been a consistent reference point through the sections focused on virtual worlds as hermeneutic memory technologies, especially chapter 4. I have opened a dialogue between memory studies and historical game studies with the aim of acknowledging the mnemonic dimension of digital games and virtual worlds in general. In doing so, I observed how the historical potential of digital games is better understood if seen in relation to the concept of memory and related theoretical/methodological tools. By speaking of 'virtual sites of memory', therefore, I have been contributing to historical game studies in a number of ways.

To begin with, I have extended Adam Chapman's concept of 'systems for historying' (see 4.5) by approaching games as either hermeneutic or embodied memory technologies. By distinguishing these two interpretations of virtual worlds in general, and digital games in particular, I was able to clarify how historying can take different forms depending on how digital games are used as a memory technology. As hermeneutic memory technologies, they can be understood as 'virtual sites of memory' providing users with both representations and simulations of the past. As embodied memory technologies, they actively reme-

diate and constrain our memories (on both the individual level and the level of mnemonic communities). By introducing such a postphenomenological understanding of memory technologies, I could provide an account of historicity in games that is not only (as I will claim) broader than the one usually addressed by the field but also (and perhaps most importantly) a better understanding of how digital games can be understood as a distinct historical form.

- *The thesis contributes to the increasing shift towards the concept of memory that historical game studies has been undertaking in recent years.*

Many historical game scholars have been dealing, implicitly or explicitly, with memory and memory studies, to the point that the link between the two fields has increasingly become tacitly established. Since I have explored the intersections between memory and historical game studies elsewhere, especially in terms of the three prominent topics around which the two fields intersect and overlap (prosthetic memory, historical fantasy, and public history – see Caselli et al. forthcoming), I shall here limit myself to providing a concise summary of the matter.

Concepts such as 'prosthetic memory' (Landsberg 2004), 'media memory' (Neiger et al. 2011; Erll & Rigney 2009), and the study of how digital games play a significant role in cultural memory-making processes have enlarged historical game studies to include more open-ended and broader approaches and implications (see also Hammar 2019b; 2020). This thesis contributes to such an expansion and aims to both systematise it and provide a set of operational tools to 1) approach historical games as memory-making texts and 2) approach the mnemonic potential of non-historical games. With regard to historiography and historical theory, I have been exploring the link between history and hermeneutics by pointing out how every historical text depends on the hermeneutic horizon in which it is interpreted, and most importantly on the background and effort of its interpreters. In this way, I emphasised how historicity is not an inherent property of texts or artefacts but rather is attributable to the 'historical resonance' between the elements within them and any interpreter who is able to understand it. This theoretical move supports an understanding of memory and history as companions, thereby systematising the link between the two concepts and related approaches to the past in terms of complementarity rather than mutual exclusion.

- *I provided a framework for the analysis of virtual sites of memory that can be used to address historicity within gameworlds as resulting from users' interpretations and with reference to specific mnemonic communities of reference.*

Furthermore, by introducing the concept of 'virtual site of memory', I have provided both a theoretical and a methodological tool to analyse memory-making and historicity within digital games. In this sense, this thesis can be understood as a de-facto broadening of historical game studies to encompass new objects of study and new theories and methods. The concept of 'virtual sites of memory' allows us to approach not only the mnemonic dimension of digital games as a whole but also of representational elements, implied procedures, and emergent practices within them. This makes it possible to bring together previously unconnected phenomena such as collective mourning within online multiplayer games, meta-memory narratives, metaphorical mnemonic procedures, mnemonic iconisation and re-mediation – all alongside those areas that are usually the focus of historical game studies: nominally historical narratives, game mechanics, and representations. A contribution of this thesis is therefore to have gathered a broad set of phenomena that can now be analysed and addressed through the same theoretical/methodological set of lenses – demonstrated in my use of this set of lenses to approach two already established fields of research: historical game and memory studies.

- *The thesis emphasises the co-dependence and co-constitution of the subjective and collective levels of virtual memory from both a theoretical and methodological perspective.*

By emphasising the intertwining and co-dependence of collective and individual dimensions of remembering, I have provided historical game studies with a set of previously unaddressed concepts that may be useful in dealing with games as a distinct historical form. By problematising subjectivation through virtual memory, and especially by approaching the matter through the concept of 'prosthetic memory', I contribute to the corpus of research dealing with hegemonic histories and digital games; by introducing 'virtual countermemory', I was moreover able to show how virtual memory-making can be used in dialogue with (and especially against) established collective, socio-political forms of remembering.

Now that I have summarised the thesis and emphasised its contributions to the relevant scholarly fields, I will dedicate the last sections of this conclusion to explaining the further avenues of this research.

9.4 Future work: avenues for further research.

This dissertation consisted of a definitional and analytical attempt to delve into virtual memory. I decided to approach virtual memory from the perspective of hermeneutics and existentialism to link memory studies, virtual worlds research, and virtual existentialism, and to deal with how virtual worlds can represent and simulate the past, as well as mediate our experience of it. These two perspectives jointly allowed me to grasp the complexity of most phenomena of virtual memory; however, other narrower perspectives have been excluded due to space constraints, and many other theoretical and methodological perspectives could be adopted. Being a complex, broad, and dynamic concept, virtual memory is involved in many different engagements with virtual worlds. It would therefore be presumptuous and misleading for me to contend that I have observed and analysed every existing kind of virtual memory. Throughout the thesis, I have been referencing some approaches I have excluded for brevity and conciseness - in this section I will provide an overview of the avenues for further research that I hope my work will aid.

9.4.1 Connective memory.

By emphasisinig how remembering is constrained, if not entirely constructed, by technological frameworks of production, use, and reception, the concept of connective memory is pivotal to understanding how we remember through algorithms and digital social interactions. As I already mentioned, connective memory is at play in many virtual worlds, which invite their users to share their experiences and to actively produce memories, leaving traces, messages, pictures, that will eventually be shared through algorithms with other users, as well as through the social components of many platforms in which virtual worlds are sold, purchased, and played – for example the many online stores in which virtual world users share the achievements they unlock, the experiences they have had, and so on and so forth. An in-depth analysis of how connective memory is enacted within virtual worlds is a necessary step forward in considering them as autonomous memory technologies. This would also mean considering them as alterity memory technologies – I have

been putting this understanding in the background of my observations but, of course, a deeper problematisation of alterity memory technologies would be useful.

9.4.2 Virtual worlds as mnemonic artefacts and material culture theory.

In chapter 7.3, I discussed virtual sites of memory as cultural objectivations that represent or simulate the past virtually. I deliberately excluded with the question of how virtual worlds, understood as mnemonic artefacts, take part in a broader process of narrating the past once it has been preserved and functionalised as sites of memory within specific experiential and institutional frameworks. In particular, I focused on virtual sites of memory from a theoretical perspective, but I did not tackle how the mnemonic functionalisation of virtual worlds can be enacted, aid, and conveyed within specific contexts – virtual worlds can, for example, be introduced in education, with the educator favouring mnemonic functionalisation, as well as being preserved and exhibited within museums as mnemonic artefacts – in this case, the museal framework may be directed towards mnemonic functionalisation by the audience.

A study of these and further specific kinds of mnemonic functionalisation may be fruitful for addressing the role of virtual worlds in education – a path already followed by many historical game scholars, and also, relatedly, for exploring the phenomena of musealisation, institutionalisation, and the role of communities of virtual world users in the preservation of the virtual heritage across generations. It could also provide a lens for the examination of nostalgia, the retro-trend, and vernacular memories. I took a first step in this latter direction together with Krista Bonello Rutter Giappone, in an article based on interviews we conducted with two curators of digital gaming archives about vernacular memory, musealisation, and the preservation of the gaming heritage (see Bonello Rutter Giappone & Caselli 2021).

9.4.3 Virtual body memory and non-embodied virtual subjectivities.

In mapping different kinds of individual memory in chapter 4, I considered implicit memory and body memory. This eventually allowed me to approach such concepts as collective memory, and to describe how virtual sites of memory could be functionalised according to metaphorical procedural memory in 7.2-7.2.1. I also mentioned body memory in 6.3, when mapping different kinds of virtual memory. Notwithstanding this, the role of body and embodiment could be explored further. More precisely, different kinds of virtual

body memory have to be addressed in their specificity: virtual forms of spatial, intercorporeal, incorporative, and situational memory are quite evidently at play within virtual worlds, and by addressing them one may achieve meaningful insights for current research on incorporation, embodiment, and contributing more broadly to existential and phenomenological approaches to virtual worlds. Another future development could entail a study to deepen our understanding of virtual memory vested in non-embodied virtual subjectivities (mentioned in chapter 6.2, in the context of different kinds of virtual subjectivities). I chose to focus here on embodied ones for clarity and operational purposes, but non-embodied virtual subjectivities may also provide fruitful insights into virtual memory in general.

9.4.4 Current limitations, further developments.

As a first definitional attempt and a theoretical effort to define virtual memory, this thesis does not demonstrate systematic applications tailored to specific fields of enquiry. Specific case studies must be approached through the frameworks and concepts provided: specific virtual worlds, mnemonic communities, and phenomena identified as falling under the umbrella of virtual memory will provide not only a fruitful field application of what has been observed so far, but also a necessary follow-up to this study. My article [title] (Caselli & Toniolo 2021) took the first step in this direction by analysing the pseudohistorical mobile game *Azur Lane* (Shanghai Manjuu & Xiamen Yongshi 2017). Although I will further this pursuit in the future, I hope this dissertation will lay the basis for further such inspections of different kinds of virtual memory.

On this note, it is also worth pointing out that the ways in which the concepts introduced here can be implemented within game studies warrants further attention.
Among the relevant fields identified above, game studies has been central inasmuch as it has allowed me to approach digital games as particular instances of virtual worlds. Although game studies has been one of its theoretical and methodological pillars, this thesis is not exclusively a game studies one. Nonetheless, I indicated and established original connections and shared frameworks between game studies and other fields (memory studies and continental philosophy, among others) that will facilitate future interdisciplinary work. Furthermore, as I have demonstrated throughout the dissertation, all the ideas I introduced and discussed can be applied to digital games, and can therefore also fruitfully dialogue with game studies. Therefore, aside from what was observed in 9.2, many other

perspectives could be opened up by the interdisciplinary dialogue between memory studies and game studies. This research is but a first step in this direction.

At the same time, many concepts related to virtual memory also deserve further exploration. Nostalgia, forgetting, and trauma are broad categories usually inspected within memory studies, since they are intertwined with memory to the point where each of them becomes mutually defining. They featured only occasionally within this thesis, but I could not herein accord them the attention they deserve. Nonetheless, just as with virtual memory, concepts such as virtual nostalgia or nostalgia for virtual worlds or virtual pasts, virtual trauma, and virtual forgetting remain understudied and would certainly benefit from additional (and interdisciplinary) research efforts.

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