ABSTRACT

Abstract

Research on digital immortality has identified thanatechnologies which facilitate the endurance of the presence of the deceased in the world of the living. One of these, the Virtual Deceased Individual (VDI), is the focus of the thesis. Due to the current limitations of digital technologies in generating a software that convincingly simulates being a deceased person, adopting a Futures Studies approach to the examination of the VDI and human interaction with it is helpful in understanding how future digital technologies might transform how human beings relate to mortality and mourn the deaths of others. Thirteen long interviews with participants of diverse ages and cultural backgrounds were conducted, and Causal Layered Analysis was used to construct four different images of the future (Ambivalence, Restoration, Concealment and Autonomy) which contrasted processes of relating to death and going through mourning according to the characteristics of the social practices focused on Human-VDI interaction. The images of the future reveal that the meanings assigned to the VDI and the role it plays in death acceptance and mourning processes are shaped by discourses on mortality and immortality, as well as by underlying metaphors of personhood. This suggests that for death acceptance and successful mourning to occur, social practices of Human-VDI interaction should encourage acknowledgement of loss.

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THE FUTURES OF SOCIAL PRACTICES OF INTERACTION BETWEEN HUMANS AND VIRTUAL DECEASED INDIVIDUALS

A Causal Layered Analysis of four ideal types

Master's Thesis
in Futures Studies

Author(s):
Joshua Hurtado Hurtado

Supervisor(s):
PhD. Matti Minkkinen

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Turku, Finland

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It is my belief that a thesis, which emerges from a research project, is not the result of only one person, but it is the culmination of work facilitated by different social actors. The author is the main intellectual force behind the thesis and the research project, but he or she works in a network of social relations that contributes to his/her intellectual growth and the opportunities they encounter over the course of the project and throughout their intellectual life. I consider myself as being extremely lucky for having encountered many valuable persons in my life, and I am in a privileged position to pursue this passion project as part of a Master's degree. For space limitations, I cannot thank all of them, but I want to let them know I appreciate them having opened me the doors to many opportunities.

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1 INTRODUCTION

1.1 Background

The advent of digital technologies and the amount of data produced and shared through and within digital media has shaped already existing social practices and led to the emergence of new social phenomena with dynamics of their own. This includes those practices and phenomena concerning the ways humans deal with death and mourn the deaths of others. Thanatechnologies (Sofka, 1997; Sofka et al., 2012; Sofka et al., 2017) – the various technological mechanisms brought about by digitalisation and their use in situations involving mortality, loss, grief and tragedy – have garnered interest from academia (Swan and Howard, 2012; Bassett, 2015; Meese et al., 2015; Ahmad, 2016; Bassett, 2018; Giaxoglou and Döveling, 2018), businesses (Newton, 2016; Eter9, 2017; Lifenaut, 2017; Eternime, 2019), single persons (Vlahos, 2017; Wray, 2020) and social groups such as gaming communities (Bainbridge, 2013) during the last decade for their potential within the topic of digital immortality: an attempted transcendence of death enabled by digitalisation, data producing practices and the internet.

The idea of endurance after physical death by digital means raises interesting technical, ethical questions, political, economic, sociological and cultural questions (Sherlock, 2013; Jacobsen, 2017a; Öhman and Floridi, 2017; Savin-Baden et al., 2017), and thus demands an interdisciplinary exploration not only of the role digital technologies play in how human beings come to terms with death and loss, but also of the foundational forces that provide meaning to the visible and tangible social dynamics. Currently, thanatechnologies are more concerned with giving the living access to the digital traces of the dead than with offering personally and culturally appropriate ways of maintaining a symbolic relationship with them. In cases where interactive forms of thanatechnologies are adopted, they lack sophisticated algorithms which both respond to their users' prompts and incorporate the individual's beliefs and value systems concerning death into their design (Carvalho Pereira and Maciel, 2013; Newton, 2016; Vlahos, 2017).

The limitations of current digital technologies in creating compelling pathways for digital immortality, as well as the conflicting opinions on the social use and impact of thanatechnologies (at least in mainstream discourse), present challenges in examining the magnitude of the effects that specific thanatechnologies can have for the acceptance of death and for mourning. For this reason, an approach that offers the interdisciplinary study

of social phenomena and is able to outline with greater detail the potential of thanatechnologies in their embeddedness in social practices is required.

1.2 Research problem and scope of the thesis

The field of Futures Studies, with its natural inclination of looking at the future, can bridge this gap by granting access to detail about the effect and integration of thanatechnologies in social life that is non-existent in the present, but which could become a feature of the future. This thesis adopts a Futures Studies approach to critically examine the different futures of human interaction with the Virtual Deceased Individual (VDI), a technological artifact that aims to replicate a deceased individual's mannerisms, speech patterns and personality traits as expressed in interaction with the living, in the time horizon of 2040. The VDI, which represents an instance of thanatechnology, would have all the necessary information associated to the original individual that would allow it to faithfully imitate him or her in an interactive situation, and when prompted by its intended human interlocutor, would answer in a way that mimics the way the original individual would have answered. This critical exploration of the futures is done firstly by constructing four contrasting ideal types of images of the future that describe the social practices focused on Human-VDI interaction, and then by engaging in a layered analysis of each ideal type, moving from the superficial levels of reality to its foundations in the form of a Causal Layered Analysis (CLA) (Inayatullah, 1998).

The scope of this thesis is mostly exploratory, insofar as it does not attempt to provide a causal path for how different futures might emerge and does not attempt to identify causal links between the elements explored. Although the scope of the thesis is mostly exploratory, first identifying what the different ideal types might be and then describing how humans relate to death and go through mourning by engaging (or rejecting engagement) with the VDI, the argument is made in this thesis that, under certain circumstances, an encounter between a person and a VDI is an instance of social interaction and should be examined based on insights from microsociology. Whether this is the case or not would depend both on the degree of sophistication of the technology involved and on the meaning attributed to the VDI.

While being exploratory, the thesis also adopts a critical stance, both in how social reality is approached and in the characterisation of the ideal types of the images of the future. Against an understanding of reality as being constituted only by its visible and quantifiable elements, a fundamental assumption in this thesis is that social phenomena

and practices are structured by and derive their meaning from deeper truths that are only accessible by qualitative methods which involve problematisation and deconstruction. This aspect is visible in the theoretical stance adopted, one of Critical Futures Studies, and in the Futures Research method of CLA. Similarly, although not explicitly phrased in normative terms, the ideal types of images of the future portray both restrictive and emancipatory approaches to how they orient subjects in facing death and in mourning the deaths of others. This is done by describing how the social practices in an ideal type of the images of the future facilitate or hinder subjects' ability to confront mortality and undergo mourning.

This thesis belongs to the research paradigm of social constructionism, which focuses on how social processes are central to the creation of meaning. Therefore, the scope of this thesis does not aim to forecast and guide the creation of advanced forms of the VDI in their technological dimension, nor does it discuss its potential for business models in the digital economy, among other potential research interests concerning the VDI. By implication, issues related to future-oriented technology analysis, technology roadmaps and strategic foresight are beyond the scope of this thesis. Instead, the aim is to look for greater insight into how it could become integrated into social practices and the role it performs in dealing with death and mourning. Social constructionism, as argued by Ted Fuller and Krista Loogma (2009), is an appropriate research paradigm for Futures Studies because foresight is a social process that intends to construct meaning. Similarly, social constructionism is compatible with the CLA method and the assumption of deeper, intangible truths, with discourse – a phenomenon that structures social reality – featuring prominently in this thesis and in the CLA method itself.

Situating the thesis within a social constructionist paradigm and adopting an exploratory and critical stance has important implications for this research project. Against an understanding of social practices of Human-VDI interaction as being comprehensible only by the description of their future unfolding and analysis thereof, the paradigmatic perspective demands a conceptualisation of the social phenomenon by detailing its theoretical foundations. Generating a conceptual outline of the object of study allows the direct microsocial phenomenon to be located within a macrosocial field where other social practices, discourses and cultural metaphors influence the meaning subjects imbue to their envisioned interaction with a VDI. As a result, a critical examination of the phenomenon can be conducted, as the researcher is aware not only of the direct meaning subjects assign to potentially encountering a VDI in 2040, but also of its significance for the broader

social context within which these encounters between people and VDIs take place. For this reason, it can be stated that theory in this thesis is used both to position the research project and to develop new theory for conducting a more sophisticated study.

1.3   Research questions

The research problem of this thesis is divided into three research questions, which are outlined below:

1. **How can a social practice that focuses on Human-VDI interaction be conceptualised?**

This first research question focuses on developing a conceptual framework that allows for a detailed description of how a VDI can be integrated into social life. This requires first a review process of the different fields of research that are relevant for the research problem, and then arriving at a sensitising scheme that situates the specific microsocial phenomenon of Human-VDI interaction within a broader social context that is envisioned as occurring inside an image of the future. By doing so, not only can the images of the future acquire a greater level of detail, but the theoretical underpinnings of the phenomenon can be recognised in the empirical section of the thesis even when they are not explicitly referenced.

2. **What ideal types of images of the future can be constructed concerning the interaction between VDIs and living persons in 2040 based on the perspective of potential human interlocutors?**

This second research question is specifically related to the futures of the social practices of the interaction between the VDIs and living persons. It aims to uncover different ideal types, based on common elements that emerge in the interviews, of images of the future of the research problem. The ideal types have categories that allow for meaningful contrasts to be drawn between among them. It is important to emphasise that while there is no attempt to construct universal ideal types that cover the spectrum of social practices where the VDI is a feature of the social world, the ideal types in this thesis can be considered *diverse*, as people of different nationalities, ages and educational and professional backgrounds were interviewed so that the ideal types could portray different ways of dealing with issues of death and mourning in a societal context where Human-VDI is, to greater or lesser extent, an feature of social life.

3. **What can the images of the future concerning Human-VDI interaction reveal about the way social practices involving the VDI affect how humans relate to mortality and experience mourning?**

This research question concerns the way the envisioned social practices of Human-VDI interaction might shape the way subjects confront matters related to mortality and to the loss of others. A core assumption of this question is that by examining the perspectives on death and technology, emotions, material components, expected degree of integration of the VDI into everyday life, and the meanings associated to Human-VDI interaction that interviewees express, not only are their personal stances on the topic revealed, but deeper meaning-creating forces become identifiable. As a result, their influence on the manner social practices of Human-VDI interaction emerge and unfold can be critically explored.

1.4   Statement of originality and relevance

This thesis introduces the concept of the Virtual Deceased Individual, a specific form of thanatechnology which has been discussed within the digital immortality discourse, but which has lacked a specific name until now. Similarly, the conceptualisation of social practices focused on Human-VDI interaction represents a first step in outlining what the different elements involved are and how they can be studied, as anecdotal evidence, technocentric approaches and abstract discussions of this phenomenon have been around for years but research into its sociotechnical dimension has lacked systematicity and tangibility.[1] Additionally, the interdisciplinary approach of this thesis grants it a relevance to the different fields that are involved in conceptualising and critically examining the ideal types of the futures focused on the social practices of Human-VDI interaction. Although it offers interesting insights for these fields, it generates particularly meaningful contributions to the field of Futures Studies and to the field of Death Studies.

Concerning sociology of technology and sociotechnical change, this thesis offers insights on the discourses and foundational metaphors that encourage some forms of thanatechnology to be developed. What the interviewees reveal about the expectations regarding their interaction with the VDI and how they envision such a technology may introduce some questions regarding how this and other similar technologies are developed now and

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[1]   This is referring specifically to social practices that involve both human beings and current forms of the VDI. Systematic research of other instances of thanatechnology and their use is extensive.

in the coming decades. Despite not being the main focus, the subject matter of the thesis and the resulting images of the future might prompt discussion on the appropriate paradigmatic perspectives to adopt in the development of thanatechnologies, whether they are more functionality-driven (i.e. problem-solving as their primary concern) or more care-driven (i.e. to ensure that the users feel comfortable in their presence and ethical concerns have been meticulously discussed before their widespread development and use).

Conceptualising Human-VDI interaction as social interaction puts forward a perhaps controversial, but nonetheless interesting notion: the idea that some forms of technology, despite lacking self-awareness, can be designed to behave in a convincingly humanlike manner and consequently provide meaningful encounters that can be considered instances of social interaction. Undoubtedly, there might be some contention in this regard, but an exploration of how encounters between people and VDIs can become social interactions is offered as part of the interdisciplinary literature review. The argument is made that, if both technological features and context are appropriate, Human-VDI interaction can indeed be regarded as social interaction and thus become integrated into broader social practices that deal with issues of death and mourning.

For Futures Studies, this thesis constitutes one of the first detailed research projects that incorporates death and mourning as main themes. Despite the recognition that death and tragedy are important topics to be addressed when thinking about the future (Masini, 2006, p. 1167), work in the field that focuses on such subject matters is rare (McDermott, 1987; El-Bizri, 2019). While there is a brief theoretical overview of how death and mourning can be considered relevant themes to be explored within Futures Studies, the substantive contribution resides in examining them from an interdisciplinary perspective and in raising the question of how future developments in technology and social practices might guide human beings towards adopting specific stances regarding mortality and the loss of others. Similarly, the thesis considers the influence of current viewpoints about technology, death and personhood on envisioning specific kinds of futures with the VDI. As elaborated in the rest of this thesis, death and mourning have a constitutive role for social and cultural life, and some possible future social practices, in this case those centred on Human-VDI interaction, might make their role in everyday rituals and activities more visible than it currently is.

For Death Studies, this research offers novel insights about how a specific thanatechnology, the VDI, does not necessarily have only one main effect, but its influence and

relevance for the mourning process is dependent on how it is integrated into social practices. Specifically, it asks to consider some conditions under which the VDI could facilitate or hinder subjects' acknowledgement of the implications of a death event and either guide people towards successful mourning or complicate their process. The Critical Futures Studies approach is also important, as it reveals that deeper assumptions on death and personhood are constitutive of more visible social practices. Moreover, this approach highlights the significance of thinking about death and mourning as events awaiting in the future, for their consideration might empower subjects in the present by increasing their awareness of their own position regarding these themes and their manifestation in social practices. For this reason, the research subject of this thesis can be argued to foster a pedagogy of death – that is, to reacquaint people to issues of mortality and mourning and help them navigate them, as modern societies often insulate experiences of mortality and relegate confrontations with loss to the background instead of enabling thoughtful contemplation of these themes (Affifi and Christie, 2019).

Because death and mourning are fundamental themes of human life, the subject matter of this thesis also offers grounds to consider potential societal implications of social practices that involve the VDI, should they come to pass. For example, would integrating the VDI into social and cultural life give rise to societies where the dead continue to have agency in the social world and affect the unfolding of events in the lives of others? If so, such integration could drive the emergence of a new societal paradigm where death again becomes familiar to the living, resulting in novel institutions and practices that locate death at the centre of everyday life instead of being relegated to an issue to be managed in the background. Additionally, incorporating the VDI into social practices might foster the recognition – either by interacting with it or by avoiding it altogether – of the complexity of human relationships, revealing the way fellow human beings are important not only as individuals themselves but are also deeply integrated into the sense of self of their loved ones, constituting material, emotional and identificatory supports that are not always acknowledged.

Of course, thinking of social practices of Human-VDI interaction in terms of the future also carries an important ethical implication: having knowledge about the possible futures involves assuming the responsibility of orienting human action towards human welfare. The diverse images of the future in this thesis display both emancipatory and restrictive attributes of the social practices of Human-VDI interaction. This thesis, therefore, encourages critical thought on the collective duty to ensure that these practices foster

human freedom and agency so that the VDI does not become a confining feature of future societies that complicates death acceptance and mourning.

1.5   Structure of the thesis

The thesis is composed of several sections, but broadly speaking can be separated into two parts. The first one, comprising chapters 2 to 4, is a predominantly theoretical one, focusing on the theoretical elements for an interdisciplinary literature review and for outlining the conceptualisation of the phenomenon being studied. Chapter 2 covers the Futures Studies literature and establishes how death and mourning are relevant research topics for the field. Chapter 3 presents an interdisciplinary literature review of Death Studies, Interaction Studies and Social practice theory. This interdisciplinary literature review outlines the theoretical concepts and insights which reappear, to greater or lesser extent, in the empirical part; regardless of their explicit appearance in the empirical section, it is important to review them first and keep them in mind, as the complexity of the phenomenon – the social practices of Human-VDI interaction in the time horizon of 2040 – can be better grasped by having knowledge of the constitutive force of death for social and cultural life, comprehending mourning, having a clear idea of the phenomenon of social interaction and understanding the interplay between social forces and technology for social practices. Chapter 3 concludes by laying out a sensitising scheme that depicts how a social practice focused on Human-VDI interaction would be performed. Chapter 4 is a mostly descriptive chapter, which defines the VDI and situates it within the digital immortality discourse, delineates its technical features and its process of creation, and gives an account of emergent practices of Human-VDI interaction.

The second part of the thesis is a theoretically informed analysis of the empirical material and comprises chapters 5 to 7. Chapter 5 describes the research material, outlines the methodology, and identifies the methodological limitations of the thesis. Chapter 6 presents the four ideal types – Ambivalence, Restoration, Concealment and Autonomy – of the images of the future that depict social practices of Human-VDI interaction in 2040. First, it outlines the different ideal types in relation to one another, and then each ideal type is examined in its general features and by resorting to the CLA method. Chapter 7 concludes the thesis by characterising the ideal types in relation to their restrictive or emancipatory potential and by situating the thesis as a potential contribution to the pedagogy of death and to the integration of death and mourning as themes for Futures Research.

2 FUTURES STUDIES FOR THE STUDY OF FUTURE PRACTICES OF DEATH AND MOURNING

The Futures Studies field offers several theoretical insights and methodological approaches that open new possibilities for the study of human ways of relating to death and to mourning, as looking into the future allows to explore developments and social practices that are either absent (in a tangible, material sense) from the present or not visible enough to be considered as part of the present. Artifacts such as the VDI might be much more developed in the future social world of 2040, which means that their integration into social dynamics might increase. Thinking about the future, and adopting a critical perspective on the future, is therefore suitable to bring texture and depth to the social phenomena that one might encounter, included the integration of new technologies for dealing with mortality and loss.

2.1 Ontology of the images of the future

The scope of the research problem and its position within Futures Studies requires a brief overview of what images of the future are and their characterisation as a human creation. This, in turn, facilitates understanding why death and mourning, and how they are addressed by interacting with a VDI and integrating it into social dynamics, are appropriate themes to be studied in their integration into images of the future.

A central concept of the Futures Studies field is that of the image of the future, which according to Wendell Bell, enables research to be carried out (Bell, 1997, p. 81-82). Beyond being a concept that allows for the systematicity of research, images of the future can also be considered phenomena that arise from the cognitive, imaginative and creative capacities of the human being. The specific nature of these phenomena and their content, however, is still subject of debate within the field. Discussion of the ontological nature of images of the future has seen increased interest in the 21st century (Adam and Groves, 2007; Walton, 2008; Malaska and Masini, 2009; Poli, 2011; Staley, 2017), which makes reviewing different conceptualisations of them necessary to facilitate the adoption of a working definition for this thesis.

Bertrand de Jouvenel (1967) presented the dichotomy of *facta* and *futura*, the former being events from which data can be collected and be thought of as facts, and the latter being cognitive constructs about events that are still to happen, if they happen at all, and that take the form of ideas, expectations, hopes and fears. A problem with de Jouvenel's

distinction, in Poli's (2011) view, is that by making a stark distinction between facts and cognitive constructs, he does not completely recognise that *futura* can also have some basis in reality, albeit one that does not possess the same degree of visibility and tangibility as what is understood as "facts".

In contrast, Frederik Polak's seminal work, *The image of the future* (1973), acknowledges that the historical process occurs by the interaction between completed and non-completed time. Hence, an image of the future, which resides in the latter temporal dimension, does have a factual foundation, for the move towards an image of the future requires completed time for it to be realised. For an image of the future to eventually become real, in Polak's view, it would require the completion of the preceding logically coherent and material events, which are guided in a specific direction by the allure of an image. For this reason, Polak states, "Social change will be viewed as a push-pull process in which society is at once pulled forward by its own magnetic images of an idealised future and pushed from behind by its realised past" (Polak, 1973, p. 1). The scope of images of the future for Polak is societal, which means that culture plays a central role in the creation and magnetic pull of the images. A limitation in Polak's characterisation of the image of the future, however, arises from his propensity to treat this cultural force as something abstract that is then assimilated and processed by societies, instead of being routinely performed in everyday social practices. This raises the question of how the images of the future originally emerged in Polak's account, wherein they operate more as already existing imaginaries which pull societies in their direction. The consequence of this limitation is that Polak's description of images of the future does not settle on any specific ontological characterisation: at points they seem to be culturally shared abstractions, while at others they seem to be a feature of the interconnectedness of time. Of course, it is possible for both readings to work within Polak's conceptualisation, but precisely how is left unclear.

Wendell Bell and James A. Mau (1971) also support the idea that the future goes beyond mere cognitive constructs. They identify two related aspects in which the future is real. First, due to the fact that the foundations for the future are laid out in the present, the future is real insofar as human action can bring it about, something which echoes Polak's view on the interaction between completed and non-completed time. Second, images of the future are real as abstract phenomena, existing inter-temporally, and they guide human behaviour and social action by presenting insights on the alternative futures

that can be realised by present action. Hence, they state: "there are no future facts. However real our conceptions of it, our actions that will produce it, and the certainty of its coming, the future is open. The present possibilities for the future are real" (Bell and Mau, 1971, p. 10). A crucial implication of this conceptualisation of the future and its images is that it grants agency to the social actors in a given setting. As a result, images of the future are not pure idealisations nor are they only "pulling" societies towards them, but they require social action to be realised.

Bell later introduced the notion of *dispositions* to give the possible futures their real foundations (1997, p. 76). Dispositions can be understood as the ontological attributes of an image of the future that can be activated under specific circumstances, usually by social action. In other words, dispositions are the properties that can make the potential inherent in an image of the future to eventually become actual.[2] For Roberto Poli (2011), "the dispositions most relevant to futures studies are those connected to the capacity of individuals, groups and entire societies to change, to become different" (p. 70). In Poli's conceptualisation, dispositions are the simplest instance of what he calls *latents*, the constitutive components of reality that cannot be grasped only by looking at its surface. Poli emphasises the existence of latents because he proposes a view of the present as structured by levels of reality, something which he argues the future shares with the present (Poli, 2011, p. 68). Of relevance here is that both dispositions and latents signal underlying, invisible structures at work in images of the future (and, more generally, in reality) which shape the unfolding of events so that some futures become more or less likely, depending on their influence on the social actors in a given setting. This raises the question of how images of the future might influence human action and, conversely, how the creation of meaning influences the realisation of images of the future.

Anita Rubin (2013) argues that for human beings to be able to function in the world, mental models need to be continuously constructed based on assumptions and assessments on what the future will be like, a process which is partly intentional but also involves some subconscious elements (p. 540). Her characterisation of images of the future

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[2]   It is important to stress that Bell's original conceptualisation of dispositions is made from a critical realist paradigm. Theoretical compatibility between critical realism and social constructionism notwithstanding (for more details, see Fuller and Loogma, 2009), the point to be made here is that there are material foundations of an image of the future that can be realised, though their realisation is not only affected by tangible developments but also by the role of social agency and bottom-up creation of meaning. For this reason, Poli's (2011) comparison between dispositions and latents, and how both refer to underlying levels of reality, is relevant in this section. Rubin (2013) also addresses these latter issues.

focuses on the constellation of *human* elements that constitute and shape them: assimilated and reconstructed information on the past, perceptions on the present, beliefs, values and knowledge assimilated from the cultural and social context, personal preferences, fears, hopes, needs and so on. For this reason, Rubin asserts that images of the future have a strong impact on human motivation, with people trying to materialise the desired future and avoid the feared or negatively valued one. Consequently, "these images of the future have the ability to affect our life and fate. They are held and developed by individuals, groups and institutions – i.e. by all the different actors and on all levels within society" (Rubin, 2013, p. 540). Here, human agency is again at the centre, with the actions taken by different social actors bringing forth some future over others. They are motivated by belief systems, values, understanding of the interconnectedness of time, and oriented by the cultural and social context they inhabit. Linking this insight with that of Bell (1997) and Poli (2011), it can be said that these actions activate the dispositions and latents of specific images of the future, bringing the present one step closer towards the future(s) whose underlying structures are being mobilised.

There is a tendency in the Futures Studies field to portray images of the future of the macro-social level – i.e. the trends and structural forces that shape a given societal setting. However, as Rubin (2013) highlights, there are elements that relate to the level of individuals that are also at work in materialising the desired futures. To counter the macro-social tendency, recent research in the field has tried to bring greater attention to the lived experience of images of the future, that is, to emphasise the micro-social level which is nonetheless embedded in meso and macro structures and settings. This research trend within the field is termed Experiential Futures, which aims to situate "an individual inside their own fictitious world to directly engage with its unfolding" (Burdick, 2019, p. 79). This approach to Futures Studies research accentuates the perception of the world through the social actors' eyes and facilitates the navigation of the future world setting by introducing situations which can become commonplace in the envisioned future but which lack texture and detail if seen only from the macro-social level (Candy and Dunagan, 2017). For this reason, it could be said that Experiential Futures fosters the depiction of the emotional and desired worlds of the subjects involved in visioning processes, something which is not readily available, or must be abstracted, from the macro-social level images of the future that are common in the Futures Studies field.

This review of the conceptualisations of images of the future and their central features enables a working characterisation to be reached for the purposes of this thesis. The images of the future that are the result of this project can be characterised as cognitive constructs of the interviewees that, nonetheless, exhibit dispositions about their personal lives and the external world that can become real by 2040. These dispositions relate to the broader social world (i.e. the cultural, economic, political, social and technological features of a given context) and to the constitution of the subjects' psyche, personality and identity. They can be considered latent attributes of the present which may or may not be triggered, but which could unfold in different ways as the year 2040 gets closer. The interplay between these two groups of dispositions would result in subjects being willing to engage in interaction with a VDI to greater or lesser extent. Additionally, the images of the future in this thesis focus on the micro-social level and display fears, hopes, reservations and desires in more explicit terms than would those wherein the emphasis was on the macro-social level. This is the result of the subjects' envisioned lived experience and potential interaction with the VDI, which evokes emotional reactions as a result of being a reminder of the death of a person in their network of contacts. For this reason, the ontological status of these images can be said to have some foundations in reality and are themselves phenomena to be critically examined for their repercussions in orienting the behaviour of those who imagine them. Their realisation, however, will depend on the activation of the two groups of dispositions (those related to the broader social world and those concerning the subjects' inner world) deriving from developments at the macro-social and micro-social levels that affect the subjects' lives.

2.2 Critical Futures Studies and the depth of reality

This thesis can be situated within Critical Futures Studies (CFS) due to the author's conviction of deeper layers of reality than what is immediately visible affecting the observable social dynamics. Poli's (2011) theorisation of latents already offered an initial approach to invisible, deeper dimensions that cannot be grasped if the researcher is only looking at surface-level facts. Reviewing the stance of CFS regarding ontology, epistemology, methodology and the role of subjects in envisioning the future is thus necessary to establish how adopting a critical approach to constructing and examining images of the future allows for the identification of limiting and emancipatory versions of social practices centred on Human-VDI interaction.

In terms of processes and goals, CFS "envisages and accomplishes social foresight in a democratic way by linking individual foresight into the full process of institutional–social foresight and by making the full development of a participative view and processes the principal task of futurists" (Hideg, 2002, p. 288). This contrasts with more problem-oriented approaches in the field, where the issues are analysed from a systemic perspective and the interconnection between variables is sought to envision their potential evolution. Though valuable for their contributions to dealing with uncertainty in organisational settings, these problem-oriented approaches remain in the realm of the tangible and visible. The study of how people confront issues of mortality and think about future mourning processes, however, demands a methodology which acknowledges hidden realities that can only be revealed through interpretation and metaphors.

CFS is suitable for the study of these topics, as integrating discourse and worldviews into an interpretative exploration of images of the future is the strength of different methods emerging from this paradigm. Unlike more technocratic and positivist research about the future, which view the future as something in the external world to be eventually reached, CFS recognises the existence of futures in the present, within people's thoughts, and embodying their hopes, fears, and expectations. Additionally, CFS can be considered "depth-based", with an explicit aim of exposing power relations in the construction of human societies and systems (Amer et al., 2013). Because of these features – the awareness of the future existing in the present, and the commitment to reveal the operation of power in human societies – adopting the critical stance fostered by CFS can strengthen people's and institutions' ability to make decisions by helping in the development of futures thinking. The role of critique, specifically, is to allow access to "a range of viewpoints and depth understandings that permit the fuller realisation of the human potential for dealing with the future" (Hideg, 2002, p. 288). The images of the future deriving from a CFS method would aid in the emergence of marginalised alternatives that are invisible under conventional and dominant discourses.

Integral Futures and Causal Layered Analysis (CLA) are two methodological approaches which offer insights of the deeper levels of reality within an image of the future. Richard Slaughter, one of the main scholars of the Integral Futures approach, has made calls for "transcending flatland" (1998), or going beneath the surface of the visible and tangible world often found in depictions of the future influenced by bureaucratic thinking and popular culture. Poli (2011) describes Slaughter's approach to the analysis of reality

as epistemological in nature, with superficial or deep interpretations of the world emerging from the theories or perspectives being used. Sohail Inayatullah (1998), in turn, considers reality itself as layered: conventional discourse on a topic is the simplistic understanding of the relationship between systemic variables, these variables themselves acquiring meaning through worldviews and discourse, and having at the deepest layer the cultural unconscious only accessible through myths or metaphors. Poli considers Inayatullah's approach ontological, as "it is reality itself that is articulated between more superficial and short- lived phenomena and deep and long-lived phenomena" (Poli, 2011, p. 71).

This thesis takes an ontological approach to the constitution of social reality, insofar as it considers Human-VDI interaction and its integration into social practices to be shaped by deeper discourses and metaphors. Death and mourning, as subsequently described, are sources of anxiety for human beings, and might drive the desire for immortality. At the same time, however, they are sources of meaning for the events of a human life and its relations with others. Therefore, the exploration of the depth of the images of the future uses the CLA method developed by Inayatullah (1998), as its layered understanding of reality is compatible with this author's view of deeper structures – cultural, linguistic, existential – operating underneath the visible dynamics of Human-VDI interaction.

2.3 Death and mourning as research topics for Futures Studies

Death and mourning as phenomena possess some attributes that make their study from within the field of Futures Studies particularly interesting, as their meaning and experience are closely intertwined with futures thinking, even if it is not carried out in a systematic or methodical manner by non-scholars. Two approaches can be considered relevant for studying death and mourning within Futures Studies. The first is describing how death and mourning shape the way people think about the future, in terms of affecting the meaning they imbue to potential future events. The second is thinking about future events of death and mourning affecting subjects' stance on both themes for the present and for the future, which helps them identify their own assumptions and clarify their perspective on how to deal with mortality in social life. Both approaches are described: while the first one can be regarded as a motivation for the creation of the VDI in the first place and its

subsequent incorporation into social practices, in the second one, thinking about the presence of the VDI in the social world of 2040 reveals subjects perspectives on death and mourning.

Thinking about death and one's own mortality can be interpreted as a specific way of thinking about the future due to the fact that, as living and conscious beings, humans understand that mortality is an inevitable consequence of being alive. *Death is*, in other words, *the future for all living beings*.[3] On a basic survival level, death as a known destination in the future demands that thought be directed to it, because the difference between continuing to live and dying at any given moment resides in navigating the world and successfully meeting a living being's needs. For human beings, thinking about death also implies thinking about life choices and the consequences they carry, as those choices can be life-sustaining or bring a person closer to death. Thinking about their own deaths implies thinking about their own future and the different ways it can unfold. Additionally, death as a known future for human beings orients attention, to greater or lesser extent, to the consideration of the dying process, a future event which happens under presently unknown circumstances. Crucially, however, thinking about death is not only something which affects the personal domain of life, but also social and cultural life: "Thinking about death impacts our sense of the passage of time, and how this underpins the meanings we associate with history, or with civic narratives we articulate around the life of a people, or the lines of successions of sovereigns and their heirs in a commonwealth" (El-Bizri, 2019, p. 67). Hence, thinking about death asks people to think about their own futures and the futures that might emerge beyond their lifetime. They might not live to see any of these futures, but their actions might have an effect on their world even in their absence.

Thinking about mourning has similar effects to thinking about death but directs attention to the death of others and asks subjects to contemplate the impact of these deaths on them. At a basic level, *mourning demands that subjects think about how they will continue living and the many possible futures without a significant other*. When one is in mourning, thinking about the future requires the recognition of the impossibilities ahead – specifically, the reappearance of a dead person in everyday life. Of course, mourning does not have to be tied to death events, with other instances of loss also reconfiguring

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[3] There are some who would argue this is not the case, that death in a phenomenological sense can be overcome, such as some scholars within the transhumanism and posthumanism movements. Though their arguments should be considered, for the purposes of this thesis, death is considered a known fact about the future of living beings, as no one has (yet) discovered a way to be immortal.

perspectives on the future for a person. The loss of income, the loss of certain freedoms, the loss of a familiar environment – the different losses a person can experience entails a reckoning with lost futures that can no longer be realised. Some futures might eventually be similar to the ones envisioned, but a significant loss would necessitate some adjustments to be made to that vision. In sum, the thought process in mourning finds subjects thinking about the future and the impossibilities in it.

Having described how thinking about death and mourning connects to thinking about the future, the two aforementioned approaches for the study of death and mourning within Futures Studies can be outlined. The first one – how thoughts on death and mourning shape how people think about the future – is associated to the expansion of spatial and temporal boundaries for one's own being and sustaining life. According to Zygmunt Bauman (1992), this is the result of being embedded in Western social and cultural systems, in which transcendence is a central concern. These systems foster strategies for survival (extending the life-span and increasing life expectation), wherein the focus is delaying death indefinitely, as well as strategies for immortality, which focus on assigning immortal, life-transcending value to certain human acts (Bauman, 1992, p. 5-6). Mortality is thus recognised as an inevitability which does not have to mean a complete disappearance, for culture provides opportunities for symbolic survival. Thinking about death, then, becomes also an endeavour of thinking and devising strategies that allow people to prolong life or to escape the complete nothingness that death entails.

Adopting a future orientation to the study of death and mourning can give researchers access to the multiple meanings assigned to future strategies for dealing with death and mourning. Future events, seen through the lens of death and mourning, can be depicted as more joyful or more sombre according to the amount of success of certain strategies for transcending mortal boundaries. For example, if examining possible future developments in health-related practices and techniques, the different images of the future might be portrayed as life-sustaining, if the extension of life has been achieved by performing these practices, or life-threatening, if prolonging life becomes elusive or a sequence of events occurs which might shorten expected life-spans. In this sense, the content and tone of the images of the future of a specific issue can be said to be influenced by how prominent and successful the survival and immortality strategies are, with the elements within these images being placed together according to the specific meanings produced by their different combinations. Some images might not feature any particularly relevant strategy for survival or immortality, and their description could be presented in relatively neutral

terms. But those that do have some relevant strategies at their centre, whether concerning the macro-social level or the micro-social level, might be described in more portentous language if these strategies fail or in more promising language if these strategies succeed.

The second approach is arguably more compatible with the CFS perspective of the existence of the future in the present and the depths of reality. By thinking about their own mortality, people are simultaneously becoming aware of their own viewpoints and opinions on the matter. At times, they may recognise fear, anxiety and anger as emotions that arise when the subject of their own deaths dominates their thought processes, but they might also feel surprised if acceptance or serenity are the reactions they experience. This awareness means subjects' thoughts on their future deaths are not relevant only for those future events themselves, but for their present lives and their constitution as subjects as well. By bringing the future into the present and facing the content of those images, hidden personal assumptions and cultural worldviews might be revealed to them, empowering them to modify the content of their envisioned images of the future. Something similar occurs in the case of mourning, as thinking about how they will deal with the deaths and the absence of significant others – that is, how they will mourn them – enables subjects to bring into consciousness the importance of those others and the roles they play in their lives. They might find these images of the future – those without their loved ones – unsettling, but they might also understand them as something they will have to endure, should they come to pass, which could instil a sense of resilience in them.

The depths of reality also occupy a more central place in this second approach, as strategies for immortality and survival are not only assessed based on their prominence and degree of success, but also on the deeper discourses driving their emergence or limiting their expansion. This implies acknowledging their existence and questioning their stance on human agency, personhood and what is considered valuable in a given sociocultural setting. Additionally, metaphors about the most distinctive features of human beings, and what constitutes an entity as a person, might become more apparent under this second approach, as any given strategy will highlight some aspects of personhood and de-emphasise others. Adopting this approach would therefore entail discovering what are the deeper levels of reality that favour some strategies about dealing with death and deter others, while carefully examining the way the levels of reality in an image of the future promote or constrain human welfare when confronting mortality-related issues.

The two approaches regarding death and mourning as topics of research for Futures Studies outlined here are not incompatible – on the contrary, they can be considered complementary. The first asks the researcher to envision future strategies for dealing with mortality and loss, while the second calls for the acknowledgement of the existence of the multiple images of the future of death and mourning that exist in the present, shaped by hidden but meaningful aspects of reality that are not easily identified in the first approach, and the effect they have on people's present perspectives on both themes.

Although implicit in the above discussion, a final theme worth emphasising is that Futures Studies can be helpful for cultivating a pedagogy of death (Affifi and Christie, 2019) by bringing detail to the different possibilities involved in dying and in mourning. Thinking about future death events and mourning processes brings into the present what may seem nebulous and vague in the future. Moreover, in contrast to other forms of increasing familiarity with mortality which are of the impersonal kind, Futures Studies can orient subjects to consider with greater detail the circumstances and consequences of their own deaths, as well as the deaths of their loved ones and its impact on others. By doing so, people become reacquainted with these themes and can think about their possible actions in their own futures and how they want to live in the present so that death is treated not as something to be feared but as something to be accepted.

2.4 Conclusion: Social practices of Human-VDI interaction as images of the future

The contents of this chapter were helpful in providing the knowledge of the Futures Studies field for the characterisation of the images of the future of this thesis. The images of the future can be characterised as the interviewees' mental constructs about their personal future in a setting wherein Human-VDI interaction is a feature of the broader social landscape. Their content, tone, and the combinations of elements are influenced by hidden aspects of reality, such as discourse and metaphors. They cannot, however, be reduced to cognitive constructions, as they are grounded in reality and exhibit two groups of dispositions – those of the social world in 2040 and those of their psyche, personality and identity as expressed in their envisioned personal life. These dispositions could be activated under certain circumstances. As the overview on death and mourning suggests, new strategies for transcendence in a symbolic form immortality, such as the creation of the VDI for the purposes of interacting with it, can emerge from some dispositions being triggered. But the materialisation of the images of the future in this thesis would not depend solely on the presence of the VDI in the social world of 2040, but also on people's

stance on how to deal with death and mourning. Their realisation would, in other words, also be affected by subjects' evolving thoughts on death and on mourning.

Images of the future focusing on social practices of Human-VDI interaction would have the capacity to orient subjects to thinking not only about the practices themselves, but also about their mortality and that of their loved ones, with their eventual deaths bound to happen. People, as living beings, are inherently mortal. Images of the future where death and mourning are the main themes can thus be said to possess dispositions concerning human beings' mortality, although the circumstances of their activation are unknown. By bringing into focus Human-VDI interaction and encouraging subjects to consider living in a world where a person of importance in their lives is gone, they (to varying degrees) become aware of their thoughts on death and mourning. This awareness, in turn, enables the identification of the hidden depths of reality and empowers them in coming to terms with their own mortality and that of others.

3 CONCEPTUALISING SOCIAL PRACTICES OF HUMAN-VDI INTERACTION: AN INTERDISCIPLINARY LITERATURE REVIEW

The previous chapter grounded this research project within the Futures Studies field. This chapter highlights the interdisciplinarity of this research by locating the phenomenon as part of the Death Studies field and the Interaction Studies field, with social practice theory being used as a framework that outlines the technical and social dimensions of integrating the VDI into social life. This chapter constitutes the conceptual core of this thesis, presenting theoretical foundations for the creation of sensitising scheme that conceptualises the social practices of Human-VDI interaction. By doing so, the empirical material used to construct the images of the future in this thesis can be explored with depth and critically examined, focusing on how the specific thanatechnology of the VDI, by becoming part of a social practice, might advance or complicate the acceptance of death and successful mourning in the social world of 2040.

This interdisciplinary literature review provides insights on the potential purposes and motives of the interviewees regarding their use of the VDI, both at a personal level and as part of a broader network of social relationships. This is because engagement with the VDI in the form of interaction does not take place in a vacuum, where the only relevant factors would be those related to an individual's experience. Instead, such an interaction is also shaped by questions of culture and social structures.

The review of the field of Death Studies is intended to establish how death is constitutive of human experience and social and cultural life, as well as the centrality of mourning for making sense of losses, particularly the deaths of meaningful others. In turn, the Interaction Studies offer the theoretical foundations to argue that Human-VDI interaction can be considered social interaction, if some conditions are met. Finally, the review of social practice theory is meant to provide the theoretical concepts that can be addressed when discussing how Human-VDI interaction can be integrated into everyday life and become a social practice.

3.1 Death Studies: Understanding humans' relationship to death and mourning

The thematic field of academic inquiry commonly referred to as Death Studies encompasses a large number of disciplines and sciences. This probably reflects the fact of death

as a universal experience for living entities and its importance for human beings, as they are both a highly intelligent animal species and are aware of their own mortality. This awareness of mortality for the human animal is seen in both the challenges it presents for the life experience of human beings and for the social and cultural practices, systems and structures that result from the need of humans to deal with the fact of their mortality.

The concept of the Virtual Deceased Individual embodies a very human fantasy – that of immortality. As death, life and immortality are all terms that are closely linked, each imbuing the other with meaning and in turn being shaped by them, it is important to consider important aspects to associated to them, and how the VDI raises some questions that might alter humans' relationship to those three terms. Similarly, humans' understandings of death, life and immortality influence the expectations, motivations and structural pressures that go into the creation and use of the VDI. As such, reviewing concepts, theories and issues from a number of fields involved in the study of death is necessary if one is to explore the different possibilities of how people might interact with them in the future.

This sub-section identifies concepts, theories, insights and questions related to the study of death and mourning which are useful for the study of Human-VDI interaction and discusses their relevance. It looks into the philosophical, anthropological, sociological and discourse-theoretical aspects underpinning human beings' approach to facing death and the dying process in themselves or in others. Similarly, it describes the sociological, psychological and psychoanalytic, and discourse-theoretical aspects of mourning. The disciplinary approaches mentioned within the Death Studies thematic field are considered by this author the most directly related to the study of Human-VDI interaction, in both its present manifestations and in its potential future ones. This overview is relevant if one aims to understand 1) why subjects would be willing to engage in interaction with a Virtual Deceased Individual, 2) how the VDI relates to the desire for immortality, and 3) what ideological/discursive stance they adopt when engaging with the VDI.

3.1.1   Death

3.1.1.1   Philosophical insights

Given that death is such a fundamental theme for human life, inextricably bound to it when it is being defined, described and studied, an overview into the topic of death should start by addressing it from a philosophical perspective. A philosophical inquiry into death

reveals some basic questions about how human beings live in the face of death, why death is important for them, and how the topic of immortality might be conceptualised. Addressing these issues, in turn, facilitates understanding the nature of human endeavours about coming to terms with mortality, one of which is the creation and interaction of the VDI.

As a problem for philosophy, death is a central subject because, at least until now, it is an inescapable moment of the human experience, and every single human being has to face it eventually[4]. The claim has been made that philosophical explorations on the subject of death lead to the conclusion that mortality and awareness of it are the defining factors that create meaning in the human species. This then motivates humans in its civilisation-building objectives (Jacobsen, 2017a). On a similar note, philosopher Todd May reasons that the fact that human beings die is their most important fact, and nothing carries more weight than this fact, despite acknowledging that other facets of life such as being in love, having friendships, embarking in life-long projects are still important aspects of living. He elaborates:

> "*Why is this? Because it [dying] is the end of every other fact about us. It is the end of our friendships, our projects, every one of our involvements in the world. Although death is not the only important fact about us, it has the capacity, in a way that no other aspect of us does, to absorb every other fact, to bring every other aspect of our lives under its sway*" (May, 2009, p. 4).

May seems to imply that death has a structuring force in the lives of human beings, being able to encompass all other facts that are constitutive of their life experience and putting an end to them. This feature of death is crucial because it raises other fundamental philosophical questions regarding life and immortality, and whether the VDI, as conceptualised in this thesis, can be understood as a continuation of a deceased individual or is an entirely different entity from the original individual.[5]

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[4]   There are some thinkers that adhere to the idea that death is a problem for human beings, that it is imperative to solve it and are convinced that it can be overcome. In general, they can be named "The Immortalists" (Jacobsen, 2017a), as they believe human beings can eventually achieve immortality.

[5]   It is important to acknowledge that the analytic philosophy tradition to approaches to death is bound by linguistic aspects, which simultaneously give clarity to thought and restrict what can be thought and articulated. For this reason, in the analytic philosophy tradition it is very important to distinguish between real objects and nominal objects (that is, expressing in the form of a noun something that is in reality an action and should be expressed as a verb, or colloquially referring to an entity when what is actually being discussed is a separate entity), as well as between properties of objects and linguistic appearances (which create the confusion that a physical entity has a property that is inherent to it,

The most agreed upon philosophical definition about death is that it is the end of life (Rosenberg, 1998; Scarre, 2007; May, 2009; Luper, 2009). Of course, going by definitional logic, one would need to understand what life is in order to understand what death is. For human beings, the most important definitions centre on two semantic fields: on the one hand, that of organic, biological life, and on the other, that of the phenomenological experience of being alive. Although these two domains of meaning are related, the second one is arguably more important for the human being, as it is the one that is directly experienced by the fact of being alive and self-aware. In this sense, it is possible to question what constitutes the phenomenological experience of a life. For Rosenberg (1998), one way this can be understood is as the continuous, uninterrupted sequence of events (a person's "history") from the perspective of a human being who is aware of him/herself. For both May (2009) and Luper (2009), a life can be said to be constituted by the ongoing relationships, personal projects, sequences of experiences, and material and emotional investments of a human being in the world. These understandings of life are by no means an exhaustive account of what a life is, but are sufficient for the definitional purposes of this text.[6]

Because death is an end to this phenomenological experience of life, human beings have identified it as a problem that needs a solution. As such, a desire for immortality, in some way or form, has become an underlying and sometimes subconscious motivation for activities in society. But the desire for immortality presents philosophical challenges and even logical contradictions. From the perspective of analytic philosophy, none of the conceivable, even hypothetical accounts of immortality, understood either as life after death or as the continuation in some form or presence of a person's history, make sense (Rosenberg, 1998). In the first case, this is because *it is definitionally impossible* to continue life after the end of life. For if it continues, life has not ended. Alternatives representative of the second definition, such as mind-body dualism wherein a part of oneself goes on to another realm and the idea of downloading one's mind into a technological

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when in reality it is a manner of speaking). This thesis does not follow an analytic philosophy route, and as such these linguistic imprecisions might arise in the writing. Nonetheless, it is important to consider these if one decides to go into philosophical inquiries on death. For a more thorough explanation on these linguistic aspects, please see chapter 0: Some methodological preliminaries, of Jay F. Ronsenberg's *Thinking clearly about Death* (1998).

[6]   There are two large schools of thought about what a (not only a human) being is, which are those of ontological monism (an entity is singular and all its properties derive from its singularity) and ontological dualism (an entity is dual by having a material existence and also an immaterial essence). For questions of what life is for a human being and questions regarding persistence conditions, please see Luper's (2009) account animal essentialism, person essentialism and mind essentialism.

device, present logical inconsistencies in terms of other philosophical criteria - criteria like tracing the history of single physical entity across time and the possibility to account for "a mind" or "a soul" in terms the physical properties of living organisms or of machines (Rosenberg, 1998). In other words, from the perspective of a living human being, it is logically impossible to aspire to immortality.

Even if the definitional and logical contributions of analytic philosophy to the issue of immortality are dismissed, a more substantive approach to the desire for immortality presents its own problems if considered, again, from the phenomenological perspective of life experiences. It has been argued by May (2009) that immortality is no solution for the real problem that death presents human beings with: that of meaninglessness. Death threatens to make the lives of human beings meaningless by threatening them with incompletion of all the personal projects and the permanent severance of all relationships. Immortality, for its part, threatens to make the lives of human beings meaningless by stretching them across infinity, with the resulting effect being that of a shapeless sequence of events throughout time where any emotional attachment to personal projects and relationships is nullified by the fact that they can be experienced again and again endlessly. Passion in any endeavour and any importance attached to personal commitments would disappear, since infinite time means infinite opportunities for trying something. Death, for as much as it presents human beings with the threat of meaninglessness by incompletion and sudden severance of any attachment, actually generates meaning by making humans focus on deciding how they wish to spend their *limited* time. This acknowledgement, and the decision to pursue projects and relationships, to live in the present and to make commitments with others even if death could come at any time, is an embrace of the *fragile life* (May, 2009).

Although these philosophical insights on death, life and immortality can initially appear as too abstract for research purposes, in my view they are crucial to understanding the nature of the VDI and some motivations behind the decision to interact with one. For one, a VDI is not and cannot ever be a way to *actual* (that is, not symbolic) immortality if life and immortality are understood in the way they were previously described. This is because there is no continuation from one being, the original individual who is now deceased, to the VDI. The VDI would only be an imitation, to varying degrees of faithfulness, of the actions enabled by the physical properties and personal history of the original individual in relation to the VDI's human interlocutor or interactant audience. It follows from this that the VDI, in the way it is being defined in this thesis, cannot be considered

a human being, as it possesses no self-awareness and, in turn, no phenomenological experience of life. In contrast to a human being, who is alive and thus has attachments to the world in the form of relationships, desires and personal projects, the VDI possesses no attachments and no personal project, for it is a non-living entity.

The philosophical insights on death, life and immortality also provide clues as to why the idea of the VDI might be appealing to some people. For one, from the perspective of the living human interlocutor, it might be an attempt to renew a relationship which had been severed by death. Similarly, it might give the human interlocutor the opportunity to continue, in a different (although not necessarily diminished) way, a personal project that was left without conclusion by the death of the original individual that the VDI simulates being. These aspects, those more specifically related to the human interlocutor, are elaborated upon in the following pages from other disciplinary and scientific perspectives.

3.1.1.2 Anthropological insights

The anthropological perspectives on death are valuable because they bring into focus some cultural practices related to death and dying and contextualise them. Similarly, they are able to identify symbolic dimensions and their effect on the cultural fabric which might otherwise go unnoticed because they are not necessarily tangible. Some predominant areas of inquiry from the anthropological research on death are the study of rituals as a way to investigate cultural beliefs, cultural conceptions of death, attitudes towards the corpse, attitudes towards mourning, how property is handled after the death of its owner, and the cults towards the dead (De Coppet, 1981; Palgi and Abramovitch, 1984; Bendann, 2010).

The anthropological perspectives on death are relevant for the study of Human-VDI interaction inasmuch as they point to the social construction of death, its symbolic aspects, and the meaning of specific practices. They are also valuable because they raise the issue of cultural universality or cultural variability in social practices related to death. This, in turn, would be helpful in assessing issues regarding the desire for immortality and in what (symbolic) forms this can be achieved.

Antonius C.G.M. Robben (2004) considers that anthropological research on death has been influenced by perspectives from psychology and psychoanalysis, and this is reflected in anthropological thought of the 20th century that identifies a tension between the inevitability of death, on the one hand, and the belief in spiritual immortality, on the other. For instance, Bronislaw Malinowski (1948) suggests that the belief in immortality is a

necessary complement for a universal fear of death. Simultaneously, these two attitudes manifest themselves as ambivalent attachments to the living and the dead. This is why mortuary rituals are central in many cultures – as long as death is seen as an end to life, and human beings view this fact in negative terms, mortuary rituals are necessary because they ease the transition of those who were once living into the world of the dead. This, in turn, helps restore the group fabric that had been damaged by death. But because this transition also represents the end of an active presence of the deceased in the world of the living, people cling to some idea of immortality as a way to deny the finality of death. Ernest Becker (1973) would later support this notion of a universal fear of death, arguing that the fear of death is a fundamental inner drive of human beings, with a socially constructed repression of this fear being explained by a universal, natural fear of death innate in living conscious beings.

Mortuary rituals are probably the most studied subject from the anthropology of death and dying. Robert Hertz (1960) states in *A Contribution to the Collective Representation of Death* that human beings do not conceive of death only in terms of biological events, nor is mourning confined to the individual sorrow of the bereaved relatives of the deceased. Instead, death, as an event occurring in a network of social relations, is associated to moral and cultural obligations that manifest themselves in culturally shaped funeral practices. Although his analysis restricts itself to tribal societies in Southeast Asia, his findings do carry cross-cultural significance (Robben, 2004).

Anthropology is also useful when examining the ways humans address the issue of immortality. Robert Jay Lifton's and Eric Olson's (1974) framework of *symbolic immortality* introduces different approaches which human beings have taken in their aim to achieve some form of immortality, in the absence of an experiential one. Like Malinowski, they view the human fantasy of immortality to be universal in response to the equally universal fear of death. Because actual immortality, where the phenomenological experience of life is continuous and uninterrupted, is not possible, the different forms of symbolic immortality are human beings' attempts to overcome their fear of death. They identify five forms of expression: biological, theological, creative, through nature, and by experiential transcendence. Biological immortality refers to the extension of life through genes generationally passed down via one's offspring, but it includes a social component as well which expresses itself in the attachment to group formations, be they family, tribe, organisation or nation. Theological immortality refers to supernatural conceptualisations of immortality combined with core doctrinal beliefs, such as the persistence of a soul in

the afterlife or reincarnation. Creative immortality finds its expression in lasting works, such as artistic, literature and knowledge contributions. Natural immortality refers to people understanding themselves as part of a larger universe and immersed in endless natural cycles. Finally, experiential immortality, although it might appear to refer to the actual immortality previously discussed, refers instead to altered states of consciousness, in which the psychic states give the illusion of the disappearance of time and death.

If seen through the lens of contemporary possibilities of symbolic immortality, it is possible to include some other forms that, perhaps because of the time in which Lifton's and Olson's text was written, were not seen as a possibility. Symbolic immortality through technology is the most relevant one that, in my view, should be included in an updated model. It is debatable to what extent this form of immortality should be characterised as distinct from the others, but it is possible to identify some differences. Biological and creative immortality only represented an indirect form of symbolic immortality, in the sense that other social actors or objects incorporated biological or artistic elements of the deceased, but nothing in which their personality and mannerisms remained. They would be only passively immortal. The exception to this would be some forms of theological immortality, but those require some form of religious belief in an afterlife. Technological immortality, in contrast, would be able to maintain a physical resemblance of the deceased as well as their active presence in the form of personality traits and mannerisms through technological devices. It would contrast with biological and creative immortality in that the deceased would continue to have (limited) agency in this world but would differ from theological immortality insofar as the existence of the original individual would have come to an end with death. Hence, technological immortality provides the deceased no possibility to continue life after death (that would be actual immortality), but the possibility for an active presence in the world of the living through a replication of their mannerisms and physical and personality traits by technological means.

With this overview of the anthropological insights on death and immortality, it is possible to see their relevance for the study of Human-VDI interaction. For instance, the creation and use of the VDI could be interpreted as a cultural practice that attempts to mitigate the fear of death by aiming at repairing the disruption of the fabric that binds the group (a family, a group of friends, co-workers, an formal institution, and so on) that results from the death of one of its members. Similarly, the VDI could, in some contexts, materialise the transition of the deceased from its previous status (whatever it might have

been) to that of an *ancestor*, which would result in interactions focused on seeking guidance from the VDI by members of the group unit affected by its absence. Even from a secular perspective, Human-VDI interaction could be seen as equivalent to the interaction with ancestors insofar as they intend to keep them permanently, interacting with them when in need of advice, and the group unit accumulating them over time as a way of having the younger members know of their elder relatives who have since died. The cultural variability in practices related to death is also relevant, given that the specific significance attached to interacting with the VDI might change according to the cultural context. Finally, and perhaps most significantly, the VDI can be conceptualised as a mechanism which allows a form of symbolic immortality. At the outset, it is not clear if the VDI fits into any of the forms of expression by Lifton and Olson (1974), or if it represents a new form of expression altogether, which could be named technological immortality and is distinct from the others. Nevertheless, it is clear that it can be understood as an attempt to mitigate the fear of death via technological means.

3.1.1.3 *Sociological insights*

Sociological approaches to the study of death and dying reveal aspects about how death is managed by social structures and according to historical eras, how the circumstances of death change according to social group, the practices of people who are dying, how role-taking is affected by the circumstances of the dying process, and the way society continuously arranges social practices and structures so that it is able to integrate death into its processes and the social bond among its members is strengthened. The main strength of the sociological approach to the study of death is that it stresses that the way individuals face death, dying and bereavement is largely influenced by the social context (Bauman, 1992; Seale, 1998; Thompson et al., 2016; Kastenbaum and Moreman, 2018).

Sociological insights on death are relevant because they identify the structural reasons of why some social groups might be willing to engage with the VDI. Similarly, they provide some ideas on what function the appearance of the VDI in society would fulfil in relation to the underlying motivational forces of society (if both the VDI and society are understood from a functionalist perspective). Its overview of historical changes in the way Western societies have dealt with death also sheds light about possible future changes.

Similar to the philosophical and anthropological perspectives, which have argued that death has a central place for human life, the fundamental insight from a sociological

perspective is that death has a constitutive effect for society. Clive Seale (1998) has argued that turning away from death's inevitability and moving towards life is a fundamental part of social and cultural life. In Seale's theory of society and its relation to death, death's inevitability also presents the threat of meaninglessness; hence, participation in social and cultural life is threatened as well. Death's inevitability has a constitutive effect on society because, simultaneously, it also offers a basic motivation for social and cultural activity, which involves a continual defence against death. The social and cultural practices involved in doing this ("attempting to overcome the problem of death") vary greatly across cultures, but most cultures can be said to have some social structures and mechanisms which defend their members from feeling meaningless in the face of death. In this sense, any society can be interpreted as a Death-constituted society.

Although death can be said to have a constitutive effect for society, the specific ways it manifests itself in social practices, rituals and institutions vary considerably not only according to geographical location, but also according to the historical era. This is best exemplified by Philippe Ariès' (1981) proposal of five models of society's relationship with death in Western Europe in the last millennium. The first model was the *tame death model*, in which death was considered a social affair where the family and members of the community were present in the deathbed, wake and funeral, where mortuary rituals framing death within religious doctrines that helped repairing the broken social bonds left by a member of the community. The second model, the *death of self model*, emerged after the eleventh century among the elite as a result of people beginning to understand themselves more as individuals than as part of their communities. With this model, a dualist notion of a person (that is, a being with body and soul) became popular, as well as the belief of the immortal soul in the afterlife. A third model, the *remote and imminent death model*, which became dominant between the sixteenth and eighteenth centuries, resulted from a shift in perspectives on nature's role in life and death, and was accompanied by funerary and burial practices which reflected a fear in being buried alive and a fear in the hostility of natural processes. The universal fear of death conceptualised by some anthropological perspectives emerged in this period, according to Ariès. The fourth model, the *death of the other model*, rose between the eighteenth and twentieth century, in which the fear of death was channelled from the self towards the loved ones with the shift being driven by Romanticism. The final model, the *invisible death model*, emerged in the twen-

tieth century and focused on the medicalisation of death and its management within institutions such as hospitals or nursing homes, with individualism ruling and social solidarity becoming ever weaker.

These last two models, as well as the underlying forces that led to their emergence, can also be said to occur within the larger project of modernity, and in the case of the last model also in modernity's advanced stages of late modernity and postmodernity (Giddens, 1991; Bauman, 1992; Beck, 2000). Modernity was driven by a human aspiration of mastery over nature, including life and death, with life and its ambition, vitality and hope in need to be freed from the oppression of the finality and meaninglessness of death. This eventually led to death being fought in all fronts, with numerous institutions and social practices (i.e. the rise of specific professions and institutional mechanisms) resulting in a sequestration of death that shifted the place of action behind the scenes and away from public attention (Bauman, 1992; Seale, 1998; Elias, 2001; Jacobsen, 2017b). Perhaps most importantly, modernity and its advanced stages were increasingly concerned with the individual as the element of worship, with the aspiration of immortalisation arising again as a mean to achieve mastery over death. This is reflected in specific practices, such as memorialisation of individuals via effigies or the aspiration to leave some lasting impact as ways to achieve symbolic immortality, or more advanced notions of cryogenics or genetic editing for achieving actual immortality.

Seale (1998) suggests that the attention given to the self in late modernity and in postmodernity or liquid modernity (Bauman, 1992; Bauman, 2000) also gives rise to increased *practices of generativity*. The term generativity refers to the investment of people in guiding the following generation, and it is an attribute of the self once it reaches the adult stage of human development (Erikson, 1977; Slater, 2003). Seale (1998) reasons that generativity can become codified into social practices related to death. For instance, generativity is present as an ongoing intergenerational project when examining parents and their relationship with their children, with the former possibly understanding the latter as a form of biological and psychological immortality.

The argument that death has a constitutive effect for society is supported by looking at everyday rituals and how these relate to death and dying. Erving Goffman's ideas on microsocial practices of interaction (1956; 1967) are relevant here because they suggest that participants in an interaction draw on social structural resources, and the performances in an interaction are crucial to maintaining some sense of self-identity. During an interaction, these social structural resources can orient the interactants either towards life

or towards death. In most situations, performances in an interaction incorporate talk, which as conceptualised by Scheff (1990) is a form of ritual which uses symbols to affirm group membership and allows individuals to understand themselves within a larger interpretive framework. Additionally, Scheff argues that talk and bodily communication together generate pride in intact social bonds and shame in broken social bonds. This way, individuals are compelled to act in such a way that social bonds remain intact, a process which involves finding meaning in these and, consequently, taking part in activities that are life-sustaining. Simultaneously, in ensuring the maintenance of the social bonds, the threat of meaninglessness generated by the prospect of death slides into the unconscious. In contrast, when social bonds are broken, a disruption is experienced – a disruption which may manifest as a loss, bringing into conscious thought other notions and concepts related to loss, death being one of them. For this reason, interactions and other everyday rituals which sustain social bonds guide their interactants and performers to invest themselves in life and turn away from death.

Scheff's ideas are useful in seeing more clearly the ways in which society's activities are constitutively affected by death, insofar as they orient its members towards life. The implication of Scheff's ideas on talk and bodily communication in light of Bauman's (1992) exploration of the strategies for immortality is that these elements can be combined with institutional power and manipulate symbols to affirm membership of individuals as part of a social group which attempts to gain mastery over death, which in late modernity could be the medical community and groups labelled as "healthy individuals". In the case of the latter, healthy individuals are not healthy by default or only in the absence of physical ailments, but engage in a variety of practices (exercise, eating the right foods, cleaning their surroundings, and so on) that characterise them as healthy. In contrast, institutional power and symbols can also be combined with talk and bodily communication to exclude someone from these privileged groups (by labelling them as "dirty", "messy", "lazy", and expressing disapproval and avoidance). In some case, this can both marginalise them and, if a justification for their behaviour is found and validated by institutional power, it may allow them to enter into the dying role.

For Seale (1998), the implication of Scheff's ideas on *talk and bodily communication as ritual* is that society is continually structured around everyday moments which orient the living towards life rather than towards death. Cultural symbols associated to life and death are sometimes used strategically and appropriated by social actors in particular situations, which can range from explicitly death-related formal rituals to the possibility of

commemorating a special occasion with meaningful others. Moreover, he contends that emotions are felt and transmitted as a result of humans' nature as embodied beings, fuelling their motivation to participate in common membership of imagined communities, a notion he borrowed from Benedict Anderson (1983), although he reformulates it to mean any community of anonymous individuals which can generate an affective investment in it. Hence, membership in an imagined community, as well as participation in social and cultural events, whether formal large-scale rituals or microsocial everyday interactions, is fundamentally motivated by the human social bond. Taken together, an individual's lasting contributions towards these communities, no matter how big or small, can represent a form of symbolic immortality (Lifton and Olson, 1974).

These sociological insights offer some clues as to the underlying structural forces associated to the emergence of the Virtual Deceased Individual. For one, the argument of death being constitutive of society by offering the motivation for social and cultural life suggests that the VDI might be an instance of a mechanism which defends its members from the existential threat of the meaninglessness of death. It would do so by allowing the living to continue engaging in everyday rituals with the deceased using the VDI as proxy, thus giving a sense of stability to the living. Similarly, Ariès' (1981) historical models of death in Western Europe point to a potential shift in some cultural contexts of humans' relationship to death. In this case, it could be speculated that such a shift would be characterised by ambivalence: on the one hand, there could be a continuation of the invisible death model, where death issues are managed by institutions and professionals behind the scenes; on the other hand, death would be more present than ever with the VDIs, as these technological devices would allow the dead to have a more active presence in the lives of the living than they currently have. Such a shift could signal the emergence of a new death model, even if it is not universal and is applicable only in certain contexts.

The notions of practices of generativity and talk and bodily communication as ritual also point to the potential ways in which interacting with a VDI (both in its creation and in its use) would be appealing. The creation of the VDI could be considered a practice of generativity inasmuch as it allows the previous generations to leave some trace of themselves behind to guide the newer generations. Although this is already done in writings, in different forms of audio-visual media and via the internet, as well as in different objects that represent something about the deceased to the living, the VDI could be designed in such a way that it would be capable of giving insights the original person would have if asked for advice. The fact that the VDI is designed to simulate some form of interaction

with the deceased (from text-based, limited forms of interaction to highly complex and advanced forms) means that some forms of talk, and possibly bodily communication, could take place. These forms of interaction with the VDI could, in turn, be used to maintain the social bond, and to orient the living towards life. One could speculate that in institutional settings, the use of the VDI could affirm the membership of the living in the imagined community of which the VDI is (and, by implication, the original individual was) also a part. Alternatively, leaving a VDI behind in an institutional setting could be seen as the equivalent of ensuring a symbolic form of immortality within an imagined community, with the living members in such a setting being able to consult with the VDI on issues that the original individual was an expert in. It thus would enable the deceased to have some form of agency in the imagined community even after their deaths.

3.1.1.4   Discourse theoretical insights

Discourse theoretical insights on death and dying point to the way death is socially constructed, to the dominant signifiers and meanings when referring to both of those terms, and to the different discursive articulations that can be identified. In addition, if one goes beyond the analysis of discursive constructions and shifts the focus to how particular individuals adhere or challenge dominant discourses, it is possible to visualise its contingent nature and the possibility for new discourses to emerge.

Insights from discourse theory are relevant because they would enable researchers to identify what the dominant discourses regarding the VDI and its relationship to death would be, as well as alternative discourses that challenge the mainstream ones. Similarly, they would allow for a more precise contextualisation by characterising societies who use the VDI not as homogeneous entities, but as societies marked by conflict and disputes over the meaning of certain practices and technological devices.

Before going further, it is necessary to establish that there are many different variations of discourse theoretical approaches, and each has their own purpose and set of theoretical premises. For this reason, specifying which discourse theoretical approach a researcher is following is required, as this clarifies expectations regarding the analytical insights one might expect from the analysis of discourse. In the case of this thesis, the specific approach is that of Post-Marxist discourse theory, as developed originally by Ernesto Laclau and Chantal Mouffe (2014), and later by their students in the Essex School of Ideology and Discourse Analysis (Howarth et al., 2000; Howarth, 2000; Glynos and Howarth, 2007; Glynos et al., 2009; Howarth, 2010; Howarth et al., 2016). Discourse in

Post-Marxist discourse theory does not refer only to text and linguistic forms, the explicit attention paid to these notwithstanding. Instead, it encompasses groups, social practices, institutions and objects, though it argues that these have no inherent meaning, with meanings being the result of a social and *political* (in the sense that power, not immediately visible, is exercised) construction. This theoretical perspective asserts that the meanings of the elements of a symbolic system do not exist independently of the specific context of meanings that are being mediated between the social actors of the system.

There are three fundamental concepts that emerge from this framework and which are relevant for this thesis. The first one is *articulation*, a practice which links heterogeneous elements/signifiers in a symbolic system together and transforms their identity and meaning in the process. The second one is *radical contingency*, which refers to the impossibility of a discourse to permanently fix its meaning because the infinitude of the field of discursivity implies that there are always external elements which perform a constitutive effect on the symbolic system of reference and could eventually be incorporated into discourse, thus allowing for the disintegration of discourse and its re-articulation. Discourse, in this sense, is always radically contingent, vulnerable to new signifiers that generate new meanings by way of new articulatory practices. The final one is *hegemony*, an inherently political logic which exercises power by privileging one element in the symbolic system, a *nodal point*, and partially empties it from its meaning, rendering it a partially empty signifier which can then be imbued with additional meanings that were not previously associated with it. Privileging the nodal point and other elements in the symbolic system means the necessary exclusion of other elements, an act which is also achieved through the exercise of power. The nodal point is linked to other elements by means of articulation. When this happens, a discourse is formed.

With this understanding of discourse, and specifically focusing on the idea that discourses are radically contingent and can change by way of new articulations, it is important to explain how this change might take place. Post-Marxist discourse theory has developed the Logics of Critical Explanation (LCE) methodological approach to explain discursive hegemony and transformation (Glynos and Howarth, 2007; Glynos and Howarth, 2008). Hegemony naturalises discourses, and discourses lead to *discursive social practices*, networks of activities which social actors perform routinely without critically examining them. These discursive practices are governed by *social logics*, the norms, rules and behavioural patterns of the actors which respond to a hegemonic discourse and shape discursive social practices by imbuing them with meaning and naming

them according to signifiers linked in a chain of articulation to the nodal point . *Political logics* govern discursive practices that challenge the hegemonic discourse, lead to the naturalisation of a discourse, defend hegemonic discourses from challenges, or transform a hegemonic discourse by disarticulating its chains associated to a nodal point and reconfiguring the symbolic system, its signifiers and its meanings.

Antagonism emerges as a result of the collision of the political logics of competing discourses, because political logics lead to the emergence of practices (such as collective mobilisation, protests, production of defiant cultural texts, and so on) that, on one side, challenge the hegemonic discourse and, on the other side, defend it. This process of antagonistic collision is resolved once one discourse comes to dominate, which may have been the hegemonic discourse at the time of conflict or might have been an alternative, previously marginalised one, with the new one gradually becoming hegemonic (Jorgensen and Phillips, 2002; Glynos and Howarth, 2007).

The successful defence or transformation of discourse hinges not only on the capacity of each hegemonic bloc to defend its respective articulation of signifiers and nodal points and disarticulate the opposing discourse, but also on the affective investment that subjects have in each discourse. This affective investment is governed by the Logic of Fantasy and fantasmatic logics, terms which Post-Marxist discourse theory borrows from the field of psychoanalysis, specifically its Lacanian branch. Simplifying quite considerably, a premise of Lacanian psychoanalysis is that human subjectivity is constituted by a fundamental lack[7], and is sustained by a *desire* to fill that lack. The *Logic of Fantasy* refers to a narrative structure which moves the subject towards an idealised setting which promises one of two outcomes: a "beatific" one delivering imaginary fullness (that is, it promises to fill the lack of the subject), or a "horrific" one bringing disaster (which leaves the lack but may also expand it). The narrative structure in the Logic of Fantasy is variable according to the context, but its crucial characteristic is that an obstacle impedes the human subject from fulfilling its desire (Glynos, 2001; Glynos, 2008).

Fantasmatic logics are logics that support the social logics to which discursive social practices respond to and reinforce the stability of discourse by concealing its radical contingency and the vulnerability of its naturalised arrangement of social relations. Hence,

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[7] This is similar to how discourse is conceptualised as having a constitutive outside, those elements in the field of discursivity which are not articulated within discourse, but which nonetheless shape it.

fantasmatic logics explain why discourses are resistant to change, insofar as human subjects have an affective investment in discourse because of its promise to fill their lack. Similarly, fantasmatic logics explain why some alternative discourses that challenge the hegemonic one gain enough support, as these mobilise subjects' affect and generate in them new affective investments (Glynos and Howarth 2007; Glynos and Howarth 2008).

This detour on Post-Marxist discourse theory was needed to showcase the different discursive articulations on death. Carpentier and Van Brussel (2012) argue that death, despite its apparent material nature, is embedded in discursive practices and social relations. As such, it can reconcile its material aspect with its discursive one, as the biological experiences related to death are given meaning and understood within specific cultural and social processes. They identify four discursive articulations: 1) the first is a conceptualisation of death in relation to "living" terms, with signifiers related to life linked in death discourse to the body, to the personality and/or to the consciousness, in which these components fail, cease to exist, terminate or suffer deterioration beyond repair; the nodal signifiers in this articulation is that of "the end of life", reflecting a pure void of meaning when trying to express what death consists of from a phenomenological perspective; 2) a second cluster of signifiers is that in which death is characterised in a temporal dimension as being irreversible, inescapable, permanent; 3) a third articulation of death relates to its perception as a threat, permanent and omnipresent, which is related to human frailty; 4) the final articulation is that of death's undesirability, which places death as an opposition to the desirability of life in Western culture.

Both Carpentier and Van Brussel (2012) consider Ariès' (1981) historical account of the evolution in the way Western European societies have related to death useful to signal that discourses related to death have changed, despite death's apparent materiality, and thus a more detailed study of the radically contingent character of death discourses is needed. However, instead of characterising the contemporary era as one in which death is managed behind the scenes as claimed by Ariès' invisible death model, they contend that there are two discourses vying for hegemony. The first one emerged during the modern era and is known as the medical-rationalist discourse. Dying, in this discourse, is seen from a technical and impersonal perspective and localized in the processes of the body, deprived of significance at an existential and personal level. Death, in consequence, was the result of a subject who had become carrier of disease and was incompetent in carrying out successful practices to avoid it. Medical-rationalist discourse is most compatible with Ariès' invisible death model and suggests that death is better kept a secret from those who

are dying to avoid distress and allow continuity of some routine practices. The second one, the medical-revivalist discourse, emerged in late modernity and, in contrast to the medical-rationalist discourse, insists on death becoming familiar for all involved and openly talked about. It incorporates a dimension of reflexive and conscious planning, which is an important element for the self-identity of the dying person (Seale, 1998; Carpentier and Van Brussel, 2012; Van Brussel, 2014).

These discourses can be recast in terms of the LCE methodological approach outlined above. To provide an example, within medical-rationalist discourse, a set of social logics – let us call these *logics of bio-localisation* – govern social practices such as medical diagnoses, institutional procedures for death management (such as autopsies and embalmment), and death-avoidance techniques, such as seeking medical or alternative[8] treatments that aim to prolong life as long as possible. Another set of social logics – let us call these *logics of death-denial* – involve social practices such as relatives and doctors concealing information about death to the dying, as well as a focus on the continuity of routine activities that orient both the living and the dying towards life, such as doing physical exercises or participating in family or community events. These sets of social logics are supported by a set of fantasmatic logics – let us call these *logics of medicalised hope-maintenance* – wherein the dying person's life force is sustained by the hope that whatever life-threatening condition they are experiencing can be overcome by medicine and medically supported lifestyle choices. Political *logics of death awareness* might challenge medical-rationalist discourse, emphasising that it leads to unnecessary pain and conceals necessary information from the dying individual. These political logics would be promoting medical-revivalist discourse, with its own sets of social logics and fantasmatic logics to support them.

The latter and more contemporary death discourse of medical-revivalism offers some interesting insights with respect to how subjects assimilate discourses. This, in turn, allows for discovering its nodal points and other signifiers linked to them. Seale (1998), referring to medical-revivalist discourse as a cultural script, states that subjects engage in practices and activities that, even if they are dying, orient them and the social actors in their network of social relations towards life and away from death. This is done by partaking in activities that protect the social bond, such as having a nutritious meal together

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8   Alternative in relation to medical discourse, which is hegemonic in modernity and in the West. However, on political principle, it should be called simply a different discourse.

even if the dying person is feeling unwell, and that facilitate the lives of loved ones in the absence of the deceased, for example by having legal and funeral arrangements made beforehand. Meaningful talk which acknowledges the imminent death of one of the parties involved is another mechanism which allows to maintain social bonds, even facilitating the restoration of previously broken social bonds. However, as Seale suggests, even acts that lead to death, such as fasting to death, can also reflect medical-revivalism because they enable the persons who choose to do so to plan for their demise and assert their independence (Seale, 1998).

These examples of the assimilation of medical-revivalist discourse provide some clues as to the nodal points around which other signifiers converge. Carpentier and Van Brussel (2012; Van Brussel, 2014) find two groups of nodal points of medical-revivalist discourse. Although they belong to the same discourse, the emphasis is different, and as such it can be said that there are two different articulations within this discourse. The first is constructed around the signifiers of control, autonomy and dignity, in which dying subjects should be in control their own death, without detaching it from the medical context. Of special interest is giving the subject decision-making power and depriving this power from the subjects is a violation of the social norm under this discourse. In late-modern Western societies, this notion of control over one's death has been articulated with dignity, which acquires the connotation of independence and autonomy. The second group of nodal points is constructed around awareness and heroism, where awareness allows the dying subject to have open communication with others involved (family, medical specialists, carers), to make end-of-life decisions and to reconcile with loved ones and reconstruct their biographies.

Taking into consideration these insights, it is possible to see how they are relevant for the study of images of the future of Human-VDI interaction. For one, the VDI can be considered a discursive element which has as its origin the death of someone, and so should be articulated around specific nodal points regarding death and mortality, or life and the aspiration of achieving immortality. From a Futures Studies perspective, this is relevant because the images themselves are products of discourse, with the researcher's duty being to identify the different articulations within these future images of the VDI in relation to death. Further, because Human-VDI interaction does not occur in a vacuum but is embedded in social relations, it is important to consider what hegemonic discourses might prevent the emergence and common use of the VDI. Alternatively, it is also possible to consider, from a Futures Studies approach, what is the hegemonic discourse that

may constrain how VDIs are created and how they are used. A third possibility offered by combining a discourse theoretical perspective with a Futures Studies orientation would be to consider Human-VDI interaction and its embeddedness within some discourse as hegemonic, with alternative discourses being less prominent or marginal.

The Futures Studies approach, with its emphasis on the plurality of images of the future, is also suited for a discourse theoretical analysis, as this latter perspective favours the characterisation of societies as conflictive, and thus facilitates identifying intra-discursive and inter-discursive tensions and resolutions. Specifically, instead of considering the images of the future as mutually exclusive, discourse theoretical insights on the futures of Human-VDI interaction might characterise the resulting images as different discourses within a single social reality, some being hegemonic, and some being marginal. As with the opposing contemporary discourses of medical-rationalism and medical-revivalism, discourses within which contrasting forms of Human-VDI interaction are embedded might instead find themselves colliding in a struggle for hegemony. Preliminarily, it can be stated that two discourses related to Human-VDI interaction might be directed towards an antagonistic clash: the first being that of the mastery over death, which Jacobsen (2017a) describes as emerging within a Post-Mortal society and which derives from the aspirations of modernity to overcome human limitations and dominate nature; the second, in contrast, would encourage symbiosis with death, recognising it as a part of existence and as a source of meaning.

3.1.2   Mourning

3.1.2.1   Sociological insights

Sociological insights on mourning in the digital age are relevant for the images of the future involving the VDI and human beings' interaction with it. Digital social media have enabled new forms of mourning which require deeper examination. These insights are relevant insofar as a future VDI's affordances could "contribute to a technosocial context where the boundary between the living and the dead become increasingly indistinguishable" (Meese et al., 2015, p. 11).

The internet and digital social media enable new sites, new mechanisms and new artifacts that facilitate mourning which do not have to be physical spaces or objects. According to Jessa Lingel (2013), social networking sites (SNS) enable users to simultaneously interpret their grief and share it with others in an open venue where hierarchies are

temporarily weakened and social and cultural obligations are not as rigid as one would expect in physical settings such as cemeteries or funeral homes. This occurs because in online interaction, the community that forms around the deceased is free from some bounds that are in place in formal mortuary rituals. As an example, she mentions the online presence of a beloved icon facilitates the mourning process by creating alternate sites where fans can work through their grief, instead of being denied their chance to mourn as a result of their likely exclusion from formal mortuary rituals. What this example implies is a resistance to institutional control over appropriate mourning practices (Lingel, 2013).

Tony Walter (2015) instead finds some tensions that result from the internet and SNS changing mourning practices. While his position shows coincidences with Lingel's insofar as he views online mourning as carrying out a de-sequestration of death and resisting institutional power, he also considers that the unclear and shifting norms in relation to mourning may generate tensions in the online community of mourners, partly as a result of the flattening of hierarchies and partly because expectations of public displays of grief are not met. Crucially, though, he also finds that SNS allows for a public address to the dead, contrasting it with the previous practices of mourning where the dead were talked to in private. This new practice, in turn, allows for the maintenance of some form of relationship with the deceased, even if it is unilateral.

However, unilateral relationships with the dead, as those considered by Walter (2015), need not be the case. As Meese et al. (2015) point out, the internet's and SNS's affordances produce key sites for "distributed personhood", with new software allowing the dead to continue influencing current events and have some form of interaction with the living. In addition, there are online services which use algorithm to offer a "re-enlivened" version of the deceased. Although this re-enlivened version of the deceased is explored more thoroughly in the next section, for now it is important to highlight the concept of distributed personhood. According to Meese et al., some theories of personhood highlight the *relational* aspect personhood. As such, while bodies may die and a human being's conscience dies with them, human beings leave some traces of their personhood behind – the traces that derive from their relational dimension as persons. Based on this, the authors argue, their *personas* (that is, the relational component of personhood) materialise in new ways when combined with the internet's and SNS's affordances. In the cases of posthumous interaction that involve these personas of the deceased, this interaction is ontologically different from how the living might "interact" with a gravestone or

a public memorial. This is because these latter are instances of representative objects, while *digital personas* are generated by the relational component of each human being's personhood and emerge in virtual settings (Meese et al., 2015). Digital personas can facilitate the continuation of a relationship with the deceased, and they could be considered other forms of memorialisation. Even though more research is needed, preliminarily it can be stated that these digital personas of the deceased, inasmuch as they might register the death of someone as a loss, might facilitate mourning as well.

These insights from the sociological perspective on mourning are relevant because the VDI, as conceptualised in this thesis, has a specifically digital/virtual component. Displaying the relational component of the deceased in virtual form might fulfil the same function as gravestones or public memorials, insofar as they help in the mobilisation of affect. The concept of distributed personhood and its relation to the relational component of people as manifested via digital personas (Meese et al., 2015) also raises an interesting issue: what does it mean for the mourning process that at least the relational component of the person still exists as an external entity? In other words, even if some form of relationship can continue because of the existence of digital personas of the deceased (and in the case of this thesis, the VDI), *can the death of the original individual still be registered as a loss* given that the relational component of the deceased continues embedded in the network of social relations?

3.1.2.2   Psychological insights

Psychological literature on how people deal with the loss of important others in their lives focuses on the manifestations of grief, death anxiety, mourning and anticipatory mourning, and the nature of continuing bonds. It is this last concept which is the most relevant for this thesis (mourning is covered as an insight of a similar but ultimately different discipline: psychoanalysis). *Continuing bonds* are the ongoing inner relationships by the bereaved with the deceased individual, and the concept has been influenced by the ideas of Freud on the concept of mourning, even if they are usually opposed (Klass et al., 1996; Stroebe and Schut, 2005). This definition points to its relevance within the context of studying the images of the future of Human-VDI interaction: it focuses on maintaining a relationship in some way. As is also the case with expected Human-VDI interaction, the manifestations of continuing bonds and their ontological nature vary widely depending on the context and features of the experience of such a relationship.

The literature on continuing bonds suggests that these may be experienced either passively, for instance, by engaging in memory recollection or by looking at objects that are associated with the deceased in some way, or actively, in which the continuing bond is experienced as an interaction or a direct communication between the bereaved and the dead. The research conducted on the subject considers continuing bonds as a relatively normal component of bereavement, but findings on its effects (whether adaptive or maladaptive) are inconsistent and sometimes contradictory (Klass et al., 1996; Marwit and Klass, 1996; Normand et al., 1996; Tyson-Rawson, 1996; Field et al., 1999; Schut et al., 2006; Foster et al., 2011; Root and Exline, 2014).

Root and Exline (2014) find, by doing a literature review on the subject, that the definitional issues surrounding the concept of continuing bonds are a key source of this inconsistency. This is because the number of behaviours and the nature of the continuing bonds has been considerably broad, and research on this subject has not often narrowed the concept to operationalise it and facilitate its use in psychological research. They suggest five dimensions which further research must pay attention to if the effects of continuing bonds on coping with the loss of a loved one are to be found. The first one is specificity, which refers to the tangibility or intangibility of the bond, as well as how defined or amorphous it is. The second one is proximity, referring to how the connection is felt and whether it manifests as an influence or as an ongoing interaction. The third one is whether it is a past bond (because death implies that the relationship is in the past and is static) or a present bond (in which the relationship can change). The fourth one is the locus of the bond, whether it is internal (in the psyche of the bereaved) or external (by using visual, tactile or auditory systems). The final dimension relates to the initiating agent, that is, whether the bond is experienced passively or actively. Taken together, these five dimensions are likely to yield more specific findings in research on the subject.

Further lines of inquiry in the subject should consider, in addition to the five dimensions of specificity outlined above, the following themes: the bereaved's perception of the quality of the continuing bond (whether it was positive or negative), the nature of the relationship before the death of the loved one, and beliefs in the afterlife (Root and Exline, 2014). It is interesting, however, that the dimensions and themes of research do not consider other technical possibilities that allow a bond to continue in a tangible way: some are suggested by the transhumanist movement, which would include mind-downloads to machines, or the recreation or simulation of the personality of the deceased via software and algorithms, as implied by the concept of the VDI. In other words, while supernatural

possibilities for continuing bonds have been examined and put forward, technical possi-bilities are not an explicit focus in current research. This is not surprising, as empirical research on technical possibilities of continuing bonds would need to have users of these technological devices which, so far, are very rare.

It is easy to see how the literature on continuing bonds may be relevant to the study of images of the future of Human-VDI interaction. A VDI could be considered an instance of a continuing bond, one which, in the context of Root and Exline's (2014) framework, would be tangible, presents an ongoing relationship, alternates between the past and the present and at least partially external. Questions concerning the initiating agent would vary according to the technical capabilities of a particular VDI, which would range from only the bereaved initiating the interaction in cases where the VDI is confined to a tech-nological artifact or virtual environment only accessed upon will to a mostly autonomous physical VDI that can interact not only with its human interlocutor but also with physical objects in the real world.

Although a VDI could be considered a continuing bond with these features, it raises some interesting issues in light of the sociological insights (discussed above) and psycho-analytic insights (discussed below). One is the fact that the notion of the digital persona is itself a component of a person that materialises in the form of the VDI which, given the fact that it is now separated from the original individual, would give it an autonomous ontological status on its own, one in which *there is* an interaction but such an interaction is between a "full" person and a materialised digital persona (meaning, a partial person), one which has some agential capacities of its own. Another issue is the fact that the con-tinuing bond, despite being ongoing, would remain static insofar as it is focused only on Human-VDI interaction. This is because, as opposed to a person, the VDI cannot experi-ence personal growth or change in values, something which its human interlocutor still can. Hence, any variation in the relationship would only occur because the human inter-locutor changes, as the VDI would remain a snapshot of the original (now deceased) in-dividual. These and other potential issues would be worth studying in more detail as the development of VDIs and their use continues.

3.1.2.3   Psychoanalytic insights

Sigmund Freud's work *Mourning and Melancholia* (1957) is perhaps the most influential text written on the subject of mourning for the modern era. It offers an exploration on what mourning is and how it differs from melancholia, with Freud valuing positively the

former and viewing the latter as a pathological distortion of the former. Freud's psycho-analytic insights on mourning and melancholia are relevant because they offer the most complete and nuanced framework for interpreting how subjects deal with the death of a loved one and, more generally, how they face circumstances of loss. Although several psychoanalysts and authors from other fields offer new takes on mourning and melancholia and expanded the scope of Freud's theses (Kristeva, 1989; Abraham, 1994; Klein, 1994; Neimeyer et al., 2002; Butler, 2006; Leader, 2009; Glynos, 2014; Hurtado, 2016), Freud's insights provide the foundations to understand how human beings (at least in the Western, developed world, although a case could be made for the cross-cultural applica-bility of Freud's ideas) have to make a conscious effort to work through the loss of their loved ones and how this loss affects their attitudes towards life and death.

Before delving deeper into Freud's theory of mourning and melancholia, an im-portant distinction should be made: grief and mourning are not the same phenomena, alt-hough they are related. Leader (2009) states that grief is the natural reaction to experienc-ing a loss, while mourning is the work that goes into processing that loss. Mourning, in other words, does not come naturally, which is a crucial aspect of Freud's psychoanalytic ideas on the subject.

Mourning and melancholia are both responses that result from facing a loss, usually in the form of the death of a person but it also includes the loss of abstractions. Initially, both responses show similar symptoms: "cessation of interest in the outside world, loss of the capacity to love, inhibition of all activity" (Freud, 1957, p. 244). For Freud, the first important distinction between mourning and melancholia is that mourning is a nor-mal process which human subjects must go through after a loss to renew the interest in the outside world and find new attachments, while melancholia shows an additional symptom: "a lowering of the self-regarding feelings to a degree that finds utterance in self-reproaches and self-revilings, and culminates in a delusional expectation of punish-ment" (Freud, 1957, p. 244). This additional symptom marks a crucial distinction between the two concepts: mourning is a process that orients the person towards life, while mel-ancholia orients them towards death. Freud's *Mourning and Melancholia* can be read as a text wherein a battle is laid out: that between life and death, propelled by the permanent departure of the loved one. When considering this battle in light of Seale's (1998) theory on social and cultural life as a defence against death, the Death-constituted society can be interpreted as providing additional mechanisms that guide the individual towards life, although the victory of life over death is never assured.

Mourning can be characterised as a process similar to a personal metaphorical journey: an inciting incident (the death of a loved one) sets the mourner on a path of personal recollection and analysis wherein they have to continuously face painful moments – moments that detach the mourner from life – so they regain the ability to invest themselves in new life experiences. The one who mourns starts comparing the memories of the lost other with the reality being faced, acknowledging the loved one's permanent disappearance. In mourning, "each memory and expectation linked to the person we have lost must be revived and be met with the judgement that they are gone for ever. This is the difficult and terrible time when our thoughts perpetually return to the one we have lost" (Leader, 2009, p. 26). During the mourning process, the lost other's existence is resurrected in the psyche as a way to deal with their actual absence. Each time the comparison of the memories to actual experience is made, however, the intensity of the pain of recollection diminishes. Mourning will end when the survivor has acknowledged that there is no more future to be experienced with the lost loved one, detaches his/her emotional tie with the deceased, and reattaches himself/herself to new objects of affection (Freud, 1957; Clewell, 2004; Leader, 2009).

Melancholia, as a pathological form of mourning for Freud, presents complications for the process to be successfully resolved or, following from the previous metaphor, for the journey to end. Firstly, although the mourner might be more or less aware of the experienced loss, for the melancholic this is not so straightforward. This is because in melancholia, "the patient cannot consciously perceive what he has lost", and though the patient might certainly be aware of the loss, "he knows *whom* he has lost but not *what* he has lost in him" (Freud, 1957, p. 245). In other words, while in mourning the loss manifests itself consciously, in melancholia the magnitude of the loss retreats into the unconscious. Additionally, the lowering of self-regard leads the survivor to an attack on the ego: "The patient represents his ego to us as worthless, incapable of any achievement and morally despicable; he reproaches himself, vilifies himself and expects to be cast out and punished" (Freud, 1957, p. 246). This is different from what happens in mourning, where it is the world that is perceived as worthless and not the ego. It is possible to see from this attack on the ego that the possibility for death to win the battle over life is real: the most extreme form of attack on the ego is self-harm, which can lead to self-destruction, including social and biological death.

Freud's crucial insight on melancholia is that this attack on the ego is in fact a reproach on the lost loved one which manifests itself as reproach to self. How might this

be? The discipline of psychoanalysis has suggested that human subjects are capable of harbouring feelings without being consciously aware of them, manifesting themselves in non-apparent ways. Similarly, it has also proposed that affection and hatred are closely linked, a sign that the relations between the living are not pure but are instead characterized by ambivalence. Freud himself has stated that in an attachment, behind tender feelings of love there is a concealed hostility toward that person, a hostility which is rarely conscious (Freud, 1955). With this insight in mind, it is possible to see that the loss of a loved one might render one incapable of articulating consciously the feelings towards the deceased and, as such, manifest itself in complications for mourning. As explained by Darian Leader, "Hatred – whether it is conscious or not – can also complicate the mourning process quite seriously. Loss and bereavement might not always allow for a ventilation of feelings one might have repressed, and in general hostility to the dead is not tolerated well by us" (Leader, 2009, p. 43). For Freud, the ambivalence felt towards loved ones when they were alive engender feelings of guilt once they have died. In consequence, the reproach is directed towards the survivors' ego, chastising themselves for inadequate behaviour towards the deceased.

These insights on mourning and melancholia are part of Freud's first formulation of the concepts. They would be the most influential, but they were not the only ones, and his formulation of the concepts evolved over time. Particularly in *The Ego and the Id* (1961), Freud reformulates the development process of the ego, with the infant engaging in an identificatory process with the lost other as a means of making sense of its absence. This identification gives rise to an internally divided sense of self, consisting of the superego, the ego and the id, and an internalisation of the lost other into the self. In other words, in *The Ego and the Id*, Freud argues that a condition for the constitution of human subjectivity is the identification with a lost other.

For Clewell (2004), this reformulation of ego development has consequences for Freud's earlier work on the concepts mourning and melancholia. Because human subjectivity emerges as a result of the loss of significant others, the strict opposition between "healthy" mourning and "pathological" melancholia disappears, as what was previously considered a pathological identification is now central for the existence of the self. Therefore, melancholic identification becomes part of the mourning journey: the goal is no longer to detach oneself from the lost loved one, but to integrate the lost other into one's self. This implies that mourning never comes to a decisive end; rather, mourning may entail an interminable labour of integrating the losses experienced throughout life.

Clewell's reading of Freud is supported by Butler's (1997) ideas on subjectivity, who states that a severance of attachments would lead to the dissolution of the sense of self. This being the case, Freud's theory of the ego as developed in *The Ego and the Id* implicitly puts forward a different characterisation of the mourning journey: "the mourning subject may affirm the endurance of ambivalent bonds to those loved and lost others as a condition of its own existence. Freud's work counsels us, then, to relinquish the need for a strict identity unencumbered by the claims of the lost other or the past" (Clewell, 2004, p. 65). This would seem to imply that the ego is, over time, constituted by multitudes of meaningful lost others, each of whom remains part of oneself even as the original individuals have died.

Perhaps the most important issue relevant for the study of Human-VDI interaction raised by psychoanalytic perspectives on mourning would be whether the VDI facilitates or complicates mourning. The overview on mourning and melancholia does not offer any definitive answers, but instead points towards ambivalence: the lost loved one is permanently gone, yet some traces remain. Normally, these traces would remain internal; in the early formulation of melancholia, the goal would be to achieve total detachment from those traces and new investments in other life experiences, while in the posterior formulation, the goal would be to internalise those traces within the mourner's self. Yet the VDI externalises them and gives them agency, an agency that might not be dissimilar to that of the original individual, depending on the technical capacities of the artifact through which the VDI recreates the deceased individual.

Though empirical examination of what occurs in actual practice of Human-VDI interaction is needed to see what occurs, it is possible to imagine two outcomes. The first one is a complication of mourning, precisely because the externalisation of the other in the form of the VDI again aims to achieve an individuated identity, unencumbered from the lost loved ones and past losses. The other is that a comparison of the VDI to the real person results in the acknowledgement of the fundamental differences between the two, with the internalisation being maintained and the VDI instead being used more as a repository of the information of the deceased, with thoughts and ideas the original individual had being delivered through interaction instead of looking through an object like a diary or a photograph album. In this latter case, mourning ensures that the bonds with the deceased endure despite the presence of the VDI, which serves another function for its human interlocutor.

A related but ultimately different issue is how the VDI influences the investment of affect in new life experiences. By either the severance (in Freud's first formulation) or internalisation (in Freud's second formulation) of the attachment to the deceased, the living can reinvest themselves in new life experiences and new relationships. But having a VDI as a recurring reminder of the deceased might orient the living to invest more in that relationship as a continuing bond, even though it is static (the VDI does not evolve, as it has no conscience), because the VDI is constituted by the relational component of the original individual. The implications of this are likely to be varied according to each person who engages in interaction with a VDI and their relationship with the original individual, but it is possible to speculate that reliance on the VDI as a possible source of affective stimuli might discourage the human interlocutors to explore forming new life experiences.

3.1.2.4   Discourse theoretical insights

Discourse theoretical insights related to mourning incorporate ideas from sociology and psychoanalysis and suggest the concept of mourning is not tied only to specific material aspects but to discourse's radical contingency. That is, discourse theoretical insights suggest that when one undergoes the mourning process, what is being mourned is a discourse which has been disarticulated and re-articulated or replaced by a new hegemonic discourse. This occurs both at the individual and at the collective level, although in practice such separation would mostly be fictional, as discourse constitutes human subjectivity by default at both levels, even if tensions between these two may arise. Insights from Post-Marxist discourse theory are useful in identifying what stance a subject takes in relation to a discourse, and whether he/she is aware of its radical contingency and is capable of change. This presents issues in relation to Human-VDI interaction, as the VDI may conceal discourse's radical contingency or, contrary to expectations, reveal a discourse's limits and guide a subject towards change.

Some theoretical clarifications are needed to see why this is the case. Glynos (2001; 2008; Glynos, 2014) argues that *fantasy* and *fantasmatic elements* in discourse help subjects keep anxiety at bay by concealing its radical contingency. As has been described, the Logic of Fantasy provides a narrative structure to discourse and defines its contours, while fantasmatic logics (the LCE methodological approach's operationalisation of the Logic of Fantasy) naturalise discourses by hiding their contingent nature and generate

affective investment in them. Discourse's social ontology has two dimensions which specifically relate to fantasy: the *ethical dimension*, when radical contingency in discourse is confronted directly by the subject, and the *ideological dimension*, where the subjects are complicit in avoiding a direct confrontation with radical contingency in discourse. The disruption of the subjective experience of discourse by an event or perturbation is referred to as *dislocation*. In other words, dislocation makes subjects become aware of the radical contingency of their fantasy life, which can then trigger efforts by the subjects to reconstitute their fantasy life in ways that create distance between them and their anxiety.

The prospects of death or the actual death of others can be considered instances of dislocation, insofar as they highlight discourse's radical contingency. As discussed previously, following the death of a loved other a process of memory recollection follows, with such a process allowing the survivor to distinguish between the actual person and the role the deceased played in the survivor's life. For Glynos (2014), this means that mourning the loss of someone is about mourning the loss of attachment to the materiality underlying the symbolic systems in which the deceased played a significant role, shaping the social relations and fantasies of their loved ones. In other words, mourning implies achieving a conscious awareness of how the lost other played a role in constituting a human subject's discourse. Mourning, then, makes conscious those unconscious relations and identifications, leading the survivors to face the fact that the identificatory support the deceased provided in their fantasy life is gone forever. The implication of this is that mourning the loss of someone becomes fundamentally about mourning the loss of both that part of themselves which was affectively invested in the deceased and the underlying guarantees the deceased provided.

Glynos (2014) emphasizes that the *ethics of mourning* entails facing head-on the radical contingency of social life. Mourning demands work on the part of the subjects that renders them attentive to the radical contingency of discourse, which can cause anxiety. This attentiveness allows subjects to bring elements of their fantasy life to the conscious level. Blocked mourning, in contrast, would lead the subjects to flee from anxiety and remain unconsciously overinvested in their fantasy life, the same fantasy life which gives structure to discourse and grounds them in it. A mourning journey which is successfully completed, meanwhile, would involve a successful detachment from the fantasy life that was enabled by the deceased and, consequently, a successful detachment from discourse.

Although Glynos' concept of the ethics of mourning is more clearly influenced by Freud's first formulation of mourning, the one laid out in *Mourning and Melancholia*

(1957), he explicitly rejects the idea that complete detachment from a previous fantasy life and its associated discourse should be sought. Instead, he asserts: "Mourning, as an ethical response, demands the subject find a way to make loss part of one's life in a way that acknowledges rather than represses it" (Glynos, 2014, p. 146). In this sense, he recognises the development of Freud's theory of mourning as suggested in *The Ego and the Id* (1961) and reaffirmed by Clewell (2004). This would mean critically engaging with those identificatory supports that the deceased embodied, which might come in the form of ideals, principles or affects, without necessarily abandoning them. Hence, mourning here would entail recognising their contingency, critically examining their influence and either affirming them or moving on without ignoring the grip they once held.

A crucial aspect to consider is that, because mourning is both an individual journey and a collective affair, and a human subject's mourning process is affected by both individual and collective factors, a critical interrogation should proceed to determine if there are conditions, perhaps hidden, that may lead to a blocked or complicated mourning. Previous research has argued that discourse, manifested via institutional power and social norms, may complicate mourning for a variety of reasons, ranging from ensuring the implementation of public policies to preventing the articulation of counter-hegemonic struggles (Gibson-Graham, 2006; Özselçuk, 2006; Glynos, 2008; Hurtado, 2016; West and Glynos, 2016). In consequence, identifying sets of social practices and how they respond to discourse (i.e. how they are governed by social, political and/or fantasmatic logics) is key if mourning is to be carried out ethically. For this, a critical engagement must take place in two planes: the normative one, where contestation of the norms of a practice that undermine the value and role of mourning in the lives of individuals and communities is central, and the hegemonic one, which identifies and constructs, through a process of hegemonic struggle, the agents and interests affected by the prospects of transforming those norms (Glynos, 2014, p. 155). For successful mourning to occur, Glynos further identifies two conditions to be met: the first being the event or site that enacts a publicly shared recognition of loss, and the second being an appropriate context within which loss can be processed (Glynos, 2014, p. 144-145).

Discourse theoretical insights complement those of the psychoanalytic perspective insofar as they point to how human subjectivity is constituted by discourse and how discourse itself may complicate mourning. Human-VDI interaction, if seen through a discourse theoretical lens, may be part of a Post-Mortalist discourse where developments in technology aim for mastery over death. In other words, within this discourse a fantasy of

immortality shared in the network of social relations would be reinforced by developments in technology. Interacting with a VDI, for example, would reduce anxiety from the dislocation caused by the death of the original individual which the VDI mimics. At the same time, however, it might block the process of recollection and critical examination of the identificatory supports the original individual played in the lives of his/her surviving network of relatives and friends by allowing them to bypass the acknowledgement of his/her absence. This might be, for instance, if a VDI is discursively constructed as a "replacement" or a "substitute". If, in contrast, the main meanings associated with the VDI are those of a technological artifact (e.g. "machine" or "programme") that are considered helpful only under certain circumstances, then mourning is not necessarily blocked by emerging practices of Human-VDI interaction.

Preliminarily, it can be stated that how much the VDI is used, the circumstances under which it is used, and the technical capabilities of the VDI will be critical for whether mourning is carried out ethically or not. A VDI that replicates quite faithfully the mannerisms of the original individual and manifests itself in ways the original individual would have (text, audio, video and physical presence, for instance) would likely contribute to overinvestment in the human interlocutor's fantasy life and, in consequence, remain unaware of a discourse's radical contingency. If, however, the VDI is limited in its technical capacities and/or is visibly the result of software and its possible combination with hardware, the contrast between the VDI and the original individual would only be stronger. In any case, it is likely that, for the time horizon envisioned in this thesis, the VDI would fall somewhere in between these two descriptions. How much it is used and under what circumstances will likely reflect cultural and institutional norms, as well as legal standards and broader societal transformations.

3.1.3   Conclusion to Death Studies sub-section

The insights from these disciplines within the Death Studies field provide theoretical grounds for the study of social practices of Human-VDI interaction and its possible futures, in terms of how such a phenomenon might be a manifestation of human beings' attempts to find meaning and continue living in the face of death, and in how they deal with the loss of those meaningful others.

It is clear that, as the Virtual Deceased Individual is conceptualised in this thesis, it cannot be a way for actual immortality in terms of phenomenological experience. It, in-

stead, might emerge as new ways to maintain contact with the dead in the form of ancestors and to gain a symbolic form of immortality, as suggested by the anthropological insights. This field also suggests that, similarly to how mortuary rituals are present cross-culturally but culturally variable, something similar might happen with the VDI in complex societies driven by the goals of modernity. It also lays the theoretical foundations for how death and rituals revolving around death are socially and culturally constructed. More generally, as seen from both the anthropological and the sociological perspective, interaction with the VDI might constitute a social practice that mitigates the fear of death and orients the living away from death and towards life. This is grounded in the fact that talk and bodily communication operate as small everyday rituals that give a sense of stability to life.

Sociological insights might point as well to some of the underlying forces behind the decision to create virtual copies of the deceased, such as creating the VDI being both a practice of generativity that allows its use in interaction for guidance of the next generations. It might also limit the disruption of death in institutional settings and might be a mechanism in which to achieve symbolic immortality within an imagined community. More importantly, however, sociological insights point to the fact that the VDI and the desire to create such a technological artifact are embedded within the aim of modernity of achieving mastery over nature, and more specifically, mastery over death. Finally, the notion of the Death-constituted society – i.e. any society in which social and cultural life orients people towards life-sustaining activities to protect them from death and its meaninglessness – was addressed, and works as a conceptual background in which all activities and practices are performed.

Discourse theoretical insights, for their part, point to the fact that discourses on death are radically contingent, articulate different elements which emphasise different aspects of death and dying, and are never universal but contextually specific. Practices surrounding death and dying are governed by discourse, specifically by social logics, which are supported by fantasmatic logics and challenged or defended by political logics. Discourse theory also pointed to the hegemony of some discourses and the marginalisation of others. In the context of studying Human-VDI interaction, discourse theoretical insights are useful for identifying how such a practice is discursively constructed (i.e. what signifiers and meanings are attached to it), and also point to the fact of underlying conflict in a hegemonic struggle, with discourses favouring immortality possibly leading to the emergence

of the VDI, and discourses favouring mortality posited to be in opposition to the emergence of such a device and the practice of interacting with it.

As for mourning, sociological insights provided ideas on distributed personhood, with the relational component of a person in the digital era becoming a digital persona. The VDI would, in a sense, be another manifestation of the relational component of a person, also building on the technological persona left behind by the deceased. The VDI could, at the very least, be considered some form of memorialisation for those who have died, while more advanced forms would lead to the emergence of ontologically new relationships. This is complemented by the view on continuing bonds from psychology, which focus on an ongoing inner relationship by the bereaved with the dead. An interesting aspect to consider in light of the VDI is that such a relationship is limited because the VDI cannot change. As such, any change in the relationship would be the result of changes undergone by the VDI's human interlocutor.

Finally, the psychoanalytic and discourse theoretical perspectives on mourning complement each other as well. Psychoanalysis highlights two different approaches to mourning: one in which detachment from the deceased is needed in order to form new attachments in life, and one in which the lost loved one is internalised into the ego, forever becoming part of one's self. Discourse theoretical insights point to the fact that mourning can reveal the radical contingency of discourse and fantasy life, whereas complicated mourning remains invested in the fantasy life that was enabled by the deceased. For ethical mourning to occur, then, an acknowledgement of the radical contingency of discourse and fantasy life must take place following the death of a loved one. In the context of Human-VDI interaction, two possibilities emerge: one in which the VDI conceals discourse's radical contingency and leaves the human interlocutor invested in the previous dynamic with the deceased individual, without acknowledging the death event; and another where the differences between the VDI and the original individual lead the human interlocutor to critically engage with the identificatory and material supports the deceased provided, revealing the radical contingency of discourse and allowing the mourner to either affirm some values and ideals once embodied by the deceased or move on from them and affirm new ideals and values.

In sum, theoretical insights from the Death Studies field enable the researcher to understand the reasoning and motivations behind the decision to engage in Human-VDI interaction or avoid it in the images of the future constructed depicted in this thesis. Similarly, it facilitates the contextualisation of social practices according to certain historical

and cultural contexts, with the VDI being part of modernity's project to achieve some form of mastery over death and an associated desire for immortality, but arguably also revealing the human need to mitigate the fear of death and have support from his/her ancestors. For the empirical analysis, this allows the researcher to understand the deeper aspects driving the emergence of the social practices of Human-VDI interaction unfolding in the images of the future. Finally, insights from psychoanalysis and discourse theory point to how mourning might take place or may be blocked, as well as the challenges to human subjectivity involved in Human-VDI interaction. These insights are helpful in characterising the different images of the future at the core of this thesis as either facilitating or complicating death acceptance and mourning.

3.2 Interaction Studies and the constitution of social life: insights for technologically mediated futures

The field of studies here referred to as Interaction Studies encompasses a number of different disciplines, though the focus adopted here is mostly that of sociology, specifically microsociology. However, other disciplinary approaches, such as psychology, social psychology, and Human-Computer interaction complement the sociological approach that is predominant in this thesis. The reason for the more overt focus on sociology than on the other disciplines derives from the fact that a sociological focus on social interaction is able to address social structural pressures. Moreover, this sociological focus facilitates the linkage between more abstract and macro-concepts, such as discourse, worldviews and cultural metaphors, and the analysis of specific social phenomena without delving into the complexities of the individual human mind, where sensory systems and life experiences need to be carefully considered. Perhaps most important from the field of interaction studies is that it illustrates the social construction of the social world in everyday activities (Berger and Luckmann, 1966; Schütz, 1967), which supports the same perspective as those presented in the Death Studies sub-section.

In another sense, Human-VDI interaction, as the phenomenon studied via images of the future, has social interaction as a central concept. As this sub-section describes, interaction is the micro-unit of analysis for sociology, and works as a mediator of some inner aspects of the human being and the surrounding social world. It can also be said to be the foundations for the macro-level social structures, even if the latter are ultimately not reducible to interactions. The VDI, however, presents certain challenges to understand from a sociological perspective, given that one of its interactants (the VDI) is not self-aware.

In fact, it is not even a living entity. As such, parallels between normal human-to-human interaction and Human-VDI interaction are not to be made carelessly. This is why insights from the Human-Computer interaction discipline are discussed in relation to expected Human-VDI interaction and its dynamics. A final consideration is that, because Human-VDI interaction is not a phenomenon that currently exists in a way that would qualify as similar to human-to-human interaction, it is necessary to examine both what a posthumous interaction and an imagined interaction are, and how they relate to both actual interaction and mind processes. In reality, the data gathered for this thesis does not reflect actual but imagined Human-VDI interaction, which would in nature be a form of posthumous interaction. This makes it necessary to address those concepts.

This sub-section of the thesis first reviews some fundamental insights on interaction between humans and the different elements that constitute an interaction. This, in turn, is contrasted with how interactions could be developed in relation to the VDI, and the parallels are identified. Next, considerations of Human-Computer interaction, specifically those related to interaction with robots, will be discussed. This does not mean that a VDI would necessarily have to be robotic in a strict sense, but the insights from that field are relevant insofar as they provide a glimpse of the potential and limitations of interaction with complex software that might or might not have a physical manifestation. Finally, the concepts of posthumous and imagined interaction are described. The concept of posthumous interaction is described, as such a concept captures the central idea of what would be happening with a VDI: an interaction between living people and data from dead people. In turn, the notion of imagined interaction is discussed in order to clarify the ontological nature of the data gathered for and examined this thesis.

3.2.1 Social interaction conceptualised from a sociological perspective

Social interaction can be considered the most basic unit of sociological analysis, given that interaction is the foundational element in the social organisation of individuals. Although there have also been conceptualisations of social interaction at society and culture level (Sêga, in Carvalho Pereira and Maciel, 2013), the level of analysis of social interaction in this thesis is the microsocial level. In this level, discourse, emotion and social structure converge and are expressed in social interaction (Goffman, 1956; Goffman, 1967; Scheff, 1990; Turner, 2002). As a constitutive element of social organisation, social interaction can also be said to form part of society's mechanisms to orient its members away from death and towards life (Seale, 1998). However, given the way interactions

have been modified by new developments in technology and the way technological arti-
facts have to consider elements from the social structure as well in their development
(Sassen, 2002; Klein and Kleinman, 2002; Leite et al., 2013; Sonia and Brangier, 2013),
one can hypothesise that interactions with the VDI will both have some basic similarities
to human-to-human interaction and some significant differences as well, and whether they
are useful in orienting its living interactants towards life is still an open question. More-
over, these interactions may themselves become new social practices across different
spaces, institutional contexts and cultures. As such, reviewing the fundamental insights
of interaction theory from a sociological perspective is needed to adequately assess (how-
ever tentatively and preliminarily) what the dynamics in Human-VDI interaction and its
consequences would be.

Social interaction from a microsociological perspective has been more thoroughly
conceptualised by Jonathan Turner, whose insights from *A Theory of Social Interaction*
(1988) also form the framework for how social interaction is conceptualised in this thesis.
He defines social interaction as "the overt process whereby the overt movements, covert
deliberations, and basic physiology of one individual influence those of another, and vice
versa" (Turner, 1988, p. 14). Although he recognises that social interaction is mostly ex-
amined from a symbolic interactionist perspective in sociology, he nonetheless claims
that its basic features follow some law-like pattern and, in consequence, can be studied in
a comparable way to natural phenomena. For that reason, he suggests a sensitising scheme
to study, from a micro-level of analysis, the dynamics of interaction.

Turner's theoretical model of social interaction consists of three separate, albeit in-
terrelated, processes: motivational, interactional, and structuring, each of which he argues
has its own theoretical model and comprises its own set of processes that, in the end, link
to the other two and constitute an instance of social interaction. *Motivational processes*
refer to the various ways and the varying degrees in which individuals mobilise their en-
ergy to engage with others in shared activity. *Interactional processes* are defined as the
actions and reactions of individuals when they influence each other's behaviour. Interac-
tional processes, as their name suggest, constitute the dynamics of a social interaction and
involve the controlled operation of human's behavioural capacities, such as signalling
course behaviour while interpreting behavioural signals from all parties involved. Finally,
structuring processes point to the fact that social interactions occur over time and are
organised in physical spaces. The three processes integrate in the following manner:

"*Just how people signal and interpret is related to their motivational energies; in turn, motivation is circumscribed by prevailing structural arrangements as well as by the course of signalling and interpreting; and the structure of an interaction is very much determined by the motivational profiles of individuals as these affect their signalling and interpreting activities*" (Turner, 1988, p. 16).

A more in-depth look into each of the processes of Turner's theoretical model of social interaction is needed to see which are more relevant for Human-VDI interaction. Of the three categories of processes, motivational processes are probably the ones that show the most discrepancy between human-to-human interaction and Human-VDI interaction. In motivational processes, gratifications and utilities are the primary motivations behind individuals' decisions to engage in interaction. When there are prospects of rewards or utilities and of costs and punishments, individuals are energised to behave in such a way that they obtain the former and avoid the latter. Important sources of gratification for an individual and which are exchanged in interaction are approval, prestige and power. Furthermore, expectations related to self-affirmation during an interaction are, whether consciously or unconsciously, powerful motivational drivers that lead individuals to interact with each other (Turner, 1988).

For Human-VDI interaction, it is possible to draw some preliminary conclusions based on the definition of the VDI used in this thesis. Because the VDI is not self-aware, the VDI would not have any inherent motivation, at least not as a living entity (this, however, can be coded to some degree as part of its algorithm). Any motivational process in the interaction would be mostly related to the human interlocutor. The VDI would, in principle, not be interested in approval, prestige or power in any real sense of those words due to its lack of awareness. However, for the human interlocutor, these motivational processes *do* apply. How this discrepancy between the VDI's lack of inherent motivation (the algorithm of the VDI may contain code which gives the appearance of motivation or operates as simple motivational components, but such motivation cannot, in principle, be as complex as that of human beings without crashing the algorithm)[9] and the human interlocutor's motivation is resolved would need to be evaluated in light of the specific

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[9]   This is manifested in the sometimes contradictory and unexplained ways human beings behave yet still go on with their lives. This is an insight from psychoanalysis, in which contradictions and sometimes opposing forces of the unconscious are constitutive of human subjectivity. This cannot be manifested in an algorithm, as attempting to code it would most likely result in the algorithm failing to execute its programme properly.

motivations of the human interlocutor and how adept the VDI is at prompting, managing and responding to those motivations from its human interlocutor.

Both the interactional processes and the structuring processes in Human-VDI interaction are more similar than dissimilar to those in human-to-human interaction. Turner identifies a number of elements that become activated during interactional processes. He borrows from George Herbert Mead (1934) the concepts of "mind", "self", "role-taking" and "generalised others". Mind provides the interactants with the possibilities to imagine different alternatives for conduct, to visualise and project the consequences of choosing one of these alternatives, and to understand the meanings of cues from the other interactant. According to Turner, mind has causal effects for other interactional processes (Turner, 1988).

The concept of self refers to the behaviour displayed as a result of each of the interactants perceiving themselves as objects in situations and encounters. For Turner, self is both a structure that transcends specific situations and a series of transitory images that manifest themselves in each interaction setting. As such, Turner argues that the self, having this duality, is an "enduring configuration of attitudes, dispositions, definitions and feelings about oneself that selectively filters the self-image in concrete situations" (Turner, 1988, p. 103) and while the self is built of the transitory images of the different interactions held over time, it becomes structured and is reflexive in nature. Self is central to interaction because people aim to sustain their self-conception during an interaction, which makes their signalling behaviours conditioned by "relatively stable configurations of self-referencing attitudes, dispositions, definitions, feelings and meanings" (Turner, 1988, p. 104).

Role-taking is, in Turner's view, essential to any conceptualisation of interaction, given that it involves the capacity to discern gestures which establish common meaning in an encounter, enables the interactants to interpret their significance and visualise the likely course of behaviour from each other, and sense hidden dispositions and attitudes from the other side. This is complementary to the concept of "generalised other", which is a perspective that frames an encounter with others and is both imposed upon and emergent from an interaction. Frames are rather rigid in nature, as individuals invoke them to orient themselves in an interaction and stay attuned to relevant dispositions, feelings, meanings and attitudes. These, however, are supplemented by abstract frameworks from their own personal experience (Turner, 1988). A generalised other, or a frame in an interaction, thus works to define the situation the interactants find themselves in (Goffman,

1956; Goffman, 1967; Turner, 1988). Although not explicitly discussed by Turner, it is likely that these frames also present cultural variability, as what in some cultural settings might be interpreted as a welcoming or friendly disposition, in other settings it might be considered offensive.

The concepts related to interactional processes are likely to be all present in Human-VDI interaction, albeit with some substantive differences. Mind would be present in the human interlocutor, but would be mostly absent from the VDI, with the exception of being able to understand the meaning of cues from its human interlocutor (this is assuming the VDI is takes some form of embodied manifestation that is able to interact with the physical world). The other features of mind would be absent because the VDI, as established, is not conscious nor self-aware. For this reason, self would also have substantive differences when conceptualised in relation to the VDI. The VDI's self would only be structure, as it would only be performing the role of the deceased individual as understood by its human interlocutor. It would represent a static version of the deceased at a certain moment in time. As such, the transitory aspect of the self would disappear, leaving only the structure of self. Role-taking would also change, as the role would be fixed in a VDI and, due to its lack of imagination by virtue of being software and not a living being, would not be able to visualise the likely course of behaviour of its interlocutor beyond the immediate response. The element in interactional processes that would most likely remain without much substantive change for the VDI is the generalised other/frame. In this case, as part of the design of the VDI, a frame would be built-in that allows the VDI to recognise its main interlocutors (in this sense, it would be a personal frame) and act accordingly. Otherwise, it would likely adopt a generic frame, although again this would depend on the technical features of a specific VDI.

Though structuring processes are constituted by six different conceptual processes – categorisation, regionalisation, normalisation, ritualisation, routinisation and stabilisation of resource transfers – only categorisation, regionalisation and routinisation are described, as only these are relevant for the purposes of Human-VDI interaction, with the rest only being possible as a result of self-awareness and inherent desires that are absent from the VDI.[10] Categorisation is the first conceptual process, and is the one most directly linked

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[10]   It would seem that this approach is dismissing the relevance of these concepts for the human interlocutor of the VDI. Such an argument could be made, but my view here is that normalisation, ritualisation and exchange of resource transfers do not play a role in interaction for the human interlocutor because they require a conscious interlocutor who desires to gain something in an interaction. Again, although some motivational aspects could be coded into the algorithm of the VDI, it is highly unlikely that

to the interactional process of generalised other / frame. Whereas a generalised other might emerge during the course of an interaction or might be assessed in the moment in which an interaction takes place, it is the category that is called upon and relied on once this assessment is done. A category, then, is a structure that is mutually agreed upon (whether in the moment or by relying on previous situations and on cultural references) and provides the definition of a situation. Social actors carry these categories in their stocks of knowledge, but for Turner, there is no reason to presume there are a limited number of categories. Instead, he argues that categories are of a general kind that are then fine-tuned according to the specific situation. Importantly, however, is that categorisation process is done not only in relation to the situation but also in relation to individuals, which are seen as representatives of categories of persons (Turner, 1988).

Regionalisation as conceptual processes, in contrast, are mostly independent from previous elements of interactional processes and motivational processes, but provide fundamental inputs which the interactants must grapple with. In other words, while there are few effects on regionalisation processes from both interactional processes and motivational processes, these two are affected by regionalisation. Turner borrows Goffman's (1956) ideas on the ecology and demography of interactions to state that structuring processes are highly influenced by elements such as the physical settings in which the interaction occurs, the physical props that exist, how objects place constraints on the movement in a given space, the number and distribution of individuals across the physical settings, and the movement of people within this space. The ecological and demographic forces at play in an interaction, which constitute the regionalisation processes, circumscribe the dynamics of an interaction, as these forces constrain what can be considered appropriate lines of conduct by the interactants (Turner, 1988).

If regionalisation processes focus on space and elements (both human and non-human) within that space, routinisation processes as part of structuring processes focus on time and its relation to space. According to Turner, "social structure depends upon 'habits', or routinised behavioural sequences where, without great mental and interpersonal effort, actors do pretty much the same thing in time and space" (Turner, 1988, p.163). These behaviours become routine, customary and habitual for all the parties involved.

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these have the same force as those of a real human being. In a sense, the VDI would mostly work to fulfil the wants of the human interlocutor, having no inherent needs itself. Another reason why these aspects are not addressed is that, for the purposes of this thesis, aspects of ritualisation and routinisation are better covered by the focus on the rituals and routines related to death and mourning as part of social and cultural activity than those of interaction in abstract.

Moreover, they are also punctuated by rituals. The customary nature of these behavioural sequences gives a degree of predictability to an interaction (Turner, 1988).

Structuring processes of categorisation, regionalisation and routinisation in Human-VDI interaction would arguably be the most similar to human-to-human interaction. In Human-VDI interaction, categories would mostly be predetermined, and would in most cases consist of a personal category that establishes the personal relationship between the VDI and the human interlocutor, and a general category for any person who is not one of the intended human interlocutors. Even in institutional settings, the categories would be predetermined by design but allow for certain improvisational movements, so the VDI would have more flexibility to adapt to different contexts (the information of which would already be part of its algorithm). Categories, in a sense, are also the concept which link the microsocial processes of interaction with the macro level concepts like discourse and social structure. Certain discursive constructions might manifest themselves via categories, which then contribute to define (at least in the beginning) the meaning of an interaction. In the context of Human-VDI interaction, general elements of such discourses could be coded into the algorithm of the VDI, and would constitute the general category and the improvisational part of the personal category that is activated when the VDI interacts with its human interlocutor. Similarly, these discourses, when viewed as constitutive of the algorithm of software-based entities such as the VDI, would be what enable these technological devices to attribute meaning to the verbal expressions (and, to some extent, corporeal expressions) of its human interlocutor.

Regionalisation and routinisation may or may not appear in any given VDI, depending on the specifics of its technical capabilities. Assuming an advanced VDI that is able to interact with elements of the physical environment and is not limited to software settings unable to be modified by the human interlocutor, regionalisation and routinisation processes would also need to be coded as part of the algorithm of the VDI. With regionalisation, the VDI would not only be able to navigate in certain physical spaces and perceive its properties, but also engage in meaningful interaction with these elements. It can be hypothesised that regionalisation processes would enable the VDI to understand the meaning of the physical settings it finds itself in, and in consequence facilitate an appropriate response from it, such as casual or comforting responses if in a private setting or formal or authoritative responses if in an institutional setting. Similarly, with routinisation processes as part of its algorithm, the VDI could engage in interaction that continues rou-

tines the human interlocutor had with the original (now deceased) individual if programmed in such a way. Alternatively, the VDI's algorithm could be designed in such a way as to avoid routinisation processes and only become activated in special, significant or urgent circumstances. In any case, in advanced VDIs, both regionalisation and routinisation processes have a role to play.

Turner's (1988) interdisciplinary perspective to building his theoretical model of social interaction presents a real strength, as it illustrates that apparently simple and basic phenomena such as social interaction between individuals are actually quite complex and require that both interactants share the same social construction of the world, their surrounding environment and a compatible discourse. Moreover, his interdisciplinary approach to conceptualising social interaction supports the interdisciplinary approach taken in this thesis: if human-to-human social interaction requires interdisciplinary analysis and conceptualisation, Human-VDI interaction would require even more disciplines and theoretical insights from different fields of study to be involved in its analysis.

To summarise the insights from social interaction as conceptualised from a sociological perspective and its relevance for Human-VDI interaction, it can be said the three processes – motivational, interactional, and structuring – that constitute social interaction appear in some form or another in Human-VDI interaction. Motivational processes are most relevant for the human interlocutor, although some basic motivational processes can be part of the VDI's algorithm. Interactional processes are more applicable to both the VDI and its human interlocutor, even though the substance of some central concepts of interactional processes – mind and self – would differ when the VDI is the point of focus, as the VDI lacks consciousness and self-awareness. Particularly when it comes to the self, the self in display by the VDI is pure structure, deprived of its transitory components due to the fact that the VDI would only consist of the relational component (the digital persona) of the original individual. Nevertheless, the relational component would likely be the one that links the VDI to its expected main human interlocutors, and not just a relational component in the abstract. The structuring processes discussed – categorisation, regionalisation, and routinisation – seem to be the most similar for the human interlocutor and the VDI, with these being likely coded in the VDI's algorithm similarly to how they are stored in the stocks of knowledge of living human beings.

With these considerations of the similarities and differences between human-to-human interaction and Human-VDI interaction, it is possible to foresee that, while interact-

ing with a VDI could still be limited by a low-level of sophistication of the VDI's algo-rithm, the evolution in creating socially successful algorithms (Augello et al., 2016) could lead to VDIs displaying convincing motivational, interactional and structuring processes that allow them to perform successful social interactions with human interlocutors. If this is the case, then despite the lack of human traits such as imagination and self-awareness, the social skills of a VDI would be quite advanced and Human-VDI interaction could indeed be considered social interaction.

3.2.2   Interaction between humans and social algorithmic entities

Given the expected differences between human-to-human interaction and Human-VDI interaction as described above, some insights related to the interaction between humans and social algorithmic entities are needed. An algorithmic entity is any kind of identifiable unit which performs one or more algorithms autonomously (that is, without human in-volvement)[11], but in this thesis a social algorithmic entity is defined as that which is able to interact *meaningfully* with human beings and other elements in their environment. In this sense, a social algorithmic entity could be anything from a pure software agent within a videogame which performs actions without involvement from the human player to a cleaning robot. Taking this definition as a starting point, the way a human being interacts with some embodied social algorithmic entities (that is, one which takes any form of em-bodiment recognised by human beings) should be examined to identify relevant factors that affect the way the interaction unfolds. The review will be centred mostly on human-robot interaction, with some robots being instances of social algorithmic entities, although it will be complemented with some insights from interaction between humans and other forms of social algorithmic entities.

In their study of domestic robots, Young et al. (2009) reason that subjective consumer expectations of what robots are, how they work and of their technical capabilities and limitations condition the extent to which robots are treated as social entities. More im-portantly, however, they point to the fact that the way these elements are understood re-quire a thorough understanding of robots' embeddedness within social interactions, insti-tutions and hierarchies. In that sense, the authors' arguments support the sociological ap-proach to social interaction, as they believe that expectations on robots' social nature are

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[11]   This definition, however, is not universal, with the term varying from the definition given here which is a more technical definition to the definition that grants some specific forms of algorithms legal rights and responsibilities. For this second definition, see LoPucki (2018).

shaped by the context in which the interactions take place. In particular, interactional and structuring processes would seem to play a more prominent role in shaping the expectations of people regarding the social nature of robots, as the first would allow for a display of behaviours that would make the robot appear to behave socially and the second would enable it to navigate through social situations and contexts with some degree of competence.

Robots, by virtue of their embodiment and the fact that they occupy a physical space, make them a good proxy for advanced forms of VDIs, which would be expected to recreate human features more closely than less advanced forms. Young et al. (2009) argue that robots' capacity to display varying degrees of autonomy and intelligence, coupled with the fact that they can react and physically alter spaces also inhabited by people make users respond to them as if they were living entities. However, their non-human nature and the medium of communicating with them also requires that users learn new interaction styles, such as delivering specific voice commands or interacting with them via remote controls or software-based interfaces.

What specific meanings are associated to robots are, however, not only conditioned by their technical capabilities and their embodiment, but also by social activity and cultural background (McNally and Inayatullah, 1988; Bijker, 1993; Bijker et al., 2012). Meaning in relation to technology is partially created by how people think they are supposed to interact with a specific technological device, as well as how it will (or should) be integrated into their lives. These expectations are constituted throughout time by personal history, education and age, but also by shared social and cultural frames, which are in turn affected by issues of gender, class, the specific institutional structures of a society and the communication mechanisms available. Hence, although individual experiences with technology can affect a person's disposition towards specific technological devices, more broadly it can be stated that "technology has a socially-embedded meaning in the sense that how an individual shapes his or her understanding of a technology is directly linked to evolution in prevailing social attitudes" (Young et al., 2009, p. 97).

The study of Young et al. (2009) highlights the role of theoretical insights from social psychology in providing tentative interpretive schema for making sense of human-sociable robot interaction, which to some degree can be applicable to Human-VDI interaction as well. The most important theory for this research is the Theory of Planned Behaviour (TPB) (Ajzen, 1991; Madden et al., 1992). TPB posits that control over a technological artifact and the perceived safety of using it are the main drivers for adoption.

Crucially, Young et al. (2009) consider a decisive factor to be the intersection of users' skill sets and the perceived required skills to operate a robot, with matches between both encouraging adoption of a technology. What is considered safe or not varies according to the intended purposes of the robot and the form it takes, with larger robots on which the human is dependent often being considered less safe in relation to smaller robots that do not interfere with human activities.

When relating this to Human-VDI interaction, the match of actual skill sets and perceived required skill sets might not be an issue, considering that behaving in a humanlike manner is one of the goals of the VDI. As such, having a skill set that allows communication between humans either in physical presence to each other or via some technological medium is likely to be present in most potential users, and applicable without many changes to interacting with a VDI. However, whether the VDI can physically interact with the human interlocutors or not might be one of the most contentious issues. If it can physically interact with the human interlocutor and its surroundings, then it is likely that it can mimic more closely the original individual whom it is based on. However, a robot replica of the deceased individual might also pose some danger to the human interlocutor's safety in case of malfunction, or at least generate the impression of potential danger. As such, pure software-based forms might be considered safer and, in consequence, potential users might be more willing to adopt them or try them out.

Given that the study of Young et al. (2009) provides insights about how people behave around sociable robots, which have physical embodiments, the behaviour of people around social algorithmic entities which do not have a physical manifestation needs to be addressed as well. In the case of pure software based social algorithmic entities, human behaviour to them responds to whether they exhibit humanlike behaviour. In the case of social bots on social networking sites, early bots were easily identifiable as non-human algorithmic entities, and once it became habitual to spot their characteristic behaviour, discerning users of social networking sites mostly ignored them. However, these have increased their sophistication in the last decade, with some of them being able to "engage in more complex types of interactions, such as entertaining conversations with other people, commenting on their posts, and answering their questions" (Ferrara et al., 2016). In these cases, the difference between a human being and a social algorithmic entity becomes blurred, and it can be argued that the capacity to distinguish one from the other is diminished because the interactions in social networking sites are deprived of common features of human interaction where the interactants are in physical presence with each

other. Specifically, the lack of any discernible form of embodiment and unique voice and speech patterns which could be easily identifiable in physical interaction are absent in most habitual forms of interaction within social networking sites.

Neff and Nagy (2016) argue that technology users' power of imagination is fundamental, with people ascribing disembodied social algorithmic entities rationality and human features: "users often assign agency and personality to chat bots, at least until the algorithms behind chat bots make notable social gaffes" (Neff and Nagy, 2016, p. 4927). Borrowing on Scheff's (1990) ideas on talk and bodily communication and ritual, it is possible to see that the ritualistic element of social interaction which provides a constitutive and structuring effect of societal dynamics is weakened by the disappearance of elements of talk and of bodily communication when interacting with basic forms of social algorithmic entities, as text-based communication is the most prevalent form of interaction (at least in the present). The sense of inclusion in the rituals of everyday talk and bodily communication is weakened as well, with elements of disruption becoming more noticeable when the social algorithmic entities malfunction. In other words, absent the characteristic human features when interacting in a virtual medium, close mimicry of human behaviour by social algorithmic entities becomes more relevant, with errors in the algorithms' output which are expressed as behaviour generating a greater sense of disruption and bringing to light the differences between the human beings and the social algorithmic entity.

The possibility of moments of disruption derived from errors that break the illusion of interacting with another human being suggest that social algorithmic entities without characteristic human features such as embodiment and voice are likely to be considered by the users as technological artifacts and not living entities. This supports the idea that less humanlike forms of the VDI, such as pure software which lack features associated with human beings, might be considered technological artifacts as well by its human interlocutors. The interaction with them would probably adjust accordingly, with an underlying awareness that the VDI is neither a living entity nor the deceased individual it mimics changing the human interlocutor's behaviour towards it.

To recapitulate, the insights from the studies centred on the interaction between humans and social algorithmic entities and from social psychology as applied to human-computer interaction raise attention to the likelihood that the expectations about VDIs from their human interlocutors are likely to be shaped by the actual skill sets of the human interlocutors and the perceived skill sets to successfully engage in safe interaction with

the VDI. Control over the perceived safety of the technological artifact, as proposed by TPB, is also important in this regard.

A further notion to consider is how similar the VDI is expected to be to a human being or, alternatively, how much it is understood as a non-human entity. The specific medium of communication is likely to be the determining factor here, with more human-like forms of the VDI (such as humanlike robots, which could even mimic the appearance of the deceased) being considered social entities and human interlocutors behaving towards them as if they were true human beings, or at least given some form of personhood status when embedded in other social practices. In contrast, a VDI which is pure software, lacks features that resemble human beings or is confined to an application within a personal computer or a program within another device would likely be considered non-human, and thus behaviour towards it would differ from that of human-to-human interaction. These two contrasts are extremes, however, and common forms of the VDI might incorporate some human features (such as embodied avatars) and lack others (such as being able to affect the physical world where the human interlocutor resides). Hence, in general terms, human behaviour towards such VDIs is likely to resemble interaction between humans in some aspects and quite different in others, although this will vary person to person and according to the technical features of a specific VDI.

3.2.3 Posthumous interaction and imagined interaction: conceptual considerations

The concepts of posthumous interaction and imagined interaction are relevant for two reasons. The first is that any form of Human-VDI interaction is also, by definition, a posthumous interaction, given that the data used to create the VDI is that of a *deceased* individual. Whether gathered before or after the death of the original individual, such data constitutes the foundation for any technologically mediated interaction between living people and the deceased. It can also be argued that a posthumous interaction is, in addition to being a real interaction on its own, an imagined interaction when the aim is *interacting with the deceased*, and not with the VDI as a partial component of who the deceased was when alive (the digital persona of the deceased, if they had one, could become part of the VDI's constitutive data). The second reason is that the data gathered for this thesis is not that of actual, current Human-VDI interaction. Instead, it is based on imagined interactions in the time horizon of 2040 between the interviewees and their imagined version of a VDI. As such, the ontological features of an imagined interaction should be discussed.

Carvalho Pereira and Maciel (2013) approach the topic of interacting with the dead via internet-based technological systems, and define the concept of posthumous interaction as that which occurs between a system and a deceased person's data, or between users and the deceased person's data via a system. It is posthumous as it occurs after the death event of a person whose data is online. The authors claim that interacting with a dead person's photograph in social networking sites can be considered an instance of posthumous interaction, albeit in a significantly restricted form. However, it is possible that technology not only enables but also promotes more complex forms of interaction with the deceased based on their digital assets (Massimi and Baecker, 2010; Massimi et al, 2011; Meese et al., 2015).

The reasons for engaging in posthumous interaction vary. Some have been covered in the Death Studies literature, but other aspects should be emphasised. For instance, in Carvalho Pereira's and Maciel's study in Brazil (2013), missing the user and seeking comfort were the reasons most commonly given by users who decided to engage in posthumous interaction, mostly through online mourning practices in social networking sites. Their study also supports the idea that the deceased's online profile could be functional for memorial purposes. More interesting is the fact that some of the survey respondents view keeping online profiles and data related to the deceased as a means of eternalisation. This suggests that the digital personas of the deceased are understood as some form of symbolic immortality: the deceased may be gone, but the relational component of their personhood remains. Though their definition of posthumous interaction encompasses both static and dynamic data, it is possible to speculate that data given some degree of agency by their technological medium could strengthen the claim of eternalisation of individuals through digital means.

In contrast to posthumous interaction, which is a real form of interaction in the sense of corresponding with real world events even if the elements with which the human interacts are non-living, imagined interaction is not a real form of interaction that has correspondence with real world events. Instead, imagined interaction is "a process of social cognition, whereby actors imagine and therefore indirectly experience themselves in interaction with others. Imagined interactions are a form of intrapersonal communication in which talking activity is related to the achievement of some intentional, social communicative goal" (Honeycutt et al., 1990, p. 1). Emphasis should be made here on the aspect of *intra*personal communication: the goal here is not to relay a message to another party,

but implicitly to oneself – to clarify elements of thought, role-taking and anticipate responses when in future interaction with others.

The fact that the dialogues occurring in an imagined interaction are internal to a person does not imply that they lack complexity. Indeed, imagined interactions can possess "many of the same characteristics as real conversations in that they maybe fragmentary, extended, rambling, repetitive, or coherent" (Honeycutt, 2003, p. 13). As such, it is important to sketch out some features of imagined interactions. Firstly, their form and sequence might resemble quite closely those of real conversations, although they may also differ in having repeated sequences with alternative choices being made, become overly one-sided, and are usually focused on significant members in a person's network, with interactions with strangers being rare. Second, imagined interactions are central to developing and maintaining a sense of self. Thirdly, because imagined interactions are instances of *intra*personal communication (as opposed to actual interactions, which are instances of interpersonal communication), they help in the identification of one's own feelings and in being honest with oneself, particularly when it revolves around solving contradictory values and wants. Moreover, an imagined interaction might offer perspective to the person imagining it, particularly if he/she is at a loss of how to deal with an issue or is undecided about alternatives that matter to him/her. Furthermore, and perhaps more interesting for this study, is that the other person in an imagined interaction is a representation for an aspect of the self, one that may be suppressed or unconscious due to it arising negative associations (such as shame or guilt) (Rosenblatt and Meyer, 1986; Honeycutt et al., 2015).

Two aspects worth highlighting regarding imagined interactions is their role for social cognition and their role in relation to images of the future, as both of these can clarify how they relate to the Futures Studies field. Though some of these elements are also explored in the literature review from the Futures Studies field, it is important to provide clearer linkages between an imagined interaction, social cognition and an image of the future. Firstly, taking the stance of the Critical Futures Studies field, "the future can be interpreted not only as something that will materialize as time passes but also as something that already exists in the present, both in people's thoughts and emotions" (Hideg, 2002, p. 287). In that sense, the future is both a form of cognitive interpretation and an emotional attitude towards its content. Moreover, the fact that foresight is an inherently human capacity (Slaughter, 1990; Slaughter, 1996; Hideg, 2002) suggests that it is an ability related to imagination, something which only the human species is known to have

developed in an advanced state. These facts hint towards the fact that imagined interactions and foresight capacities originate from the same source: human imagination.

In addition to their originating source, similarities in terms of their ontological nature can be identified. Presenting a taxonomy of prospection, Szpunar et al. (2014) identify four forms of future thinking: simulation, prediction, intention, and planning. Simulation is the mode of thinking that can arguably encompass imagined interactions: simulation, in its episodic manifestation, is the ability to construct a mental representation of a specific future autobiographical event; imagined interactions, similarly, are mental constructions which develop a script that visualizes behaviour between oneself and a significant other, and are typically of short duration (Edwards et al., 1988; Szpunar et al., 2014). Images of the future also present similarities to imagined interactions: 1) plurality, insofar as images of the future present different alternatives of a future state while imagined interactions present different alternatives of the flow of an interaction situation; 2) episodic features, given that images of the future typically represent a snapshot of a potential future state without delving into its past events while an imagined interaction can take the form of vignettes or representations of events of short duration; and 3) emotionally-conditioned settings, with fears and hopes being mixed with analytical projections in images of the future and imagined interactions being emotionally charged as a result of the interactants having emotional attachments to the other (Bell and Mau, 1971; Rosenblatt and Meyer, 1986; Edwards et al., 1988; Rubin, 2013). Given these similarities, as well as the role imagined interactions play for those who experience them, it can be argued that imagined interactions set in the future can be considered an instance of images of the future, with the main differences being the prominent elements in display within both.

This review on posthumous interaction and imagined interaction allows for the characterisation of imagined interactions with a VDI as particular instances of images of the future with very specific characteristics. First, it is a posthumous interaction, given that the original individual which the VDI is simulating to be would have died by the moment of the interaction. Second, as images of the future, it is possible that the focus of the cognitive construct is not on the changes in the surrounding environment, but on the changes the self and its networks of social contacts have experienced, with the main difference being the status of the other main interactant from living to dead (hence his/her recreation with the VDI). Another particularity of imagined Human-VDI interactions as images of the future resides in its overtly personal significance: while an image of the future reflects hopes, fears and expectations about the future, an imagined Human-VDI

interaction involves dealing with the death of a person of relevance to the personal lives of the human interlocutor. Having to deal with death in this manner also incorporates an element of mortality to the Human-VDI interactions as images of the future that images of the future centred on other things are unlikely to include explicitly in their content. Having discussed these features, it becomes clear that the imagined Human-VDI interactions obtained from interviews can be understood as (contingent) images of individual futures, with their ideal types in this thesis abstracting their common features and integrating them with other elements, thus generating more general ways in which people can interact with VDIs. In this sense, the ideal types might more closely resemble the images of the future usually seen in Futures Studies literature.

3.2.4 Conclusion to Interaction Studies sub-section

The insights from the Interaction Studies field offer innovative ways of conceptualising and analysing Human-VDI interaction as it could possibly occur in the time horizon of 2040. Literature from sociological approaches to social interaction, from interaction between humans and social algorithmic entities and from posthumous and imagined interaction accentuate the fact that software-based social entities can interact meaningfully with human beings given some conditions, which vary from the degree to which their technical capabilities allow them to replicate human behaviour to the fact that their specific medium of communication places influences the willingness of some people to interact with them. The review of this field is helpful in characterising the phenomenon at the core of the images of the future in this thesis as social interaction between people and VDIs, despite the differences between a person and a VDI as social actors.

The sociological approach to social interaction highlighted motivational, interactional and structuring processes that shape the nature of the interaction between humans. Of these processes, motivational processes appear to be the most difficult for a VDI to achieve given its lack of self-awareness and inherent motivation, whereas a VDI can replicate most elements of interactional processes (albeit with some differences) and have some of the structuring processes coded as part of its algorithm. As such, although the technical capabilities of the VDI might reach a quite advanced level by 2040, some fundamental differences would remain inasmuch as the self-awareness component is missing from a VDI. This, however, does not imply that the VDI algorithm cannot offer a meaningful interactive situation for its human interlocutors and, consequently, have an effect on how they relate to death and to mourning, as the meaning attributed to an encounter

with the VDI is not solely dependent on its technical capabilities but also on context, personal history and the significance read into the VDI.

Studies centred on interaction between humans and social algorithmic entities reveal that the perceived skills and the actual skills required to interact with a technological artifact and to control it are likely to influence the degree to which a VDI is viewed as a desirable technology. Similarly, such studies reinforce the argument that social and cultural background affects the possible meaning assigned to a VDI, from more technological to more humanlike. In addition, specific human features such as humanlike appearance and the ability to interact with surrounding elements might increase the humanlike perception of the VDI, while disembodied, pure-software forms of the VDI might decrease such a perception. Human behaviours towards a VDI would likely vary according to these considerations.

Finally, the concepts of posthumous interaction and imagined interaction allow for further characterisation of Human-VDI interaction. Posthumous interaction is the result of interacting with the digital data left behind by the deceased individual, which in this case could manifest itself in the form of the VDI. Imagined interaction was seen to be an instance of images of the future due to its ontological properties and similarities, both being cognitive constructs that allow for plural outcomes of a same event. The data gathered for this thesis combines these two concepts, with posthumous interaction being imagined by the interviewees whose data serves as the inputs for generating the ideal types of the images of the future of Human-VDI interaction. The particularity of imagined Human-VDI interactions as images of the future resides in its overtly personal significance: while an image of the future reflects hopes, fears and expectations about the future, an imagined Human-VDI interaction involves dealing with the death of a person of relevance to the personal lives of the human interlocutor.

3.3 Social practice theory and the wider context for Human-VDI interaction

Social practice theory suggests the co-constitution of social structure and human behaviour, aiming to disentangle and understand the beliefs, values, lifestyles and tastes that coalesce in the concept of a practice: routinised forms of behaviour that that link together physical and mental activity with the objects in the surrounding environment and their uses by social actors (Shove et al., 2012; Sovacool and Hess, 2017). This embeddedness of technological artifacts within routinised behaviour of the actors is central to the study

of Human-VDI interaction: as opposed to social interaction between humans, the technological component in Human-VDI interaction requires that more attention is given to the different meanings associated to the VDI in the context of an interaction. Equally central to the study of images of the future of Human-VDI interaction is examining how the VDI becomes an element of routinised behaviour, with some interactions between humans and VDIs not being particularly meaningful in some contexts and forming part of the everyday activities of the human interlocutors. In other contexts, however, these interactions might take on a more meaningful note, but the interactions are themselves part of different routinised activities. It is also important to explore how social practices involving the VDI might be enabled or limited by the affordances of technologies and other practices, as these might give more or less freedom to the human interlocutor.

The social actors involved in a practice perform roles and behave according to pre-defined expectations about the behaviour of other social actors, the environment they are in, the possible behaviour enabled by the objects present in the surrounding environment and the social norms that are expected in such a setting (Reckwitz, 2002; Augello et al., 2018a). Although a practice is constituted by numerous elements from the more tangible and identifiable at the micro-level to the more abstract and conceptualised at the macro-level, theorists of social practices (Reckwitz, 2002; Shove et al., 2012; Sovacool and Hess, 2017; Burger et al., 2019) have categorised them into four themes: 1) Materials/materialities (objects, technological devices, tangible tools and instruments and other material items); 2) competences (skill sets, habits, explicit and implicit knowledge, techniques); 3) meanings (ideas, signifiers, symbols, emotional displays, cognitive constructs, fears and hopes); and 4) connections (a temporal dimension that illustrates processes of emergence, persistence, transformation and disappearance of practices).

From these elements, it is possible to see compatibilities with both social interaction theory and Post-Marxist discourse theory. Social interactions involve, to varying degrees, materials, competences and meanings, with connections being mostly absent due to the fact that social interaction theory focuses mostly on single encounters. Social practice theory fills this gap by integrating into the analysis the routinisation of those encounters over time. Post-Marxist discourse theory, in turn, highlights the role of symbolic systems of meaning and how they shape competences and materials. But Post-Marxist discourse theory also incorporates connections of social practices: they emerge via political logics, persist by social and fantasmatic logics, and are transformed by opposing political logics. Because of these compatibilities, it can be stated that an analysis that requires focus on

social interaction, discourse and social practice will not face theoretical contradictions; rather, what changes in the analysis is the specific lens adopted at some moments for the examination of the phenomenon under scrutiny.

Social practices, due to the vast number of elements involved, often require the incorporation of insights from other methodological approaches for data gathering and data analysis. Research projects that combine ethnographic approaches with the filtering of data through micro-episodes and a zooming in/ zooming out process have used social practice theory to get detailed descriptions of how particular technologies are used and what meaning is given to them by social actors (Emerson, 2007; Nicolini, 2009; Burger et al., 2019). This indicates that other analytical perspectives and methods might be employed to disentangle the elements of a social practice and establish their relevance.

Due to the current limitations in technology for the development of complex VDIs and the rarity of current Human-VDI interactions, an ethnographic study of social practices centred on Human-VDI interaction would have been impossible. For such purposes, a future-oriented approach is preferred, where interviews that encouraged imagination processes were the primary source of data, and images of the future being the conceptual category which allow for meaningful discussion of social practices related to interaction with complex forms of the VDI. Concerning Human-VDI interaction as a social practice, it can be speculated that the material aspect (in this case, the technical features of the VDI) would have a primary role in the meaning that the human interlocutors associate with the VDI in the first instance. This supports the insights from the literature on interaction between humans and social algorithmic entities, which suggest that more human-like forms of the VDI (which would have human physical embodiment and move in the physical world) would likely be regarded as having almost human status, and those forms less identifiable as human (such as text-based software confined to a technological device) would likely be regarded as non-human. However, broader discursive pressures which imbue some practices with specific meaning should also be considered if a refined account of meaning is to take place.

Meaning in the social practices would also be shaped by the context in which it is taking place, with the home or private spaces likely encouraging more personal and intimate relations with the VDI, while public spaces would encourage more distant and formal behaviours in Human-VDI interaction. Competences would need to be assessed based on the technical features of the VDI as well and the acquired knowledge of technology use by the human interlocutors. However, judging by the state of current Human-

VDI interaction, the competences required are not likely to be complex, with natural language and simple controls being preferred to maintain the flow of the interaction. Finally, although the concept of images of the future would seem to downplay the connections between practices, given their episodic nature, aspects of routinisation might be interpreted from the words used by the interviewees. As such, Post-Marxist discourse theory might complement at times the analysis of social practices centred around Human-VDI interaction by highlighting the signifiers and their meaning, which might otherwise be absent from the study given the lack of experiential accounts of such a practice.

Social practices with Human-VDI interaction as their core activity could, in principle, be envisioned as taking place in a societal context where advanced digital technologies are highly integrated into everyday life. These social practices focused on Human-VDI interaction can be expected to be enabled, or at least significantly facilitated by, other social practices which are centred on monitoring, registering and analysing data. People could either willingly generate data for personal, social and institutional forces, or data-producing practices could be forced upon them by the prevailing technological systems, cultural perceptions, and the dominant economic and political institutions. These social practices could therefore be described as obeying a paradigmatic vision of *datafication*, wherein the dominant actors in a social and cultural setting would believe that everything can be reduced and recreated through data, and consequently promote practices that produce data in order to monitor and manage social behaviour. Datafication as expressed in a multitude of practices coalescing around the idea of generating data could give rise to the development of the VDI as a desired technological artifact in a given context, as the personality, speech patterns, physical features and other personal characteristics of the deceased individual would be codified, incorporated into the device of the VDI and displayed in performance with its human interlocutors.

Datafication would likely not act on its own for the creation of the VDI and its integration into everyday life, however. The central role that industry and technology corporations currently occupy is also sustained by a deeper and broader capitalist discourse, which operates according to a social logic of commodification, in this case of human activity and its associated data produced when it intersects with the online domain supported by the internet (Campbell and Carlson, 2002; Kang and McAllister, 2011; Bottis and Bouchagiar, 2018; Crain, 2018). Capitalism as a (discursive) system would likely be the wider context under which datafication operates, at least in the time horizon of 2040. Unless there is a challenge to hegemonic capitalist discourse, it can be speculated that this

is also the discourse from which some social practices related to Human-VDI interaction would emerge, particularly those where people are viewed in terms of their instrumental value.

Datafication is likely to support immortality-favouring discourses as well. Under that frame, a VDI could potentially be thought of as replacing the relational component of the deceased person, given that the VDI would be constituted by data gathered from the deceased before the death event occurred. As such, questions of whether the VDI could usher thoughts of replaceability of the deceased by technological means should be considered as ethical concerns if or when the development of such a technological artifact is in process.

3.4   Conclusion to the interdisciplinary literature review: a sensitising scheme

The intention of this interdisciplinary literature review was to provide an overview of the theoretical foundations to conceptualise social practices of Human-VDI interaction and comprehend their thematic underpinnings and importance for personal, social and cultural life. It identified possible motivations of the social actors involved, likely (though contingent) outcomes, structural pressures influencing behavioural patterns and the co-constitution of technology and social life. By now, the positioning of Human-VDI interaction at the centre of Death Studies, Interaction Studies, and social practice theory has hopefully been argued successfully. However, a model which allows for the meaningful analysis and discussion of the social practices of Human-VDI interaction in 2040 featured in the images of the future in this thesis still needs to be developed.

For this reason, inspiration has been taken from Turner (1988) regarding the use of a sensitising scheme that allows for the characterisation of complex social phenomena constituted by a set of interrelated elements. For analytical purposes, the most clearly linked concepts will be presented as part of this sensitising scheme. This does not mean that it is a faithful representation of the social practices of the Human-VDI interaction phenomenon. Rather, the sensitising scheme allows for meaningful observations to be made between different forms of Human-VDI interaction as integrated into social life in the images of the future which serve as the core of this thesis.
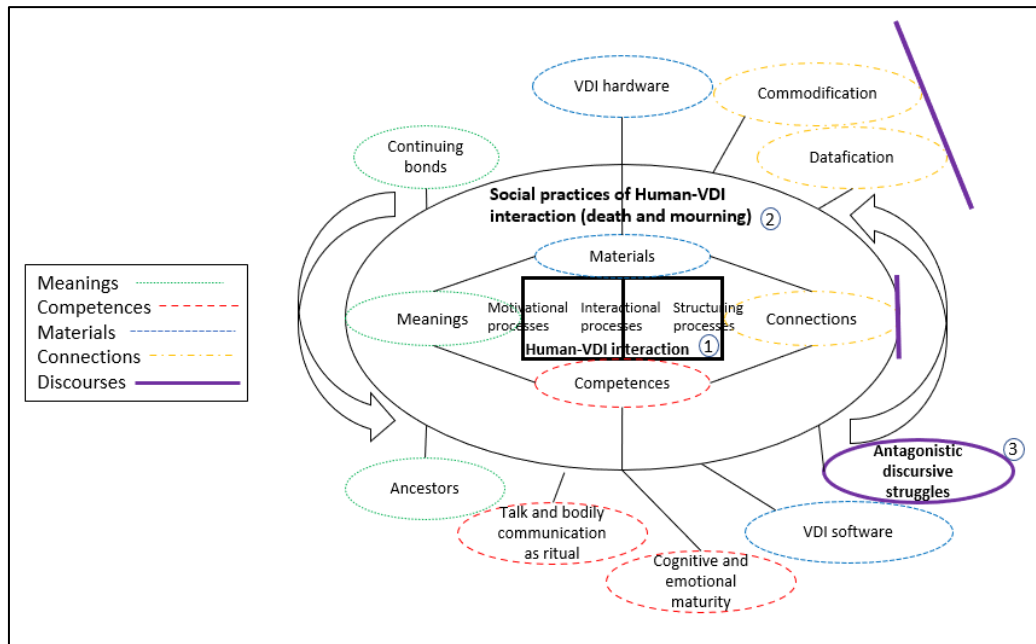
Figure 1: Social practices of Human-VDI interaction.

Figure 1 shows the sensitising scheme which integrates several of the concepts and in-sights reviewed in this chapter. It presents Human-VDI interaction as a form of social interaction that, as repeated over time, becomes a social practice. Such social practice integrates the elements from social practice theory (materials, meanings, competences and connections) that are involved in Human-VDI interaction. As Human-VDI interaction becomes routinised and hence becomes a social practice, its thematic content – which focuses on death and mourning – characterises it as a social practice with undercurrents of death and mourning which intersects with and forms part of a broader constellation of social practices that are also death- and mourning-focused.[12]

The sensitising scheme of Figure 1 can be read by following the order of the numbers, starting from 1 and ending at 3. Number 1 points to the phenomenon of Human-VDI interaction, expressed in Figure 1 via the rectangle in bold at the centre. This is a social phenomenon that constitutes the core activity of social practices focused on the VDI, which by nature are also dealing with death and mourning. The three processes of social interaction – motivational, interactional and structuring – are present, although they are

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[12]   That social practices centred on Human-VDI interaction are focused on death and mourning might be a point of contention. Opponents to such a characterisation might argue that Human-VDI interaction is actually focused on life and continuity, given what the effects it has on the human subjects. Under some circumstances and frames, I would agree with this interpretation, but I would argue that *even then* such practices are still centred on death and mourning precisely because death is the necessary event for such practices to emerge (indeed, for the creation of the VDI), and because the practices only *acquire meaning* in relation to death and mourning. If it were otherwise, it would be like any other kind of practices that involve living individuals.

transformed as a result of the limitations of the VDI: 1) the lack of an inherent motivation which, to some extent, could be coded; 2) the differences in the manifestation of the concepts of mind, self and role-taking for the VDI within interactional processes; and 3) the lack of some structuring processes and the possible rigidity of the remaining structuring processes (categorisation, regionalisation and routinisation) which constitute part of the code of the VDI.

Number 2 points to the social practices themselves that involve the VDI, phenomena which is expressed via the large ellipse surrounded by two arrows (which aim to convey the performative dimension of the social practices) and with several smaller ellipses attached with lines. Human-VDI interaction, even in a single encounter, involves the presence, display and interpretation of the different elements of a social practice: materials, competences, meanings and connections. As Human-VDI interaction goes beyond single encounters, becomes a routinised behaviour and is integrated as part of everyday life and/or regularly scheduled activities, it becomes a social practice. As a social practice, Human-VDI interaction could take place beyond the confines of the home and become embedded in institutional contexts and in networks of social relations whose focus is not explicitly related to death, but which nonetheless form part of the Death-constituted society, following Seale's (1998) argument.

Specific materials, competences, meanings and connections would be involved in social practices whose core activity is Human-VDI interaction. In Figure 1, these four concepts are expressed as ellipses surrounding the rectangle of Human-VDI interaction, within the circle of death- and mourning-focused social practices involving the VDI. The ellipses outside, formed by different patterns of dots and dashes, present specific examples of these concepts as they manifest when performing a social practice. Materials, represented in Figure 1 in ellipses formed by squared dots, would involve hardware and software currently associated with high-end electronics, and the medium of communication between the VDI and its human interlocutor would be partially composed by these materials. In many cases, the VDI's software would incorporate the original (now deceased) individual's relational component or digital persona, as such an element would have extensive data related to the digital identity of the deceased. However, the materials in Human-VDI interaction need not be limited to only those that facilitate the interaction, as other materials (objects, instruments, tools, features of the spatial design and so on) would be found in the setting of the interaction and could be used and/or affected by the human interlocutor, other social actors and, in some cases, the VDI itself.

For Human-VDI interaction to take place, a set of competences, represented in Figure 1 in ellipses formed by dashes, are needed on the part of the human interlocutors. This is because the human interlocutors must know how to use the materials comprising the medium of communication and be able to navigate an interface that allows for interaction. Moreover, given that Human-VDI interaction requires the deployment of social and cognitive abilities inherent in social processes, such competences are not only related to how the human interlocutors engage with the materials during an interaction, but also to communication and interpretative skills that they display during interaction with other people. Talk and bodily communication are instances of those skills, which according to Scheff (1990) strengthen the social bond and, in line with Seale (1998), orient the human interlocutors towards life and away from death. Furthermore, a level of cognitive and emotional maturity should be expected from the human interlocutors. In other words, they should ultimately be able to recognise the VDI as a non-sentient entity, and as a replica of the deceased, not as the deceased himself or herself. Similarly, they should be capable of managing their emotions during an interaction, as an overwhelming emotional reaction to being in the presence of a VDI might make an interaction impossible or very difficult to sustain.

Meanings related to the VDI and to the interaction itself are diverse. In Figure 1, these are expressed via ellipses formed by fine circular dots. It is likely these vary according to cultural standards, personal history, and the predominant discourses and ideological frames in a given context. For illustrative purposes, different social practices with Human-VDI interaction at their centre could generate the meaning of an interaction with ancestors (though the human interlocutors may not explicitly refer to the VDI as such), the maintenance of a continuing bond, or a practice of generativity within a family or an institutional setting. There is, however, a different kind of meaning that can also emerge – not one attached to the interaction but to the VDI as a technological artifact. For example, one range of meanings imparted to the VDI could vary from it being an inert technological instrument in one extreme and as a social entity in the other extreme. The meaning attached to the VDI would also affect the meaning attached to the ensuing interaction.

Finally, illustrated in Figure 1 as ellipses formed by a pattern of dashes and dots, the element of connections relates to how the social practices of Human-VDI interaction connect to other social practices in a given context. Preliminarily, it can be speculated that practices involving interaction with the VDI might connect to practices of commodification in the capitalist system, with attempts to commodify human life and grief for profit-

seeking purposes. This might result in services related to VDI development and enhancement being valued in market terms. Parallelly, practices immersed in the paradigm of datafication can also intersect with those focused on Human-VDI interaction, as data-producing and data-sharing practices might lead, intentionally or otherwise, to the creation of a digital persona which could be incorporated into a VDI's algorithm. In short, these practices do have effects on the kind of practices involving Human-VDI interaction that might emerge and their process of emergence, despite being separate from them.

Number 3 brings to light how death- and mourning-focused practices involving the VDI would acquire their meaning by being performed within a discourse that pursues immortality through technological means and which is radically contingent. This is best expressed by means of highlighting the discursive struggle between a Post-Mortalist discourse reliant on technology and alternative discourses (which are not present in Figure 1). This is shown in Figure 1 by the line in bold that is touching the contours of the connection practices and the larger ellipse, as well as by the smaller ellipse in bold which attaches itself to the larger ellipse and contains antagonistic discursive struggles. While these other discourses will be described later in the thesis, for now it is relevant to mention that these antagonistic discursive struggles might emerge as critiques to the practices of creating and interacting with a VDI, on one side, and the defence of these practices by developers and human interlocutors. Such critiques would be quite diverse: more "civil" instances could be public debates questioning Human-VDI interaction or open editorials in communication media, and more extreme examples might derive in industrial or technological sabotage.
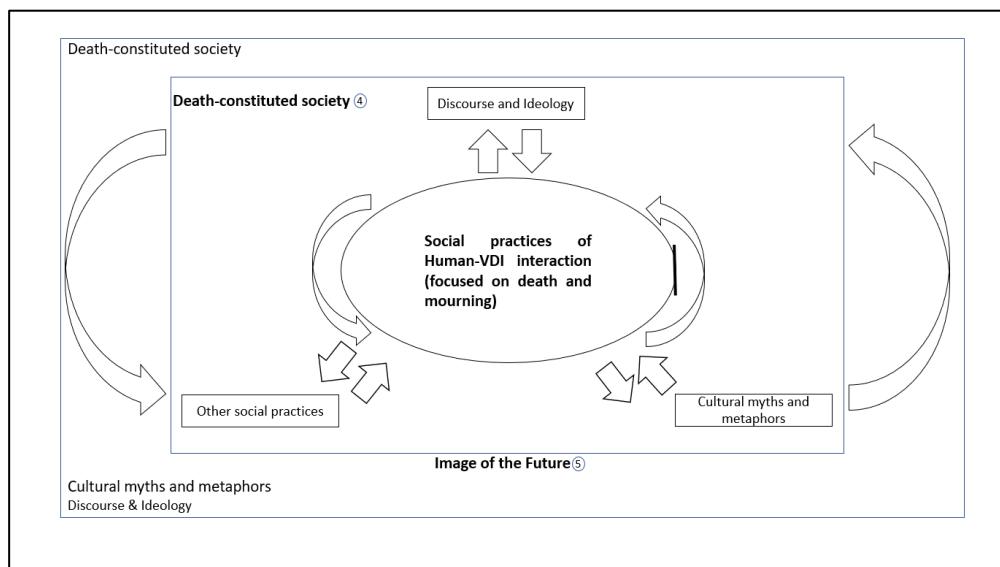
Figure 2: Social practices and images of the future within a Death-constituted society

Figure 2 is a continuation of Figure 1, locating the social practices of Human-VDI interaction within a broader context and within images of the future. For this reason, the sequence of explanation starts at Number 4. Number 4 highlights the different ideological structures, cultural myths and metaphors and other social practices that shape and are shaped by death- and mourning-related practices involving the VDI, and which are found in the Death-constituted society. These provide broader social and cultural influences that imbue with meaning the social practices of Human-VDI interaction, which are considerably stable forces but in the long term are eroded or transformed.

Finally, number 5 frames all of this as taking place within an image of the future, the analytical concept of Futures Studies used in this thesis, represented by the rectangle which contains all the previously described elements and is surrounded by two arrows (which aim to convey the continuous shaping and reshaping of images of the future in the process of imagining them). Although images of the future might not have sketched out all of these elements, by constructing ideal types of the images of the future based on interviewee data, some general features can be identified and described. Crucially, images of the future are not the result of pure and immanent creativity from those who imagine them: they also emerge from persons or groups who are immersed in discourse and have assimilated, consciously or unconsciously, cultural myths and metaphors that guide their actions. Similarly, they also emerge from within a Death-constituted society, and their content is influenced, to varying degrees, by this fact.

This conceptualisation of Human-VDI interaction as the core activity of social practices centred death and mourning incorporates insights from the three fields of study reviewed in this chapter. The interdisciplinary view taken in this chapter allows social practices involving Human-VDI interaction to be understood, at least preliminarily, as specific yet complex social phenomena that display meanings associated to death and mortality, and which brings into focus issues related to technology's embeddedness into social practices that are immersed, to varying degrees, in discourses that promote certain forms of Post-Mortalism. As such, it highlights how technology enables social practices which strengthen, via their routinised performance, a discourse which aims to overcome limitations imposed by human mortality.

This interdisciplinary approach to the literature review has also provided sound theoretical foundations for the following argument to be made: insofar as the VDI is regarded as a social (algorithmic) entity by its human interlocutors, Human-VDI interaction can indeed be regarded as *interaction*. Hence, the constitutive processes of Turner's (1988)

conceptualisation of social interaction – motivational, interactional and structuring – are also constitutive of Human-VDI interaction, expressed to varying degrees according to the technical specificities of the VDI. This meaning could be attributed to Post-Mortalist discourse, which circles around signifiers and meanings related to overcoming death. But, as seen by the model and the literature review, other discourses may provide alternative meanings to the VDI.

Moreover, emphasis should be made on the interdisciplinary value: by covering only one field, objections could be raised as to whether social practices involving the VDI would indeed count as interaction, or in relation to the decision to include technology in examining social practices. This interdisciplinary review shows that technology might grant greater agency to the dead in contemporary and future societies by giving them (limited) social agency within some contexts, and that some features of social interaction can be present even when the other interactant is not a person.

As previously stated, this conceptualisation of the social practices of Human-VDI interaction as unfolding within images of the future is meant to offer an approach to making sense of the meaning of those practices and how they orient subjects in their confrontation with mortality and in facing the loss of others. This grants the possibility to study the images in detail and discuss whether the practices depicted in the images promote a pedagogy of death or, conversely, increase the sense of alienation from death and mourning for the subjects engaging with the VDI in the envisioned future of 2040. In this sense, it serves as an outline that is explored thoroughly in chapter 6, where the ideal types of the images of the future are presented, and the social practices and their deeper foundations are critically examined. The next chapter, in turn, describes some basic characteristics of the VDI as a technological concept, as well as its characterisation as an instance of a Virtual Human and how persons relate to it.

4 CHARACTERISING THE VIRTUAL DECEASED INDIVIDUAL (VDI) AND HUMAN-VDI INTERACTION IN THE PRESENT

This chapter delves deeper on what a Virtual Deceased Individual (VDI) is, what can be expected from it, and how Human-VDI interaction has been seen to occur in the present in the few reported cases. The focus of the chapter is mostly descriptive, with the theoretically informed analysis being the focus of the chapter where the images of the future are presented. Nonetheless, references will be made to theoretical concepts introduced in previous chapters when suitable for understanding the phenomenon of Human-VDI interaction.

4.1 The VDI as an attempt at recreating a deceased individual

The VDI is, firstly, a technological construction reliant on various hardware and software components. At its core, it is a social algorithmic entity which gathers data from different sources about the deceased, usually through texts, images and video produced by the deceased individual while alive, but complemented with the different insights about the person from others who knew him or her in personal and professional life. The result is expected to mimic the speech patterns, mannerisms and personality traits of the deceased. The VDI, in other words, would have all the necessary information associated with the original individual, and when prompted, it would answer faithfully and in a way that mimics the way the original individual would answer. It is a programme which simulates being him or her in the eyes of the other members of his or her network of contacts and aims to replicate his or her behaviour in social interaction through defined means. At the same time, the VDI is a social construction in the sense that it acquires meaning through its integration into social practices in a given cultural setting, the language it is used to describe it, and the effect it has on the symbolic worlds of subjects. Currently, the VDI is part of broader discourses on digital immortality, digital resurrection, digital afterlives and digital endurance (Bassett, 2018), and its place within them is outlined below.

As previously established, a VDI cannot be considered a form of actual resurrection, but a symbolic one, wherein the relational component of a deceased individual remains in the social world by virtue of it being digitalised through different means. It would fall under the classification of Alexander Turchin and Chernyakov Maxim (2018) as a form of partial resurrection, where an AI-enhanced program mimicking the deceased individual would aim to fulfil the goals of the people who resurrected him or her by virtual

means. They distinguish between resurrection based on the identity of the deceased and resurrection based on behavioural patterns. While the former strives for authenticity in terms of how closely the social algorithmic entity matches the original individual, the latter could be interpreted as a way for the bereaved to deal with the absence of the person. Specifically, a partial resurrection by a VDI would involve adopting one or more of the following approaches in the process of reconstructing that person: 1) reconstruction based on the expectations of the relatives, 2) reconstruction based on expected social function, 3) reconstruction of behaviour but not internal states, and 4) reconstruction with elements of randomness (Turchin and Maxim, 2018). These approaches to recreating the dead in the form of a VDI emphasise different aspects of a living person and their relation to society, with some privileging his or her embeddedness in a network of contacts (such as the one based on the expectations of relatives) and others favouring institutional roles they perform (such as the one based on expected social function).

Crucially, none of these approaches aims to replicate the consciousness of the original (now deceased) individual. Part of the reason is that a strong understanding of what consciousness is has not yet been reached, although different disciplines offer partial (if often contradictory) answers. In consequence, its replication is out of reach. Additionally, even if a working definition of consciousness were available that allowed it to be artificially created, it is not a given that the technology necessary to do so exists. In their conceptualisation of digital immortality, Microsoft researchers Gordon Bell and Jim Gray (2000) proposed a continuum about the forms digital immortality could take: at one end of the spectrum, there is the enduring frame, which is linked to one-way immortality by allowing the transmission of ideas to the future; at the other end, there is endless experience and learning, which allows for two-way immortality, wherein the remaining part of a person that resides in a technological device could continue to learn and evolve according to the inputs it receives. In this framework, one-way immortality would imply transcendence by some immortalising act made concrete by technological means, while two-way immortality moves closer to the development of autonomous virtual avatars of the deceased.

Gordon Bell continued developing these ideas on digital immortality along with Jim Gemmell (2009), with four intentional steps which would pursue the evolution of mechanisms for and the effectiveness of digital immortality. The first involves the transference of non-digital of the deceased into digital form. The second supplements the already digital memories with new sources of online data about the deceased. The third focuses on

an interactive avatar that responds in the same manner the deceased would, a feature enabled by the deceased's gathered and processed data. Finally, the fourth one represents an evolution of the third step, with the addition of inter-temporal learning and actualisation strategies. The third and fourth steps could potentially give rise to social practices where future generations can ask ancestors for advice, and the ancestors, in their virtual form of immortality, could offer some faithful answers (Bell and Gemmell, 2009, p. 151). The concept of the VDI could be situated between the third and fourth steps of Bell and Gemmell's framework, with interactive immortality in virtual form an explicit intended aim for the VDI (third step) while learning and actualising skills could be considered a possible option, according to the needs of the VDI's interactants. Learning and actualising skills, however, would not mimic those of a human, but would resemble those seen in complex artificial intelligence systems, in particular neural networks.

Understanding where the VDI falls in the different degrees of digital immortality is necessary, then, to understand its potential and its limitations. The VDI, as conceptualised in this thesis, is certainly on the higher end of the current paradigm of digital immortality as a *symbolic* form of immortality, moving between the third and fourth steps of Bell and Gemmell's framework. In the foreseeable future, self-awareness and consciousness are not features which a VDI is expected to have; if it did, questions about it being a virtual, conscious replica of the original individual, or an entirely different entity altogether, would have to be addressed.

4.2   Overview of the technical features and development of a VDI

The VDI can be considered an instance of a digital immortal (Savin-Baden et al., 2017; Savin-Baden and Burden, 2018), which itself is a sub-category of a Virtual Human: "Software programs which present as humans, and which may have behaviour, emotion, thinking, autonomy and interaction modelled on physical human capabilities" (Burden and Savin-Baden, 2019, p. 17). A virtual human has the following features, although their degree of complexity can vary between basic forms and advanced forms (Burden and Savin-Baden, 2019):

1. Its main properties must be in digital form.
2. It must have an ability to communicate through more than one of the following mediums: text, audio, video, touch, virtual reality and augmented reality.
3. It should have an embodied manifestation, even if it is not present in the physical world.

4. It should be of human appearance.

5. It must communicate in natural language with real humans.

6. It should have extensive autonomy, and not merely respond to commands given to by real humans.

7. It needs to convincingly portray emotion to its interactants.

8. It has the capacity to display personality traits.

9. It possesses the ability to reason – making sensible decisions based on the information it has at any given time.

10. Advanced forms exhibit some degree of learning ability for a machine (that is, not in the same way a human being would learn).

11. Advanced forms display the ability to visualise or create something that is currently inexistent, a virtual equivalent of imagination.

12. Under ethical considerations and guidelines, an aspiration to eventually give sentience to a Virtual Human (if this is something that is even possible), based on the previous attributes, should be considered.

Digital immortals would, in principle, possess these same attributes, with the difference being that the digital immortal is a social algorithmic entity of a person who has died while the Virtual Human could either be the virtual duplicate of a living person or a new entity entirely. What constitutes, then, a VDI as a specific instance of a digital immortal? A digital immortal is a concept that can also encompass technological creations where the goal is to match the identity of the whole individual to the highest degree possible, based on the available information. Independent of the context, this variant of the digital immortal should have a core personality matching the deceased, his or her various expressions across contexts, and behave in an autonomous manner that reflected the original individual's behaviour. Moreover, the concept of the digital immortal can also be used to refer to the attempt to create a permanent version of the deceased that exists as data, implying a foreseeable immortality in the sense that such social algorithmic entity would not cease to exist unless suffering from damage or having all its copies deleted.

The VDI, conversely, only emphasises the manifestation of the traits of a specific person within a network of social relations. There is no attempt at matching the autonomous identity of the deceased, but only the relational identity it has with its expected human interlocutors, adjusted to the possible contexts of activation. A VDI cannot operate in isolation, for there would be no living social actor to would give it any stimulus to react to. In this sense, as a singular entity, it lacks agency and will. The VDI, then, can be

considered a more restricted version of the digital immortal, assuming a specific role identity with its interlocutors, although some of the central personality traits of the original individual might express themselves when suitable for the purposes of achieving faithfulness in the interaction.

The development of a VDI could be expected to follow the same process of creation of a digital immortal, which has been delineated by Maggi Savin-Baden and David Burden (2017, with Helen Taylor; 2018) as they attempted to create one. The first phase is gathering data on the person to be recreated. They acknowledge that a person who died suddenly would not be able to be involved in the creation of their digital immortal, but ideally, in-depth interviews with the original person on a variety of topics would allow them to get a sense of their thoughts and emotional reactions should matters concerning these topics arise. Complementing the interviews with questionnaires and the completion of spreadsheet grids filled out by the original person would ensure consistent data collection. In the case the person is absent, the remaining sources of data – data produced by the original individual from documents and social media posts (which include text, image, video and audio) and data generated by interviews with those who knew him or her – would constitute the foundations for the creation of the digital immortal.

The second phase revolved around distilling the data, coding it and organising it according to the expected user interface the digital immortal was expected to have. This meant considering what combination of elements in the system, which included user interface, content, word choice and conversational style, would lead to specific manifestations of the recreated persona and to their degree of faithfulness in interaction. In their research, the original individual was a person named Barry, and the different combination of elements for his digital immortal would yield different degrees of "Barryiness". In the case of conversational style, longer responses were more faithful but also disrupted the flow of interaction, while shorter responses were less faithful to the tone of the original Barry but minimised discontinuity.

The third stage involved the design of a system that made the digital immortal functional. This is described the following way:

> "*A central core manages memory, reasoning, motivation, planning and possibly emotion. The digital immortal "reads" a variety of information sources, and has two-way access to a variety of real-world systems. It can also embody itself in virtual worlds (as an avatar), and possibly in the physi-*

cal world (via a robot). It has a natural language understanding and gener-
ation facility to enable two-way communication with people in the physical
world (by text, audio, video, email, textchat, Twitter and other systems), and
it potentially synchronises its knowledge and activities between multiple in-
stances of itself" (Savin-Baden et al., 2017, p. 18).

Two issues are worth highlighting here. The first is that the central core is not only a manual creation but is greatly enhanced by the use machine learning and deep-learning techniques to allow the digital immortal to gain higher degrees of faithfulness. The second issue revolves around the nature of the interaction. The system itself could appear more or less human, depending with the nature of the interactants (living, conscious entities such as human beings, versus other technological and administrative systems). If interacting with a human being, then the digital immortal would need to treat it as an instance of a social interaction, adopting a more humanlike behaviour. Conversely, if the interaction is with other digital systems, the digital immortal could just behave as an algorithmic entity.

The fourth and final stage outlined concerned the actualisation of the digital immortal by having continuous access to data sources of the network of social relations of which the original individual was a member. Receiving regular updates about this network would improve the faithfulness to which the digital immortal could simulate being the original person. Indeed, it is the *intent* on giving off an illusion that the interaction is with a person, the deceased individual, that characterises this Virtual Human as a digital immortal (Savin-Baden et al., 2017, p. 18).

In the development of a VDI, for it to be successful in a social interaction situation and to be further integrated into social practices, it should be programmed to have social intelligence. For social intelligent robots, specifically, this means designing an appropriate modelling of its identity, which includes the knowledge of the expected interactants and the physical environment, codifying sociocultural practices in the form of code that constitutes its knowledge base, structuring the software in a manner that enables the robot to understand the specific instance of interaction, and subsequently planning for and performing the interaction (Augello et al., 2018a). Depending on the sophistication of the VDI, developers would need to pay equal attention to the hardware and software components if the expectation is to create physical VDIs. If, however, the intention is for the VDI to remain purely virtual, the focus would reside in crafting a convincing programme that emulates a human being in a social interaction situation. While this is still a challenge,

current research (Augello et al., 2016; Augello et al., 2018a; Augello et al., 2018b) suggests creating a successful virtual agent for social interaction, which integrates aspects of social practice theory for their interpretation of social situations and the interactants in them, is possible. The degree to which a VDI could display compelling humanlike behaviour towards its expected human interlocutors and not only successful social behaviour is, however, a more complex challenge that needs to be solved.

A final issue to address regarding the features of a Virtual Human and, by extension, also the features of a digital immortal and a VDI, is the possible uncanny valley effect, which refers to the uneasiness that might result from encountering objects that appear to be almost human but ultimately are not (Mori, 1970). The uncanny valley effect can occur as a feature of design, where an artificial entity is designed to resemble human beings in appearance and behaviour, but its inability to successfully resemble one in the eyes of its interlocutors leads to discomfort. While the argument has been made that the uncanny valley effect cannot be overcome until the algorithms are able to mimic human sociality so well that they pass the Turing Test (Turing, 1950) – a test which aims to make an instance of machine intelligence indistinguishable from a human when in some limited form of interaction with another human – and conscious effort is required from their human interlocutors to recognise them as artificial entities, Young et al. (2007) argue that cartoon representations of sociability in robots can complement the algorithmic aspects and create a sense of ease for the human interactants. For the VDI, this could imply that if the technology is not advanced enough to be able to mimic human sociality flawlessly, then other design approaches which emphasise the VDI's artificiality but simultaneously encourage displays empathy and affinity from the human interlocutors could be considered as options.

The uncanny valley effect, however, should not be regarded as a purely aesthetic issue, but also something that is shaped by cultural expectations of technology. In particular, whether a Virtual Human, digital immortal or VDI produces an uncanny valley effect or not is related to how people think of themselves in relation to the digital realm and how the concepts between digital and physical, real and fake, and alive or inert are socially constructed in a given spatial and temporal setting (Graham et al., 2013; Bollmer, 2013; Kera, 2013). Hence, it could be expected that those who associate the digital to the fake and/or to the artificial will experience an uncanny valley effect if in interaction with a VDI, whereas others who do not make that distinction might find the VDI as an acceptable social algorithmic entity to interact with.

4.3   Emergent practices of Human-VDI interaction

Despite the existence of services for the creation of a VDI, such as Eter9 (2017), Lifenaut (2017), and Eternime (2019), the obscure nature of projects intended to create digital immortals and/or the current technological limitations mean that social practices of Human-VDI interaction have not become widespread. These services, as well as the VDI, could be considered forms of thanatechnology, which have the dual role of immortalising someone by virtual means and helping people to confront their own mortality and that of others (Sofka et al., 2017). Current manifestations of the VDI are mainly the result of intentional recreation of the dead by the bereaved, and the two examples discussed below illustrate their role for practices related to death and to mourning.

Eugenia Kuyda, the co-founder of Luka, an artificial intelligence start-up, lost her friend, Roman Mazurenko, to a traffic accident in late 2015. During the funeral, Mazurenko's friends started discussing what would be the best way to honour his memory, with options ranging from a life-story book to a memorial website. Those options felt inadequate to Kuyda, who realised, after reading countless messages sent to her by Mazurenko throughout their years as friends, that many of those messages reflected Mazurenko's idiosyncrasies. Although Kuyda was aware of references in popular culture on digital artifacts being used to recreate the dead and understood the concerns raised in those references, she nonetheless felt that the digital remains left behind by the deceased for confronting the death of someone. After using Google's machine-learning system Tensorflow and asking the developers in Luka to create a neural-network based on Tensorflow in Russian (Mazurenko's native language), Kuyda collected the messages between her and Mazurenko and pasted them into a file in the new neural network system. The system was subsequently trained to respond as if it were Mazurenko by Luka's engineers, favouring his speech whenever possible. After some initial tests, for Kuyda, the Mazurenko bot (i.e. the neural-network system trained to mimic him) did approach the speech patterns and responses she would expect from her real friend (Newton, 2016).

The Mazurenko bot can be characterised as a VDI insofar as it is an instance of building a digital immortal using currently available technology and does not attempt to give it autonomy from its intended interlocutors. The Mazurenko bot is predominantly constituted by the relational component of the deceased, Roman Mazurenko, which was manifested through its personal messages with Kuyda. Kuyda acknowledges that the Mazurenko bot was only a vestige of a person, but believes that digital technologies have

enabled the creation of the Mazurenko bot and the future developments can enhance what can be accomplished in recreating a virtual persona of the deceased (Kuyda, in Newton, 2016).

Kuyda's decision to create the VDI of Mazurenko occurred after her friend's death, but the story of James Vlahos (2017) depicts an attempt at creating a VDI of his father since before the latter's death. Knowing his father would die soon from stage IV lung cancer, Vlahos scheduled a series of interviews with him on a number of topics that he deemed relevant for keeping his memory alive in the form of an autobiographical book, which would include his memories on the family history, education, career, and other activities. When the series of interviews concluded, he happened to read an announcement from a software company which outlined their plans to release their software for creating conversational agents. From there, he developed the idea of turning the series of recorded interviews with his father into data to create a bot of his father. In Vlahos' account, the themes of digital immortality and transcendence of death are the driving forces behind the (partial) recreation of his father as an artificial intelligence system. Moreover, they motivated his emotional investment in personally developing his father's VDI, as unlike Kuyda, Vlahos had to do it himself without a team of engineers and without a professional background in software development. Importantly for the design process, Vlahos asserts that the VDI should not be limited to his father's knowledge in an artificial intelligence system, but should also include his mannerisms (as expressed digitally), his outlook on life (which tended to be positive mixed with gloominess) and his personality (highly intelligent, logical and humorous).

As with the VDI of Mazurenko, the VDI of Vlahos' father does not possess autonomy: any updates or relationship to the external world is dependent on who has physical and digital access to the VDI. Similarly, the manifestation of the programme as Vlahos' father mostly appeared when Vlahos himself and other members of his family were the users; other users, not having that specific relationship with the VDI, generated inputs that the VDI could not process accurately, leading to the production of incoherent statements by the algorithm. In a sense, Vlahos' story highlights the relational component of an identity embodied in the VDI. In this version, at least, there was no attempt at fully recreating the person in the form of an artificial intelligence system, but to match the deceased's traits when in interaction with the living.

The cases of Eugenia Kuyda and James Vlahos offer some insights about these emergent attempts at Human-VDI interaction. For one, the limitations of current digital technologies restrict the extent to which Turner's (1988) social interaction framework could be applicable in the present. The complexity of the algorithms did not include in their code aspects that gave different motivations to the VDIs beyond expressing the appropriate text response to their respective interlocutors. Likewise, the structuring processes were also not displayed from the VDIs' side, as they lacked any awareness of context and were confined to software, without the possibility to influence the physical world. From the human interlocutors' perspective, however, all the three elements of social interaction could be identified, although structuring processes had reduced importance due to the text-based medium of communication. Hence, while for the human interlocutors the situation could, to an extent, be considered interactive, the current forms of the VDI do not exhibit the complexity required for instances of social interaction to take place. In consequence, while the present phenomenon (at least, as seen in Kuyda's and Vlahos' stories) cannot be characterised as social interaction, the level of sophistication of the artificial intelligence systems in the future could allow encounters between a human being and a VDI to be classified phenomena of social interaction.

Another insight to be derived from these accounts is how the motivations behind the creations of the VDIs – to better mourn the deceased and to allow them to remain in the social world after their physical deaths – drive the meaning created by the living interactants. Both Kuyda and Vlahos, the main creators of their respective VDIs, acknowledged the artificiality of the interaction, yet still considered it worthwhile and they were reminded of good experiences their loved ones. Moreover, both felt comforted to an extent by the presence of the deceased in their digital, interactive manifestation. This might be explained by their emotional attachment to the deceased they were trying to recreate, referring to the VDIs not as code or as algorithms, but as "Mazurenko bot" (for Kuyda) and "Dadbot" (for Vlahos), and affirming the presence of traces of their loved ones within the VDI. Although it was a limited experience, the language used by the VDIs' main interlocutors indicates they perceived the presence of both Mazurenko and James Vlahos' father within the VDIs.

A final insight is that what seems particularly relevant in Kuyda's and Vlahos' stories is not the ability to be fooled by the system, but to get to experience the emotions they felt when interacting with their loved ones. Furthermore, the degree to which the VDIs

allowed the deceased to remain in the world of the living was considered an important goal.

4.4   Conclusion: Human-VDI interaction in the future

The current forms of the VDI have been deemed to resemble the individual they are modelled after in meaningful ways but have significant limitations in text-based interfaces. Eugenia Kuyda's story described the way a VDI was helpful for coming to terms with the sudden death of a friend, while James Vlahos' depicted a son's struggle to grant his deceased father an ongoing presence in the world of the living. If this was desirable under present technologies, it is reasonable to think that as the artificial intelligence systems, hardware and user interfaces evolve in the coming decades, deeper integration and better outcomes of interaction with a VDI can be expected. The dynamic development of digital technologies and their increasing integration into everyday life offers reason to believe that greater acceptance in their use for confronting death and undergo mourning might await in the future. The rest of this thesis explores what the different futures of social practices of Human-VDI interaction might look like, and how they affect the way subjects face mortality and loss.

5   RESEARCH METHODOLOGY: MATERIALS, METHOD AND ANALYTICAL CATEGORIES

5.1   Research material: semi-structured interviews

The empirical research material gathered for this thesis consists of semi-structured interviews with thirteen (13) research subjects. Interviews, as a technique of qualitative data gathering, were deemed suitable for this research project because they would yield data that facilitated its analysis in discursive terms; discourse, as seen in the literature review, is central insofar as it structures the ontology of the subjects' social world (Laclau and Bhaskar, 1998). This meant that the researcher would gain depth into the various understandings, expressed via language, that the interviewees held on of death, technology and their relationship to each other. In consequence, diversity in terms of the profiles of the interviewees was required, as diversity leads to different worldviews and discursive articulations.

Because social practices related to death and technology, as well as personal perspectives on both topics, are influenced by culture and age (Palgi and Abramovitch, 1984; Robben, 2004; Helsper and Eynon, 2010; Jacobson et al., 2017), diversity in terms of cultural background (for this research, it was mostly based on nationality) and in terms of age was a guiding principle for selecting potential interviewees. Additionally, pluralism in terms of educational and professional background of the interviewees was considered relevant, as years of being within a specific domain of knowledge and professional practice could shape, to varying degrees, the worldview the subjects hold. Although not considered specifically relevant in terms of how it affects views on death and technology, balance in terms of the gender of the interviewees was also sought.

Because one of the main purposes behind this research project was to construct, based on the interview data, the images of the future that possible human interlocutors of the VDI have regarding social practices based on Human-VDI interaction, the interviewees were selected in their role as subjects who, in 2040, *might become interlocutors* of the VDI or would otherwise be part of a sociotechnical network wherein the VDI, as a technological creation, plays a social role.[13] This means that the interest resides not in the

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[13]   This did not exclude people who might be professionals or academics in the technology industry or in the social sciences from participating. It just means that they would not be interviewed in their role as

forecasting of the presence of such technology in 2040, nor in assessing from expert views the likelihood of Human-VDI interaction in 2040 and its social consequences. Rather, it resides in exploring alternative ideal types of the "user experience" of the VDI by focusing on the kind of features the VDIs have in the context of the 2040 social world and on the meaning attached to the device and to the social practices wherein Human-VDI interaction is central. Furthermore, the social implications of these questions are examined through a Death Studies lens, looking into how social practices based on Human-VDI interaction influence the way human beings relate to mortality and to the mourning process.

As the object of study (i.e. images of the future of social practices based on Human-VDI interaction) of this research project is best explored under an interdisciplinary perspective, insights from the different fields of study were also taken into account for the process of recruitment, for interview design and implementation, and for data processing and analysis.

In terms of recruitment, because the discourses on death and the personal perspectives on Human-VDI interaction were deemed to be of personal significance and carried emotional weight, recommendations for qualitative interviews from the field of Death Studies were used for getting knowledge of best practices. Rosenblatt (1995) points to different ethical issues to consider for interviews focused on death: recruitment without coercion, causing (emotional) pain, having informed consent, crossing the boundary between therapy and research, unintentional reinforcement of dysfunctional family dynamics, and revealing of previously unstated feelings or issues of sensitive nature during the course of an interview. While Rosenblatt's recommendations were based on his research experience on bereaved families who had experienced the deaths of loved ones and such events were going to be the topic of discussion, this research project differed from that in that an actual past event of death of a loved one was not the focus. Instead, the death of a person (in this case, the one who would become the VDI) would be assumed as a background event in the context of the interview – focus would be diverted from it and directed towards interaction with the VDI. Nevertheless, the death *was* an important background event that would alter how the interviewee approached the VDI, as opposed to how he or she would approach any other Virtual Human.

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experts. Instead, those interviewees who had a background in either or both of those domains of expertise were asked questions in their role as possible interlocutors or users, and it was their personal perspectives that mattered, not their expert view.

For this reason, Rosenblatt's insights were still relevant to a degree, specifically those related to participation without coercion, causing unnecessary emotional pain, and having informed consent. This is because an imagined event can have both cognitive and emotional complexity and provoke emotional reactions comparable to those of recalling an actual event. For the recruitment phase, an invitation was drafted that specified the research topic, the different themes of the interview, and clearly stated that thinking about the (mostly imagined, but in some cases actual) death of a person within their network of personal contacts was going to be required. Moreover, the element of emotional pain was specified in the interview invitation, with "emotional distress" mentioned as a possible consequence of participating in it. By accepting to be interviewed after reading the invitation, the interview subjects would therefore be aware of potential emotional pain that could be experienced in the course of the interview.

Under some circumstances, such as getting qualitative information on sensitive issues, establishing trust in a researcher-participant relationship (McGinn, 2008) is required. Because death-related topics can be considered sensitive issues, this approach has also been recommended for qualitative studies within the Death Studies field (Rosenblatt, 1995; Ribbens McCarthy, 2006; Coombs, 2017). For this reason, a combination of convenience sampling and snowball sampling was used to get the potential interviewees. The procedure was to contact acquaintances and/or friends of the researcher who had expressed personal interest either in issues of technology or issues related to death *and* who fit the profile regarding diversity (in terms of age, nationality, gender and professional background). The researcher's previous and current experience as student in three different universities known for the number of international students enrolled in them was useful in this regard. However, to reduce the appearance of homogeneous perspectives surrounding the concept of the VDI, the researcher also asked some of his contacts to ask friends or acquaintances of theirs who fit the profile in terms of diversity if they would be interested in participating. The purpose of this was to channel the trust in the relationships through the network – if the researcher was trusted by the person mutually known by him and the potential interviewee, the latter might be willing to grant him his/her trust. Interview invitations were sent by e-mail to the potential interviewees, with the exception of two, one of which was asked in person and read a printed version of the invitation, and another one who asked to be sent the invitation via a social networking site.

In turn, insights from the field of Futures Studies, as well as from general qualitative research methodology, were the main influence for the interview design. In addition, the

researcher added a few elements intended to stimulate the interviewees' imagination. Within the field of Futures Studies, it can be argued that narrative occupies an important role in scenario development insofar as it allows a certain sequence of events to be mapped out and the main actors in those events to have relationships with one another, intentionality and an evolution according to the consequences of the events that occur. In addition, Critical Futures Studies highlights the transformative aspects of narrative by allowing participants to reach deeper levels of social reality in order to enact social change (Milojević and Inayatullah, 2015). However, the approach taken in this research toward narrative has not been that of scenario development or of transformative aspects. Instead, it was based on a minimal definition of the concept: "the telling of a story; the succession of events is (often) given in chronological order" (Jarva, 2014, p. 16). The reason for adopting the minimal definition of narrative followed practical reasons: given the relative novelty of the concept of the VDI, the interviewees might have difficulty placing themselves in a narrative with it. As such, taking out common elements of narrative such as plot and conflict could facilitate the interviewees to outline aspects of characters (themselves, the VDI and third parties), setting, and sequence of events within which the interaction takes place. Questions related to narrative were focused on getting the interviewees to describe themselves in a given day in 2040 and how they would imagine their personal Human-VDI interaction to be during the day, as well as motivations behind such interaction and the resolution to that interaction. Though some interviewees gave these elements out of order, clarification questions asked by the researcher allowed for further narrative elements to be obtained. This, in turn, was reflected in the narrative construction of the ideal types of social practices centred on Human-VDI interaction.

To get the interviewees to think about themselves and the future world they would inhabit in 2040, one in which the VDI would be present, two imagination elicitation exercises were integrated. The decision to integrate these two exercises was based on insights based on the use of photographic and pictorial elicitation in social research, which suggest that they promote participant agency, reveal feelings in relation to certain contexts, elicit memories and emotional responses, alleviate interview fatigue and miscommunication, and provide interview focus (Banks, 2001; Harper, 2002; Banks, 2007; Richard and Lahman, 2015). The first exercise consisted of showing the interviewees five images and asking them to imagine going into the places depicted in the images and describing what they saw and what they would do while exploring those places. Although this set of images was not directly related to the content of the interview, the aim of this

exercise was to get them to think in more detail about the spatial settings of an interaction, to get them used to describing a sequence of events, and to reveal preferences for certain contexts over others. The second exercise was a visual representation of the VDI in three different images, using generic icons of people and technological devices (a computer and a robot) accompanied by a description of the content in the images. While describing the concept, they were asked to imagine themselves in the situation which each picture described. This would allow them to understand the concept and to imagine the main elements involved in Human-VDI interaction. These latter three images are found in Appendix 2.

Additionally, the format of the interview would be that of the semi-structured long interview, as outlined by McCracken (1988). This was taken more as a guideline in terms of preparation by the researcher, rhythm of the interview and sequence of questions, as his suggested approach – one mostly driven by the interviewee – could be problematic to make the interviewees think about a concept which might be foreign to them (i.e. the VDI). In the end, the researcher adopted a more interventionist approach to the interview process, with him providing the basic parameters within which the interviewees would picture themselves in. As such, images of the future resulting from this research cannot be said to be purely or mostly the interviewees'; they are a co-creation between the researcher and the participants, inasmuch as the former gave some central ideas about possibilities in the future (e.g. the common practice of Human-VDI interaction) and the latter explored the possibilities surrounding those ideas.

A comment on the sequence of questions is also relevant here: the questions that would yield the more substantive content related to the interviewees' discourse and worldview were strategically separated by the more imaginative sections. The interview was structured with an initial presentation from the researcher and the interviewee, which was followed by questions on the themes of death and technology. Next, the imaginative questions with the pictures were asked, and finally their narratives and their opinions on their possible interaction with a VDI were requested. This was done to energise the participants and to allow them to become more engaged in the interview after deep thought in the first section, and then to complement their imagined future interactions with the VDI with the general opinions on the possible social consequences of this concept being integrated into everyday life.

Regarding interview implementation, again insights from the field of Death Studies were integrated. Specifically, Coombs' (2017) recommendations on choosing a place that

felt comfortable to the participants were considered. The interviewees had the opportunity to choose the location of their preference. In physically present interviews, most of them selected common areas in places known both to the researcher and the interviewee, although there were three exceptions: one who chose a coffee house, one who chose his workplace office, and one who chose her home. For those interviews which were carried out using online means, the location was not an issue, with the interviewees by default choosing their preferred location. Thirty-five (35) potential interviewees were sent an invitation, although due to the themes to be explored, scheduling issues and problems with the medium of communication (for online interviews), the final number of interviews was thirteen (13).[14]

The interviews were carried out in English, or in Spanish if the interviewees were more comfortable (Spanish being a shared language between the researcher and some of the interviewees). They took place between the months of September 2019 and January 2020. Table 1 shows the interviewees, as well as their profile in terms of diversity (nationality, age group, professional and educational background, and gender). For research purposes, it was decided that a way to identify the interviewees within the text was needed. Therefore, their names have been changed for privacy reasons and to comply with legal and ethical research standards.

Table 1: Profiles of the interviewees

Name	Nationality	Age range	Professional and educational background	Gender	Notable facts
Jakov Ouromov	Bulgarian/ Russian	18-29 (Young adult)	Service industry	Male	Single, immigrant, Christian
Anahita Golshiri	Iranian	18-29 (Young adult)	Social work	Female	Married, non-religious
Juan Ignacio Alcántara Montesinos	Mexican	18-29 (Young adult)	Robotics and Digital Systems	Male	Single, atheist
Wai Ling	Chinese	18-29 (Young adult)	Consulting and tourism industry	Female	Immigrant, Buddhist
Alberto García	Mexican	18-29 (Young adult)	Economy and social policy	Male	Single, Catholic
Olivia Mendoza	Uruguayan / Italian	18 – 29 (Young adult)	Economy	Female	Single (with romantic partner)

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[14] The thirty-five potential interviewees included ten (10) potential interviewees from the African continent. Lack of interest in the topic, scheduling conflicts and lack of response to the invitation resulted in no African subjects being interviewed for this research, a major limitation in terms of empirical data.

Dac Kien Hyunh	Vietnamese	18-29 (Young adult)	Business management and commerce	Male	Single, Buddhist
Thomas Hubbard	British	18-29 (Young Adult)	Biology and ecology	Male	Single (with romantic partner), non-religious
Carolina Olabuenaga	Colombian	30-59 (Mature adult)	Social robotics	Female	Married, non-religious
Karl Suotamo	Finnish	30-59 (Mature adult)	Cultural studies	Male	Married, has children, non-religious
Natalia Gómez	Mexican	30-59 (Mature adult)	Business management	Female	Single, has one child, non-religious
Antoine Thibeault	French	30-59 (Mature adult)	Academia / Political Science	Male	Married, has one child, non-religious
Verónica Castro	Mexican	60+ (Senior adult)	Dentistry	Female	Married (2nd marriage), has two daughters and one son, one stepson, Catholic

Of the thirteen interviews, eleven (11) lasted between 60 and 120 minutes, as was designed. One of them lasted around 40 minutes because of the limited availability of the interviewee, and one of them lasted around 140 minutes, as the researcher and the interviewee moved from one location to another during the interview, but the interview continued while both were walking to the second location.

For data processing, each interview was recorded in audio. All of the interviews were then transcribed by typing manually in Microsoft Word. Although there is software available for data transcription and data analysis, doing the transcription manually allowed the researcher to identify the themes while doing the transcription, and reflect on the best material from each interview. Coding was also done at this stage: quotes that reflected relevant aspects of social practices based on Human-VDI interaction, discourses on death and technology, the mourning process and emotional responses to certain ideas were highlighted. Because the researcher was aware of the themes while interviewing the participants and made some notes immediately after, coding of the themes in the transcribed interviews was straightforward. In addition, text relevant to the layers of analysis according to the CLA method (described below) was identified during the coding process.

5.2 Approach to data analysis: Causal Layered Analysis (CLA) method from Futures Studies research

Causal Layered Analysis (CLA) is a qualitative approach to research from the field of Futures Studies, specifically Critical Futures Studies. Depending on its use, CLA could function as a method, as an analytical tool, as a technique to Futures Studies research or even as a pedagogy (Inayatullah, 1998; Inayatullah, 2004a; Turnbull, 2006; Inayatullah, 2017; Rubin, 2017). Over the years, it has developed a research program around it, producing scholarly literature on a variety of themes, including environment, resources, work, finance, conflict and peace, health, community and well-being (Inayatullah and Milojević, 2015). The decision to use CLA as a central part of the methodological approach to the study of images of the future of social practices focusing on Human-VDI interaction (possibly) taking place in 2040 is due to its potential for qualitative Futures Studies research (particularly those where text is the main source of data, see Kaboli and Tapio, 2018). Moreover, it was considered suitable for revealing how social practices acquire meaning because of its influences from poststructuralist thought. As a method, it is committed to studying the depths of images of the future by revealing underlying discourses /worldviews and myths/metaphors. As such, it is helpful in uncovering discourses related to death and mourning, foundational metaphors of personhood and mortality, and their combination with discourses on technology and other discourses.

As reflected in Sohail Inayatullah's article, "Poststructuralism as method" (1998), Poststructuralism as a school of thought provides the main influence for the design of CLA and for its use as a method, most particularly in its relation to the epistemes or historical frames of knowledge from Michel Foucault and the notion of deconstruction from Jacques Derrida. Other notable influences for CLA are macro-history and postcolonial multicultural theory, and authors such as Johan Galtung and P.R. Sarkar. Similarly, from the field of Futures Studies itself, Richard Slaughter's categories of different futures according to their depth were incorporated into the CLA method (Slaughter, 1989; Inayatullah, 2004a; Inayatullah, 2009).

CLA considers opening up the present and reinterpreting the past to create alternative, transformative and emancipatory futures as its main task, instead of forecasting or predicting futures. It aims at problematisation – undefining the future by identifying "how an issue has been constructed as an event or trend in the first place as well as the 'cost' of that particular social construction—what paradigm is privileged by the nomination of a

trend or event as such" (Inayatullah, 1998, p. 817). However, in contrast to common post-structuralist approaches to scientific enquiry, it does not approach research in Futures Studies only from a horizontal perspective and does not consider all frames to be of equal value, an approach which could veer too closely into relativism. This horizontal perspective focuses on identifying oppressive assumptions and emancipatory alternatives to social and cultural life, while CLA complements this by also adopting an understanding of reality as vertically constructed where moving downwards and then upwards in the layers of social reality results in a deconstructive and reconstructive process of a variety of futures.

The vertical reality envisioned by CLA is comprised of four layers. They are, from the more superficial to the deepest: litany, system / social causes, discourse / worldview, and myth / metaphor. The litany presents the most visible aspects of social reality, with short-term perspectives on the future, while the myth/metaphor presents the most hidden aspects of social reality and is related to temporal changes that occur over the long-term. The images usually conjured when thinking of a pictorial representation of the CLA method are that of a pyramid (Inayatullah, 2004b) and an iceberg (Inayatullah, 2017; Kaboli and Tapio, 2018). Both images offer visual representation of layers with different degrees of visibility, with litany being the first layer at the top, followed by system/social causes as the second layer, then the discourse/worldview as the third layer, and finally locating the myth/metaphor at the bottom.

Of the four layers, litany presents problems in quantitative terms via trends which are usually exaggerated for political purposes or for diffusion by news media. Although it is superficial, it is not inconsequential – it might generate apathy or helplessness (Inayatullah, 1998), and becomes the official description of a social phenomenon. Arguably, this description is useful for the researcher when trying to identify power relations, because those who stand to benefit from such descriptions might be considered the powerful social actors in a given context.[15] However, as Rubin (2017, p. 261) argues, there is no use in attempting to gain meaningful theoretical insights from the litany.

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[15] This is an instrumental use of litany. The researcher identifies the litany and uses it as an entry point to get an idea of who are the actors expressing themselves in this way. This links to the second layer, where the actors in a system are identified, and to the third layer, where discourse and power is a predominant theme.

The next layer, the system / social causes layer, identifies problems, usually of short-term nature, and its different dimensions (economic, cultural, political, historical, environmental, and so on). The problems are usually expressed in quantitative terms, and these are given interpretation and linked to one another. As such, "this level excels at technical explanations as well as academic analysis. The role of the state and other actors and interests is often explored at this level" (Inayatullah, 1998, p. 820). Further, the results of this layer often focus on the future itself and the reasoned justifications for the future phenomenon under scrutiny. According to Rubin (2017, p. 261), while technical knowledge of the system is desired and results are seen as the most valuable output, depth and critical choice are lacking at this level, given that the assumption is often to operate under existing (or evolving) structures and procedures, instead of challenging them and crafting other alternatives.

Within the third layer, that of discourse/worldview, "discerning deeper assumptions behind the issue is crucial here, as are efforts to re-vision the problem" (Inayatullah, 2004a, p.12). This is because discourse, as understood from a Poststructuralist perspective, goes beyond causation and mediation of an issue to form a constitutive aspect of it by way of its framing. Therefore, exploring the power of ideology, worldviews as expressed in civilizations, and epistemes is central in this layer. Methodologically, a way to access the discourse / worldview content is to "search for deeper positions that create notions of collective identity" (Inayatullah, 2004, p. 12), with the decision of which discourse to use (stakeholder, civilizational, ideological or epistemic) being context-dependent. It is based on these different discourses that the horizontal dimension of analysis of CLA emerges – different discourses yield different institutional configurations and social practices. In consequence, the images of the future or scenarios also become diverse.

Finally, the fourth layer, that of myth/metaphor, is the deepest and comprises those unconscious, collective archetypes of culture. They might take the form of stories which structure deeply held cultural beliefs. In contrast to the previous layers, the myth/metaphor layer "provides a gut/emotional level experience to the worldview under inquiry. The language used is less specific, more concerned with evoking visual images, with touching the heart instead of reading the head" (Inayatullah, 2004a, p.13). Within this layer, the researcher needs to step back and examine rooted assumptions about fundamental concepts. For instance, would time be linear, circular or resemble a spiral? What are the roots of agency and how can it be expressed? What is consciousness and how does it structure reality? What is the core manner in which human beings relate to one another?

These questions are not extensive, yet thinking about them offers points of entry to discover what are the myths and metaphors that are the foundations of certain images of the future or scenarios. Rubin (2017, p.263) identifies several myths that could be found in this layer, such as hero myths, transformation myths, origin myths, victim and saviour myths, and so on.

As previously mentioned, CLA can be used in a variety of ways. While the commitment towards transformation and emancipation is usually reflected in CLA in its use as an overall method and as a technique for data gathering (Milojević and Inayatullah, 2015; Inayatullah, 2017; Minkkinen et al., 2019), the approach taken in this thesis is to use it as a data analysis tool. This decision follows practical and theoretical considerations. On the practical side, an aim of this research project was to discover the images of the future held by subjects of different ages, cultural contexts and professional and educational backgrounds on the topic of social practices based on Human-VDI interaction. As such, the researcher needed the interviewees to focus on futures wherein Human-VDI interaction *was* a common element to be found. If the transformative and emancipatory approach was taken during the data gathering phase (i.e. during the long interviews), the interviewees could have thought of images of the future where Human-VDI interaction was absent, and the interviews could have gone on to different paths where the data obtained would not be useful for the aims of this research. On the theoretical side, the layered account of reality offered by CLA allows the researcher to make the argument that a phenomenon such as social practices focused on Human-VDI interaction can only become commonplace within specific discursive articulations, with other kinds of practices concerning death and mourning (and its potential relationship with technology) emerging from different discourses. In more explicit terms, CLA allowed the researcher to link a visible phenomenon (social practices focused on Human-VDI interaction) to less visible but constitutive aspects of the phenomenon (such as discourse and underlying metaphors).

A methodological addition was incorporated into this version of the CLA as a data analysis tool. In this case, it is argued that the system/social causes layer (wherein social practices centred on Human-VDI interaction can be located) and the discourse/worldview layer can be linked more explicitly by incorporating the Logics of Critical Explanation (LCE) methodological approach of Post-Marxist discourse theory (see chapter 3, discourse theoretical section on death) to the analysis. As described in the interdisciplinary literature review, death, mortality and mourning can be analysed through a discourse theoretical perspective. In addition, the way these concepts are discursively articulated and

the positioning of subjects in relation to discourse provide the meaning-generating framework for human interlocutors in relation to the VDI. The LCE approach allows some practices of Human-VDI interaction to be characterised as being governed by specific discursive social logics, is useful for revealing the narratives subjects respond to during Human-VDI interaction via fantasmatic logics, and makes it easier for antagonism to be addressed as a phenomenon occurring between competing discourses via political logics (Glynos and Howarth, 2007; Glynos and Howarth, 2008).[16] In other words, while CLA acknowledges questions of power and alternative discourses, the identification of antagonism and discursive struggle is mostly absent within the deeper layers. The LCE approach could bridge this gap by specifying that while some discourses are alternative in a manner that implies a variation or a difference in content, there are other discourses which are not only different but are also marginalised, opposed to or in conflict with the hegemonic discourses.[17] It is important to stress that this methodological addition was not intended to replace CLA as a data analysis tool – it complemented it by refining the interpretation of the deeper layers and establishing clearer links between the system / social causes layer and the discourse / worldview layer.

5.3   Analytical categories for contrasting images of the future

The conceptualisation of the social practices focused on Human-VDI interaction offered in chapter 3 displays a number of interrelated elements that constitute such practices. There are, however, significant ways in which that model can vary in its actual content, depending on the effects they produce on subjects' relationship to death and to mourning and on the context within which these practices take place. To present meaningful contrasts in the ideal types of the images of the future that resulted from the interviews, some

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[16]   An important question needs to be addressed: Are the future practices themselves governed by the discursive logics, or is it the present telling of those practices that is governed by the logics? The answer is arguably both. If the practices end up matching the present telling of them, then they will be governed by those logics. Thinking of the logics in the present, it is true that they structure the meaning in the present of the imagined future practices. But, at least preliminarily, there would not be any reason to believe that this construction of meaning would be different in general terms to the actual practices themselves (assuming, of course, that the practices exhibit the features depicted in the images of the future). This is because meaning is structured by discourse, and in describing something, meaning is assigned to the phenomenon being described. This is applicable for both phenomena that reside in the present and imagined future phenomena, which are also described through language.

[17]   To some extent, CLA already does this, as it offers critique on a variety of different futures which do not offer emancipatory alternatives. In my view, however, this is mostly assumed by specifying how the content relates to emancipation (by either obstructing it or working towards it), and not by any specific theoretical mechanism that establishes conflict between discourses, something which the LCE framework covers by bringing to the forefront questions of hegemony and antagonism.

elements had to be abstracted from the conceptualised model and established as analytical categories whose content varied in each image. In other words, the analytical categories had to be present in all the images of the future that were constructed from the interview data, but the specific content of each analytical category in a given image of the future was different from the content of the analytical categories in the other images. These analytical categories do not replace the conceptualised model of social practices of Human-VDI interaction; instead, they present the hollow structure of each image of the future, with the data gathered from the interviews providing the content of the structure.

There are five analytical categories which were deemed to be the most relevant for providing contrasts in the ideal types of the images of the future. These are the following:

1) Continuing bonds. It focuses on how the living might continue the relationship with the deceased in some way or form.

2) Mourning process. This category focuses on how the living come to terms with the reality and permanence of death, and the characterisation of the process from the dislocation caused by the death event to either the concealment or the acknowledgment of a) discourse's radical contingency, b) the affective investment in fantasmatic narratives, and / or c) the material, emotional and identificatory support the deceased provided for the living.

3) Degree of humanlike interaction. This category concerns the way the human interlocutors approach their interactions with the VDI, in terms of how they think of what the nature of the VDI is and/or how they act towards it. These leads to different forms of interaction, where applicable, or alternative forms of human behaviour towards the VDI.

4) Setting of interaction. This category has two different dimensions to it. The more visible one and relatively easy to determine is the spatial and temporal environments and conditions under which Human-VDI interaction occurs. The less visible one – and one which may transcend a single physical space and timeframe – is subjective dimension, wherein the human interlocutor assesses his or her interaction with the VDI as taking place within a private setting or a public setting. A public setting might imply either in plain view of many others, or an institutional / organisational environment within culturally appropriate timeframes.

5) Reasons for immortalisation. This category comprises the reasons why the human interlocutors decided to engage in interaction with the VDI, as an avatar of the deceased individual, or why they refused to interact with it. It focuses on why,

through interaction with a VDI, the human interlocutors choose to immortalise a deceased person, or the way the original individual is socially treated after death in the absence of the VDI.

In the next chapter, the narratives that constitute the content of each ideal type of the images of the future are described, and their elements examined through the CLA method. The deep examination enabled by CLA yielded not only four different ideal types of images of the future that display social practices of Human-VDI interaction, but revealed different ways in which people in 2040 would relate to issues of death and mourning as expressed via their interactions with the VDIs.

5.4   Methodological limitations

This research presents some limitations that are both internal to the methodological approach taken and external to it. In terms of the data gathered, the interviewee profile, while diverse and valuable in getting different perspectives on Human-VDI interaction, was still restricted in terms of diversity. Particularly, senior interviewees (those aged 60 and older) were lacking, with only one agreeing to be interviewed. This is derived from the linguistic limitations of both the researcher and the interviewees, given that they would need to speak to each other in the same language and be fluent in it. The researcher can speak fluently in English and Spanish but cannot communicate adequately in other languages. Senior interviewees, unless they were part of a globalised industry and/or regularly interacted with people from other cultural contexts and nationalities, are unlikely to have the linguistic skills to express themselves confidently in a foreign language in an interview setting. Additionally, it is not an unrealistic assumption that some seniors might be uncomfortable talking about death, mortality and mourning. This was in fact expressed by the sole senior interviewee in this thesis. This assumption made the researcher hesitant to try to actively recruit other senior interviewees, as causing unnecessary distress to the participants would be unethical.

Another limitation in terms of the interviewee profile is that the perspectives of African people are not accounted for. Although effort was made to contact several African people who had expressed interest in this topic or who were acquaintances or friends of the initial interviewees, they all either declined, were unavailable or did not respond to the invitation. Therefore, African perspectives on death, time and technology might be absent from the ideal types of images of the future presented in this thesis.

A final limitation regarding interviewee profile relates to the fact that, because some interviewees were recruited by following the snowball sampling technique, the views that constitute the basis for the images of the future are mostly presenting the perspectives of a professional, well-educated class of individuals. Perspectives from indigenous people, people living in poverty conditions, and those without a formal education are excluded, which might leave out other ideal types regarding how these groups, among others, would engage with the VDI in an encounter with it. However, the different images of the future suggest that homogeneity is not an issue, as there is at least one image that challenges hegemonic discourses within which social practices focused on Human-VDI interaction are performed.

Another limitation concerns researcher positionality and how this relates to the use of CLA as a method. Although the researcher is Mexican and is well aware of cultural differences between Europe and Latin America as geopolitical regions, he has many years of education in Western institutions, and his academic perspectives are heavily influenced by the Western project of modernity. As such, by using CLA as a data analysis tool, this Western and modern perspective filters through the analysis and interpretation of data. This issue notwithstanding, a critical stance towards modernity and Western views is also present, to a lesser extent, in the content interpreted via CLA.

A final limitation might be related to the ideal type framework adopted for classifying the images of the future. Because ideal types are abstractions, their content is based on similar patterns identified in each of the interviews. However, as with any social phenomenon, the images of the future rarely expressed elements of only one ideal type, with elements of two or even three other ideal types often having secondary or background presence in an interview. For this reason, it could be argued that the abstractions distort the message of the images of the future as it is expressed by the interviewees. Nevertheless, as stated by Rubin (2013, p. S40), a person may simultaneously hold multiple images of the future which, by virtue of being expressed by a single person, may conflict with one another or manifest contradictory elements. To remain faithful to each interview in its integrity, the most salient elements and the overall message of the interviewee were taken into account for the construction of the ideal types. Quotes from their interviews are therefore predominantly found in only one ideal type, unless they described elements of equal importance for other ideal types.

6 IMAGES OF THE FUTURE OF SOCIAL PRACTICES FOCUSED ON HUMAN-VDI INTERACTION: A CAUSAL LAYERED ANALYSIS

6.1 Four ideal types: Ambivalence, Restoration, Concealment and Autonomy

Four images of the future were constructed based on the data. The first step was specifying the criterion that is used to establish substantive differences between the ideal types of the images of the future of Human-VDI interaction and its associated social practices in 2040. The criterion for the separation of images of the future into four distinct ones is the relation the Human-VDI interaction has to death and mourning practices in 2040. More specifically, *the criterion for separation focuses on the different ways the Human-VDI interaction acknowledges (or not) the implications of death and facilitates (or complicates) mourning*. As stated in the previous chapter, the analytical categories constitute the structure of the images of the future of social practices focused on Human-VDI interaction. Taken together in an image of the future, the content of these categories offers tentative answers for the effects of Human-VDI interaction on the subjects' manner of relating to mortality and to mourning.

Following this criterion, there were four ideal types constructed from the data, based on the overall tone of the narrative and a theoretical analysis from the insights presented in chapter 3. Different elements of the envisioned social practices were brought together according to the opinions expressed by the interviewee about potentially interacting with a VDI, with commonalities between them revealing patterns that could be condensed into an ideal type. The researcher's own knowledge was then used to place some elements according to their thematic correspondence with the rest of an ideal type's elements. Briefly summarised, the four ideal types are:

1) Ambivalence – The interaction between human and VDI is of a personal nature. It takes place mostly in a setting that is considered (reasonably) private by the human interlocutor, which may constitute part of everyday life or be central aspects of personal rituals. The name "ambivalence" points to a mixed acceptance of death, where the ambivalent behaviour is based on the normalisation and routinisation of the VDI in everyday life. Parallelly, it is also an acknowledgement towards the permanence of death, yet it is set in the background of the subjects' mind. It is thus a simultaneous reminder of love and loss. Within this ideal type,

users want the functional and/or fantasmatic benefits of the dead while acknowledging that it will be an incomplete experience.

2) Restoration – Human-VDI interaction is neither normalised nor routinised as part of everyday life but is focused exclusively on mental healthcare and/or on helping the human interlocutors face death-related issues and solve problems of personal nature. The goal of having a person interact with a VDI is to orient him or her towards death acceptance: acknowledging the fragility of life, the possibility that it could end at any moment, but still engaging in life-sustaining activities. Another possible goal would be to guide the person in his or her mourning process, supervised by either a close social contact (family member or friend) or a mental health professional, with the acceptance of the radical contingency of the subjects' fantasmatic narratives and the subjects choosing to integrate the loss as part of their lives being successful outcomes.

3) Concealment – Human-VDI interaction is also highly normalised, and it takes place within institutional contexts. The interaction here is of instrumental nature and to minimise the disruption that a death event would have on an organisation. The intended aim of the social practices focused on Human-VDI interaction within this ideal type is to conceal the permanence of death by ensuring the continuity of institutional dynamics and minimising risks caused by the absence of the original individuals. Because death goes unacknowledged, subjects cannot face its implications consciously.

4) Autonomy – In this ideal type, there is an active avoidance of interaction with the VDI. Though Human-VDI interaction is present in the contextual background of this image of the future, the subjects here aim to achieve an acceptance of death by traditionally culturally acceptable means. Autonomy here is reflected in both the personal journey of the mourning process[18], and in autonomy from advanced electronic technology. Regarding autonomy from this technology, the expectation here is that any kind of relationship the living have with the dead should not be mediated by modern electronics, but instead be the result of a social and a personal process.

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[18] On the idea of the personal journey of mourning, the adjective "personal" does not intend to imply the mourning process only occurs in an individual level, in the privacy of one's thoughts. The experience of mourning someone is unique for everyone, because it is quite dependent on the specific relationship two people had. Mourning, as is discussed in the literature review, is personal, relational, and communitarian and even political.

Of the four images of the future, the Ambivalence one is the most extensive, as it involves a greater degree of complexity regarding the acknowledgement of the implications of death and of mourning by its subjects. Meanwhile, the Concealment image is arguably the least developed image because few interviewees specified the different implications of the presence of the VDI for organisational dynamics. This results in more qualitative empirical material being used for some images than for others, leading to an imbalance in the amount of detail among the images of the future. Despite this, because the interviews yielded enough contrasting content for the analytical categories, four images were obtained.

Although a more extensive description in narrative form will be provided for each ideal type in each of the following sections by specifying the content of the analytical categories, the above summaries of the images of the future should provide meaningful contrasts between the ideal types, allowing the reader to begin to identify different ways in which the subjects relate to death and to mourning based on how the VDI is integrated into social life. Although the integrated content of the analytical categories is described in detail to introduce each image, a comparison of their values for each ideal type is presented in Table 2:

Table 2: Content of the analytical categories for each ideal type

Analytical Categories	Ambivalence	Restoration	Concealment	Autonomy
Continuing bonds	Ongoing routinised interactive connection with the dead, personal nature. General. Externalised via technological medium.	Ongoing time-bound interactive connection, personal nature. Specific. Both internal and externalised via technological medium.	Ongoing interactive connection. Formal, impersonal. External.	Ongoing bereaved-initiated connection, personal nature. Internal.
Mourning process	Complex, ambivalent; weak recognition of dislocation.	Initially complex, later successful. Dislocation is recognised.	Blocked or complicated mourning. Dislocation is concealed.	Successful mourning eventually accomplished. Dislocation is recognised.

Degree of humanlike interaction	High humanlike interaction. Subjects acknowledge technological nature of VDI.	Low humanlike interaction. VDI understood as technological artifact.	Human to system interaction.	Rejection of interaction with VDI. VDI understood as technological artifact.
Setting of interaction	Private setting (both tangible and emotional dimensions).	Private or private-institutional (professional therapy).	Public, organisational setting.	Random, impersonal setting with VDI. Internal continuing bond in private or personal settings.
Reason for immortalisation	Sentimental-pragmatic.	Sentimental-therapeutic.	Instrumental.	Non-immortalisation via VDI. Other means of immortalisation.

The sensitising scheme that conceptualises the social practices of Human-VDI inter-action, located at the end of chapter 3, is meant to help the reader go through the analysis of the images of the future in this chapter. While an overview of each ideal type is presented by describing the content of the analytical categories, a theoretical analysis that integrates the insights from the interdisciplinary literature review provides the content to address in the layered analysis: after reviewing conventional discourses that might emerge in the litany layer, the characterisation of the practices start in the system / social causes layer with the core activity of Human-VDI interaction and how the different processes involved in interaction unfold in the ideal type being examined. This is followed by describing what form the constitutive elements of a social practice adopt in that image of the future. From there, the deeper discourses and metaphors of the Death-constituted society are discussed in the following layers, and the chapter ends with an assessment of hegemonic and marginal images of the future and their relevance for themes of mortality and mourning.

6.2   Ambivalence: Human-VDI interaction and orientation towards life

The Ambivalence image of the future presents a picture of Human-VDI interaction being routinised as part of everyday life in the lives of the human interlocutors. This routinisation occurs in the personal lives of the interlocutors, with the continuing bonds being personal in nature and the relationship between the living and the dead generally understood as being ongoing, not final. The Ambivalence image displays a complex mourning process, where the implications of a death event produced a dislocation in the human interlocutors' discursive reality and fantasy life; though the permanence of death is acknowledged, it often occurs in the background of the subjects' psyche, and rarely emerges in explicit ways within the social practices enabled by Human-VDI interaction. The VDI can be said to provide some comfort to its human interlocutors, and reconfigures the material, emotional and identificatory supports of the subjects by embodying them in a technological medium. Subjects, however, also acknowledge that the death event had real consequences, and the new supports embodied in the VDI are of limited nature and cannot substitute the ones offered by the original (now deceased) individual.

The Ambivalence image features a form of interaction that is perceived by the human interlocutors in humanlike terms; what this means concerning the specific technical affordances of the VDI varies from person to person, but the VDI should produce in its human interlocutor the effect of making him or her think it is humanlike and should be approached as if it were a person. The spatial environment and temporal conditions are characteristic of a private setting, with the subjective dimension being characterised by undercurrents of affection: Human-VDI interaction would take place during special commemorative occasions or in moments throughout the day where the human interlocutors would have interacted with the original individual in an intimate manner. The reason for immortalisation can be characterised as sentimental-pragmatic, given that the subjects wish to re-experience some aspects of the joy engendered by the relationship they had with the original individual, but because they acknowledge the permanence of death, they look for a technological medium to evoke generally diminished but still joyful aspects of the relationship.

The narrative pattern of the Ambivalence image of the future, abstracted from the different interviews, can be characterised in the following manner:

1) The subjects (i.e. the human interlocutors of the VDI) begin their daily activities in a private setting, usually their home. During this time, previous to work-related activities, the subjects engage in interaction with other loved ones who are alive and share their same physical setting, unless they live alone.

2) If the subjects live alone, and the original (now deceased) individual used to live with them, the subjects might engage in brief, routinised interaction with the VDI in terms of greetings. In some cases, the VDI helps them by reminding them of some scheduled activities the human interlocutors had planned for later that day or interacts with them during breakfast.

3) The subjects leave their private setting and carry out their work-related activities. If retired, they still leave their home to carry out other activities.

4) After finishing work or their other activities, the subjects go to a place where they would interact with the VDI in a conscious manner. The VDI would be a family member, a spouse or a friend. It might be their home, or it might be another location they considered private and associate with the original (now deceased) individual. They engage in interaction in a variety of ways: they talk, they might have a meal together, or do another leisure or recreational activity (depending on the technical specificities of the VDI). Although the human interlocutors enjoy this moment, there might be underlying feelings of emptiness, sadness or nostalgia.

5) The subjects decide to stop interaction with the VDI and continue with their daily activities. Unless set up in a way where the VDI has a high degree of autonomy, they do not expect to interact with it until they so wish.

This narrative pattern suggests that social practices of a personal nature with the VDI might allow for a continuation of activities they once derived pleasure from when performed with the original (now deceased) individual. The overall tone of the narrative manifested feelings of comfort, although undercurrents or sadness and nostalgia are also present though not necessarily clearly articulated. Despite a generally positive opinion of the concept of the VDI and their interaction with it, the interviewees nonetheless expressed some hesitance and concerns about the presence of the VDI in their lives, mentioning that interaction with the VDI might generate feelings of grief or lead to the appearance of mental health problems. This is where the ambivalence is expressed more clearly: because the VDI is a technological embodiment of the relational component of a person and only exists because the original person died, its human interlocutors have a conflicted relationship with it. It reminds them of moments of both joy and grief, and

though most of their interactions with the VDI orient them towards life, they also prompt hidden or unconscious tensions with death to become routinised.

6.2.1 Litany: The VDI allows the deceased to come back into the world of the living

The layer of the litany would most often highlight the benefits of Human-VDI interaction, mentioning how it allows for the living and the dead to be reunited and engage in activities together. The message conveyed in the time horizon of 2040 would share many similarities with those of the present concerning the VDI: the dead could come back and allow the living to keep them as part of their everyday life. With the VDI being commonplace, social practices focused on Human-VDI interaction would be seen as limiting the impact of death on loved ones, and perhaps could even be understood as challenging the notion that death implies the permanent disappearance of a person from social life.

Bringing families together again, after the death of one of its members, would be a central theme in the litany layer. Dac Kien, a Vietnamese young adult, illustrated this via a hypothetical example: if a son were to die and his parents missed him, "this kind of device [the VDI] can allow them to see and feel their son again" (Dac Kien, personal interview). Similarly, Carolina Olabuenaga, a Colombian adult woman, expressed: "it's definitely like an extension of life. Like what I told you, it's like a virtual reincarnation" (Carolina Olabuenaga, personal interview).

These statements showcase an apparent desire for immortality, with technology being the tool to stop the undesirable consequences of death from happening. Relating back to the anthropological insights on death, the VDI here is offering a form of symbolic immortality for the dead, one that can extend social life. The virtues of technology are exaggerated as well, with the language used overstating the actual affordances of the VDI and the way the human interlocutors engage in interaction with the VDI.

The ambivalence itself might also manifest itself in the litany layer, in this case by also highlighting the potential risks and dangers that Human-VDI interaction entails. Loss of control and mental health issues become prominent aspects of the downsides to Human-VDI interaction. Jakov Ouromov, a Bulgarian/Russian young adult, mentions: "for mental health, this is really bad because when people die, when a person dies, it is a big issue for you personally. And then having again his copy… and another person dies, and then you get her copy, and… I don't know. It just gets crazy" (Jakov Ouromov, personal interview).

Overall, one might expect the conventional discourse to generally focus on the advantages of engaging in Human-VDI interaction and having the VDI become part of the everyday routine. At the same time, other viewpoints might emphasise the problems often ignored with Human-VDI interaction. However, neither would be a nuanced perspective, with exaggerations being present in both discourses. At the litany layer, then, ambivalence comes in the form of contradictory, magnified statements.

6.2.2 System / Social Causes: The social practices integrating Human-VDI interaction in everyday life in personal settings

The system / social causes layer is concerned with the social practices centred on Human-VDI interaction. In contrast to common approaches to this layer which take a macro-level perspective in research of large social phenomena, the microsocial focus of this phenomenon requires that attention be directed to the constitutive elements of a social practice: materials, competences, meanings and connections. The analysis of these and how they affect the manner the subjects relate to death and mourning is the focus of this layer.

As stated, Human-VDI interaction is the focal activity that, as routinised into everyday life, becomes a social practice. The motivational processes of the interaction are intimately linked to the reason for immortalisation of the deceased individual in the form of the VDI. In this case, the motivation behind the interaction resides in being able to recall and re-experience previous moments with the original (now deceased) individual and derive positive affects from them. For the VDI, the motivational processes would entail fulfilling its coded parameters for interaction. As stated by Juan Ignacio Alcántara Montesinos, a Mexican young adult, the interaction with a VDI may help "you remember, or relive, or go through the same experiences you had with other people. I believe that feeling or experience can be appealing" (Juan Ignacio Alcántara Montesinos, personal interview). While this could be considered a "healthy" way of engaging in Human-VDI interaction, there is another reason which displays the ambivalent aspect of this image of the future: bringing back the dead into embodied form via technological means as a way to cope with the loss of someone. This is expressed in Carolina Olabuenaga's remarks: "I would really try and see how I feel about it. Only until you lose someone and see how they interact with it [the VDI], could you say with more certainty" (Carolina Olabuenaga, personal interview).

The structuring processes in the Ambivalence image indicate that the categorisation of the interaction between human interlocutor and VDI would fall under "personal" framings of an encounter. Regionalisation processes as part of structuring processes are linked to the setting of the interaction, in this case a private setting. As is the case, not only is the place a location that the subjects consider personal and comfortable, but it is often only populated by themselves, the VDI and others who are close to them and also used to have a close relationship with the original individual. This is best illustrated by Jakov Ouromov's account, which takes place during a typical weekend in 2040:

> *"After [finishing work], I went to visit my grandma in her apartment. And there is this hologram of her. She is like… the spirit of this apartment where she was living during all her life. And without her, it is pretty empty… But the hologram is nice. You can come in and turn it on. When you turn the electricity when you go inside, there the hologram appears. And, like, it speaks to you, how was your day, what was your life, how your kids are growing"* (Jakov Ouromov, personal interview).

For Jakov, the VDI's presence in a place he associates with joyful moments in his childhood evokes memories and seems to bring the energy and presence of the deceased via a technological medium in what would otherwise be an empty space devoid of life and, in consequence, of the pleasant feelings it induces. In this case, the structuring processes of categorisation, regionalisation and routinisation converge: the category of "personal" assigned to the encounter seems to affect Jakov's subjective perception of the setting, leading him to interpret it as a comfortable, private space and decide to make visits to it as a common activity during his weekends.

Patterns similar to Jakov's, which are valued positively by the subjects, can be expected to be the most common in the Ambivalence image. Nonetheless, ambivalence arises because the reanimated presence of the dead in the same familiar setting can also become confusing, overwhelming or distressing for the human interlocutor. Anahita Golshiri, an Iranian young adult, describes it in the following terms: "Sometimes you feel it doesn't make sense, sometimes you think you will feel something [by interacting with the VDI], and sometimes you would think, 'I wish she were here'. And sometimes it would feel good, and sometimes not. Sometimes you would think she is not here" (Anahita Golshiri, personal interview). Here, there seems to be a contrast between the feelings expected and what the actual outcome of the interaction is regarding the subjective appre-

ciation of the space, with the underwhelming effects of the interaction on the human in-
terlocutor's emotional state apparently increasing the desolation felt in the setting where
the interaction takes place.

As described in the theory, the interactional processes would have some elements
fixed, particularly the roles of each interactant. Since the VDI and its human interlocutor
would be replicating dynamics the latter had with the original (now deceased) individual,
it would mean that the VDI only has a very limited number of roles, those it was pro-
grammed with for it to engage in interaction with its expected interlocutors. This would
be the result of the relational component of the original individual becoming embodied in
the VDI, perhaps by using the original individual's digital persona as reference. The hu-
man interlocutor, meanwhile, would mostly occupy the role he or she had in relation to
the other person. As Dac Kien expresses in relation to how the VDI would function when
in interaction: "When one family member wants to talk to the dead person, the story in
the bank of information will be chosen automatically to interact with this person" (Dac
Kien, personal interview). This suggests that it would mostly be the relational data that
would be summoned by the VDI's algorithm when in interaction, which would result in
a mostly fixed role. Unless there were some malfunction or some negative affectivity was
involved, it is unlikely that the human interlocutor would attempt to adopt a different role
than they had in the original relationship.

The analysis of the processes in Human-VDI interaction can be complemented if the
elements of a social practice are brought to the forefront and some of their expressions
are examined. Starting with the element of materials, the hardware and the forms of em-
bodiment are very variable. Some imagine it as being pure software within a physical
device, similar to an application in current smartphone devices. Within this form, the
VDI's form of embodiment may be limited but still possess some humanlike qualities.
An example includes a cartoonish, or non-realistic, embodied form: "One of the ones I
imagined was a virtual avatar. I don't know if you've seen the new emojis coming out on
Samsung and iPhone devices. It's like a cartoon of the person who moves his eyes just
like you, and opens his mouth just like you" (Juan Ignacio Alcántara Montesinos, per-
sonal interview). Others, in contrast, would prefer it to be a realistic, but intangible, form
of embodiment: a hologram or a 3D projection of the person. Referring to a VDI of her
grandmother, Wai Ling, a Chinese woman, describes its embodied form: "I would see the
face of my grandmother that we took from a file and we are virtually recreating it. It
would be exactly like she was, but I think I would see her face and she would be laughing

or something" (Wai Ling, personal interview). Finally, there were others who imagined the VDI as a fully tangible identity, as in Natalia Gómez's, a Mexican woman, recreation of her mother: "[I imagined it] as a robot, as I saw in the image. I imagined it like this. Well, rather like an android with her appearance" (Natalia Gómez, personal interview).

The software component is similarly variable in its functionality, but it seems to adhere to the basic criteria that qualify a virtual entity as a virtual human: "If the entity's core personality, actions and thought processes are those of a human, then it should qualify as a virtual human" (Burden and Savin-Baden, 2019, p. 9). Some wish a VDI to have a more comprehensive set of functions that involve some autonomy from the human interlocutor, as is the case with Natalia Gómez's VDI of her mother: "I met her in the kitchen, she had already prepared coffee. We chatted for a while. And I imagined that [dynamic] throughout the day. As if it was someone who lived in the same house as I did" (Natalia Gómez, personal interview). Others, however, would only focus on the conversational component: "We could also interact like… we could have a direct conversation. It could be like the previous conversations with the dead person" (Dac Kien, personal interview). What can be grasped from these accounts is that the hardware and software components of the VDI would combine to produce an interaction experience suitable for the subjects' needs for emotional, routinised company. In the case of tangible VDIs, the materials of the social practices would not be limited to those of the medium of communication, but would also involve those elements of the physical setting involved in performing social practices of the home, such as preparing a meal or carrying out a joint activity.

The competences displayed in the practices centred of Human-VDI interaction would be bound to the amount of autonomy the VDI has been set up with, in the case of the VDI, and to both the technical skills and cognitive state of the human interlocutor. When the VDI is a software that only has agency inside a hardware device, the VDI's competences of most importance would be those of an advanced virtual human, and the human interlocutor's technical competences would require that they know how to handle such a hardware device. The interviewees' accounts suggest that such devices would not be particularly complex, with an easy user interface similar to those of social networking sites nowadays: "It would be like the messenger in the sense that I could log in to the app, and they would appear and talk, and I would share them my stories, my sorrows, my hobbies" (Dac Kien, personal interview). The other crucial aspect here is that the VDIs need to be able

to sustain a long conversation as if they were human. It is this feature that gives them their humanlike quality and produces the everyday rituals that sustain social life.

The accounts presented so far portray Human-VDI interaction as embedded in the routines of the subjects, and as such it is important to discuss how this routinisation of Human-VDI interaction might sustain life and orient subjects away from death, as occurs in a Death-constituted society. Recalling Scheff's ideas on talk and bodily communication as ritual (1990), the expression and transmission of emotions seems to be what drives Human-VDI interaction: "For me, the most important thing is their face and the emotion on their face. That would make me happy to interact with them much" (Dac Kien, personal interview). Though the VDI, as a non-sentient being, could not have a genuine emotional reaction, the VDI's emotional expressions would seem to hold special significance for their human interlocutors. The generation of positive affects in the human interlocutors via talk and bodily communication would be a powerful force that strengthens the social bond they feel towards their close circle of family and friends. A strong social bond would probably be necessary for a symbolic transcendence of death, and from the perspective of the human interlocutor, it is possible to interpret the VDI as a technological mechanism through which the dead can regain some agency in the world of the living, symbolically transcending death.

Because Human-VDI interaction could also involve taking part in life-sustaining activities such as eating together, and shared meals are reciprocal acts which both reaffirm the social bond and provide nutrients to living beings (Seale, 1998, p. 157), interacting with the VDI as part of the routine of the home life would constitute the continuous renewal of life as experienced by the human interlocutor and the dismissal of the threat posed by death. This is reflected in Carolina Olabuenaga's depiction of an interaction with a VDI of her husband: "I would have him in person all the time, like being at home. It would be something like 'What are we going to eat today?', And he would answer 'Well, I would not eat anything, but we can eat what you want'" (Carolina Olabuenaga, personal interview). In this case, the routinisation aspect of a social practice is foregrounded by the fact that the VDI would be permanently present in Carolina's house as a resident in her home. Despite the limitations of the VDI of not being able to eat, it would nonetheless take part on the life-sustaining ritual of a shared meal. In this way, Human-VDI interaction orients the interlocutors towards life and away from death.

While most interviewees' accounts involve the avoidance of the threat of death by engaging in talk or in life-sustaining activities, there is some hesitation on the quality of

Human-VDI interaction. If low-quality, or if disrupted by a technical failure, a negative emotional reaction could be observed: "I feel that if it tries to be realistic and failed, and it will probably fail in at least one detail, the experience would be ruined" (Juan Ignacio Alcántara Montesinos, personal interview). Juan Ignacio's statement is useful to see the integration of the material features (in this case, hardware and software) and how they contribute or detract from the experience of talk and bodily communication, leading to an ambivalent evaluation of Human-VDI interaction. In the case of malfunction of the technical components or misrepresentation of the deceased, the VDI could generate an undesirable effect that disrupts not only the experience of interaction but could also break the illusion of the transcendence of death. The consequences, then, would be that the interlocutors would realise the permanence of the death of the original (now deceased) individual, and the magnitude of the loss would become apparent, as evidenced by Anahita Golshiri's remarks: "Well, I'm sure this device can't be complete. It can't be my friend. You know, it has some… faults" (Anahita Golshiri, personal interview).

The references to bodily communication and technical malfunctions suggest that considering the uncanny valley effect for the Ambivalence image would be necessary if the aim is to interact with the VDI in daily life. Having the uncanny valley effect emerge during interaction might discourage the VDI's human interlocutors from further interactions with it. The degree of sophistication of both the algorithm and the user interface, then, would need to be advanced so as to offer meaningful bodily communication signals in addition to generating the reactions that match those of the original (now deceased) individual. This does not, however, imply that a realistic form of embodiment is the only option. Though for Jakov Ouromov a hologram that closely mimics her grandmother's physical features is preferable, for Juan Ignacio Alcántara Montesinos, a cartoon version is a better option. This suggests that a version of the VDI which simultaneously reminds the interlocutors of its artificial nature without disturbing them should be a goal of its design, at least in the time horizon of 2040.

The element of meanings of the social practice theory as expressed with Human-VDI interaction needs to be addressed as well. The different future stories of the interviewees point to the fact that the meaning often given assigned to the interaction with the VDI could be characterised as that of a continuing bond: the subjects view the VDI as a technological extension of the original (now deceased) individual, and their interactions with it follow the same dynamic as in the original relationship as much as the hardware and software allow for such a dynamic. But another meaning was also discovered, albeit with

much less prominence than the continuing bond: that of the ancestor. Natalia Gómez describes the possibility to collect as VDIs the family members from different generations: "Imagine, you organise a meeting or a meal, and there you have Grandma, Grandpa, Mom, you all have them there. So, am I going to have my house full of those robots already? How am I going to do it? [she laughs nervously]" (Natalia Gómez, personal interview). While depicting this situation, Natalia did not evaluate it in positive terms. Instead, she viewed having the different family members as indicative of unresolved issues with death. This could mean that in a setting where the VDIs were common, having one of them for each family member who died could possibly complicate the mourning process. A frame where the previous generations are treated as sources of wisdom is not often considered. A possible interpretation of this could be the clash between an image the future where the current trends of late modernity, including advanced electronics, are extrapolated, and the influence from pre-modern practices of ancestor veneration.

Ambivalence on this, however, can also be observed if Natalia herself adopts the perspective of recreating herself as a VDI, a practice of generativity that she would be open to, which would include "answering questions like 'What are you doing?' or 'And when you witness this, what do you feel?', so that they are saving the person's data. For example, in this case of myself, so that when they make the robot, it is the closest thing to me" (Natalia Gómez, personal interview). An active involvement on Natalia's part indicates that she can view herself as a guide to following generations, with her daughter benefitting most from her being recreated in the VDI. Ultimately, she could become an ancestor herself, despite the negative orientation of her interactions with VDIs of previous generations of her family.

From these elements, the characterisation of the mourning process can also be inferred. Mourning when a person is involved in Human-VDI interaction as routinised into a social practice is itself ambivalent. By reintegrating the loss into their everyday routines via the VDI, Human-VDI interaction allows the human interlocutors to continue experiencing a familiar and comforting dynamic, with an underlying weak recognition of the loss. By having the VDI in their presence, the human interlocutors can recall their previous experiences and, at least for those that can occur in the boundaries of the home, have a chance to reinvest themselves in life-sustaining activities. Conversely, there is always a lurking danger of a technical malfunction, which results in the restored presence of the

original individual disappearing again, and the dislocation in their fantasy life, the magnitude of the loss and the permanence of death become apparent to the human interlocutors.

Simultaneously, the differences between the original individual and the VDI could become too evident and increase the difficulties in confronting the loss: "Sometimes I need my friend, and the device cannot meet my needs. And in this point, I think it's horrible. Because sometimes I think I have my friend, or my sister, and it turns out that I don't have them" (Anahita Golshiri, personal interview). In this sense, it might be that the externalisation of the integrated lost other via technological means would result in a greater risk for the ambivalent nature of the mourning process to become overwhelming. How prevalent this could be, however, is a matter that should be further explored, as opposing accounts imply that an interaction might help in fulfilling an emotional need to reunite with the deceased and recognise their influence in the lives of the living: "If you think of a situation in which you have not seen your parents in a long time, and you miss them too much, a lot of the automatic action that this concept would involve would allow us to reconnect with them" (Dac Kien, personal interview).

Although the ambivalence prevails, a possibility concerning the mourning process could be raised based on the narratives of the interviewees: the ambivalent nature of Human-VDI interaction is associated to how the living have processed the death of a loved one, as is proposed by Juan Ignacio Alcántara Montesinos: "It does contribute something, but something that is not vital. Obviously, I also find it useful, and people continue their lives after their loved ones die. But it could still be good for situations where such a death was very abrupt" (Juan Ignacio Alcántara Montesinos, personal interview). Insofar as the human interlocutors have not successfully integrated the loss into their lives after the death of the original individual, they could be susceptible to experiencing increased grief when a VDI malfunctions. If, on the other hand, they have confronted the magnitude of the loss of their loved one and acknowledged the permanence of death, Human-VDI interaction might offer renewed feelings of joy and the possibility to encounter an externalised, technological form of the lost other.

6.2.3 Discourse / Worldview: Personal Techno-optimistic Post-Mortalism – Technology to overcome mortality

Social practices centred on Human-VDI interaction emerge from and are governed by what can be described as *Personal Techno-optimistic Post-Mortalism*: a discourse that

embraces and promotes various ways, actual or symbolic, in which technological means can help humans to overcome their mortality and extend their presence in the world of the living. It offers a symbolic return of meaningful others granted by technological means in the form of the VDI. This discourse possesses three constitutive features – a symbolic return of the dead, technological replication of the deceased by integrating data into social algorithmic entities and the personal nature of the relationship between the VDI and the Human interlocutor – that are likely to be found across a variety of cultural landscapes where social practices of Human-VDI interaction are common.

This discourse can be considered as one of the techno-optimistic responses of Post-Mortalism to thanatophobia, which frames death as something undesirable and to be feared. Techno-optimism is reflected in the discursive construction of technology as an inherently positive force for human dynamics, as expressed by Natalia Gómez's under-standing of technology as a concept: "like the tools we need but they evolve, with tech-nology being the force that gives us those tools" (Natalia Gómez, personal interview). This notion of technology evokes forward motion by reference to evolution, which is commonly associated to linear, if contingent, progress from a lower state or condition to an upper state of being or improved condition. In this case, the condition to be improved by technology is death, which implies the cessation of existence in the world. The mani-festation of thanatophobia within Ariès' fourth model of death, "the death of the other" (1981), generates anxiety by contemplating the deaths of meaningful others: "If you are a collectivist family, as in Iran, death is the biggest phobia of most families in Iran. You think, 'Oh, what if my brother, my sister, my parents… My neighbor, even, sometimes…' in the event they pass away, what should we do?" (Anahita Golshiri, personal interview). Discourses where thanatophobia dominates display signifiers concerning negative emo-tional states and reactions (anxiety, horror, fear) circling around the concept of death.

Personal Techno-optimistic Post-Mortalism as a discourse, then, could give meaning to practices focused on Human-VDI interaction by providing a framework of interpreta-tion where the VDI is not simply a device to be used, but a technological extension of a person who has died. Therefore, the VDI would constitute a form of symbolic immortality (Lifton and Olson, 1974) when viewed in this manner. Within this framework, the VDI dissipates the subjects' fear and horror of permanently losing their loved ones after the latter's deaths by enabling for some form of reunion in the world of the living via tech-nological means, perhaps by harnessing the data of his or her digital persona. In this sense, the emergence of social practices based on Human-VDI interaction could be seen as both

an individual and a sociocultural response that this discourse offers against the threat of death (in this case, the death of others) and thanatophobia more generally.

The replication of a person into a social algorithmic entity can be related back to the fourth element of social practice theory: that of connections. In this case, it is connected to the paradigmatic vision of datafication and to the production, gathering, analysis and application of data for a variety of purposes. In a sense, datafication finds a tangible expression in Personal Techno-optimistic Post-Mortalism through the VDI's algorithm, and the existence of the VDI would be partially influenced by a context in which practices of datafication are not only present but viewed as desirable and thus encouraged.

Social practices of Human-VDI interaction acquire meaning within the discourse of Personal Techno-optimistic Post-Mortalism, and arguably are only able to become prevalent within it. Post-Marxist discourse theory can offer a deeper examination into this by characterising these social practices as *discursive* practices; that is, these practices are governed by a set of linguistic markers which privilege some signifiers over others, allow for the constitution of hegemony and enter an inter-discursive struggle with other practices. To illustrate the constitution of meaning via discursive articulation, the interpretation of the VDI and the effects of Human-VDI interaction by the human interlocutors are necessary: "You would have a chance to talk and to communicate with the people, your relatives, who have died" (Dac Kien, personal interview). In this description of the phenomenon, the signifier "communicate" is linked to the nouns "people" and "relatives", indicating that the VDI, at least to some degree, embodies elements of the deceased, being a technological equivalent of them. Something similar occurs in the case of Anahita Golshiri's dynamics with her VDIs: "When they send their voice, I can feel them with me. I think, 'Ok, they are with me. We are with each other'" (Anahita Golshiri, personal interview). This implies the presence of the deceased in the world of the living as manifested via the material aspects of the VDI, in this case the voice archives that emerge during interaction. The nodal points in this discourse are those that imbue the VDI with a degree of personhood *and* portray a personal relationship with the living: "people", "relatives", "family", "friends" and similar signifiers become the linguistic markers which, in symbolic terms, equate the VDI with the deceased.

In terms of the Logics of Critical Explanation framework, this points to practices of Human-VDI interaction as being governed by a *social logic of technological revivalism*: a discursive logic within which Human-VDI interaction routinely and continuously unfolds as if the VDIs were, at least partially, the deceased. From the human interlocutors'

perspective, the VDI is a technological mechanism which brings back the relational component of the dead and enables them to participate in social life. The signifiers which convey personal relationships and attachments, such as "family" and "loved ones", are the nodal points through which the discourse acquires meaning, and these are articulated with other signifiers related to technology: "messenger", "apps", "hologram", "robot" and so on. While the VDIs would not be able to assess their condition as a technological entities (unless it was coded with commentary that displays this awareness), the human interlocutors would indeed respond to them as if they were alive and refer to them in living, personal terms. Therefore, the social logic of technological revivalism can be said to endow technological artifacts (in this case, the VDI) with attributes of personhood, and allows subjects to carry out activities with them as if they were alive.

The social logic of technological revivalism which governs practices of Human-VDI interaction is supported by *fantasmatic logics of immortalisation*[19]: the unconscious narrative mechanisms which take thanatophobia as their foundation and view death not only as a problem, but as the *ultimate* problem which must be overcome. The beatific dimension involves the successful victory over death by finding means to extend one's presence indefinitely in the world of the living, while the horrific dimension foretells of the extinction of the self if death results victorious. Fantasmatic logics of immortalisation reinforce social logics of technological revivalism by orienting the subjects towards life-sustaining activities, either symbolic ones (e.g. conversational activity that strengthens the social bond) or biological ones (e.g. having a meal together with the VDI), and away from death. Therefore, fantasmatic logics of immortalisation sustain the social logics of technological revivalism by ensuring that subjects derive satisfaction from performing activities involving the VDI, unconsciously investing the subjects in life. This is best reflected in Dac Kien's opinion on the potential of the VDI: "I hope it would become real, because it helps me to connect. If this kind of thing happens in the future, how could I be more scared of death? It would be like, 'Ok, I die, but I still have connection with the people that we love'" (Dac Kien, personal interview).

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[19] Despite the overall discourse being called Personal Techno-optimistic Post-Mortalism and the contrast between Immortalism and Post-Mortalism being established, the fantasmatic logics of immortalisation still play a role in Post-Mortalist discourse. The logics of immortalisation are unconscious drives which attempt to protect the self from disappearance, in this case by death. Though they do so in a different way in Post-Mortalism than they would do in Immortalism – in Post-Mortalism, death is experienced but reverted or overcome; in Immortalism, death is avoided altogether – fantasmatic logics of immortalisation are still active in the unconscious and reinforce social logics.

Because political logics emerge from an antagonistic struggle with other discourses, drawing symbolic boundaries between them, it is challenging at this stage to characterise the political logics. A relevant theme for political logics involves highlighting the positive effects of Human-VDI interaction, which could be to help combat loneliness: "I would have contact on the phone or something with the robot [the VDI]. If I needed to tell something to someone, and no one was available, she [the VDI] would be the one to talk to, I think" (Natalia Gómez, personal interview). Such practices would not be limited to Human-VDI interaction, however, as they could emerge from a broader political position which promotes technology's potential for social companionship purposes: "[In a video] they showed us some villages in Southeast Asia. And there is an old woman there, and all of her children are not in the village. And then some robots are there, eating dinner with the old woman. They help her in her job, and other things" (Anahita Golshiri, personal interview). This position would encourage viewing some technological devices as techno-social entities, presenting contrasts with discourses which suggest viewing them as instruments is more appropriate, or with those that reject the infusion of human attributes to technological artifacts. These political logics could be labelled *political logics of techno-anthropomorphism*, given that they advocate for the ever-increasing incorporation of technological devices into social interaction dynamics, defend an interpretation of them as if they were the deceased, and foster the addition of humanlike qualities to them so that they can faithfully mimic human behavioural features.

Taken together, social logics of technological revivalism, fantasmatic logics of immortalisation, and political logics of techno-anthropomorphism govern social practices focused on Human-VDI interaction by imbuing them with linguistic meaning, making them discursive practices as well. Technological revivalism logics operate in the reproduction of everyday life dynamics, structuring via language Human-VDI interaction and characterising the VDIs as the dead brought back to life. Fantasmatic logics of immortalisation support them by offering the symbolic possibility to obtain victory over death and orient subjects to life-sustaining activities. Finally, political logics of techno-anthropomorphism promote viewing social algorithmic entities and advanced robots as humanlike, resulting in framing their integration into social dynamics in favourable terms. The interplay of these logics, the practices of Human-VDI interaction and the broader discourse of Personal Techno-optimistic Post-Mortalism is schematised in Figure 3.
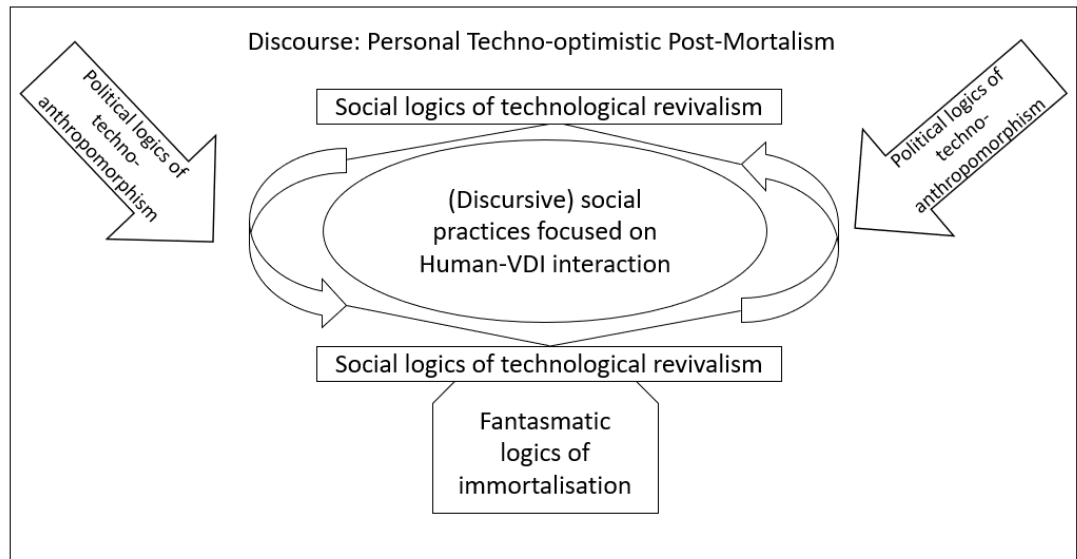
Figure 3: Discursive logics and social practices of Human-VDI interaction – Ambivalence image.

Figure 3 shows (discursive) social practices of Human-VDI interaction as they are routinely performed, expressed via the arrows surrounding the ellipse. Because the performance is normalised, it occurs within a synchronic dimension, where the social logics of technological revivalism imbue the practices with meaning. Social logics stand on the unconscious drive for immortality, and have been instituted and defended by political logics of techno-anthropomorphism.

Within the discourse/worldview layer, a deeper examination of what occurs with the mourning journey of the subjects is required, as mourning becomes not only about processing the loss, but about acknowledging their inner fantasy life adopting an ethical stance in relation to discourse.

A first approach to explore how mourning occurs (or does not occur) in Personal Techno-optimistic Post-Mortalism would be to ask the following: what kind of mourning process is encouraged by this discourse? This answer is related to the way technology operates in the performance of these practices and to the awareness of the loss as felt by the VDI's human interlocutors. In relation to the role of technology, Juan Ignacio Alcántara Montesino's preference for a non-realistic appearance of his VDI provides some clues: "I feel that if it is very faithful, but there is something that fails, it would create that contrast of believing that it is the real person, but when it fails, you would think 'Ah, it is not'. It is that specific detail" (Juan Ignacio Alcántara Montesinos, personal interview). Given that Personal Techno-optimistic Post-Mortalism offers a fantasy of loved ones overcoming death by technological means, technical glitches or failures would break the fantasmatic narrative that conceals the permanence of death and the absence of the deceased. In that sense, the limits of technology might lead to the disruption of experience

and affect during an instance of Human-VDI interaction, and might also lead the subject to adopt a critical stance towards said practice, recognising the radical contingency of a discourse that attempts to "resurrect" someone or their overinvestment of affect in the technological embodiment of the relational component of the deceased. From this perspective, it can be affirmed that technological features contribute to the ambivalence that defines this image of the future: a faithful replication of the original individual's behaviour in the VDI during interaction with the human interlocutors might strengthen the fantasy of the reunion of loved ones, whereas technical malfunctions might weaken it or dissipate it, leaving the subjects to fully confront the magnitude of the loss.

This leads to the second question concerning mourning and Personal Techno-optimistic Post-Mortalism: how does this discourse enable or restrict the ethics of mourning? In other words, how can the mourning journey and the integration of loss be characterised within this discourse? Anahita Golshiri's statement illustrates a complicated, conflicted journey: "With this device, they would always feel that they don't have their mother or their father… It is good, but it can be horrible, I think, because sometimes we need to forget something, and this device doesn't let us to forget something" (Anahita Golshiri, personal interview). The ambivalence is again at the forefront here, where detachment from the deceased is positioned as the desirable goal, and the inability to achieve this detachment because the presence of the deceased in the form of the VDI is what produces negative affective reactions.

In other instances, however, Human-VDI interaction not only encourages the recollection of positively valued memories, but enables the recognition of the interior fantasy life and identificatory, symbolic and emotional supports the original individual embodied, as emphasised by Juan Ignacio Alcántara Montesinos: "I think this technology could change the way a person sees death. And it would help to separate the real person and the image they had of that person, from the person who died. And reassess and see the interaction in a different way before it died" (Juan Ignacio Alcántara Montesinos, personal interview). This quote suggests that continued interaction with the VDI by the human interlocutors could help in identifying the fantasmatic underpinnings of personal narratives and in understanding how the deceased supported the subjects' fantasy life, something that Glynos (2014) argued has to occur during mourning. A conscious recognition of the technological nature of the VDI could reveal the fantasmatic elements that used to emerge during interaction with the original individual. If this were to be the case, then the contrasts between the interaction with the VDI and the interaction with the original could

lead the VDI's human interlocutors to reassess the benefits they derive from Human-VDI interaction and to comprehend the complexity of human life and of the loss they have experienced: this loss encompassing not only the physical separation but the disappearance of dreams, ambitions, a sense of safety, and even a part of themselves that was invested in the deceased.

Therefore, when it comes to the ethics of mourning raised by Glynos (2014), the interviewees' accounts allude to the possibility that Human-VDI interaction could complicate or even block mourning to the degree it positions the VDI as a substitute or an avatar of the deceased and fails to meet unrealistic expectations regarding its faithfulness to the deceased. Conversely, insofar as Human-VDI interaction allows subjects to identify those fantasmatic elements that constitute their psychic lives and that framed their relationship with the original (now deceased) individual, the phenomenon can be said to orient subjects to confront the contours of Personal Techno-optimistic Post-Mortalism and its associated fantasies, it can strengthen the ethics of mourning. For this reason, the limitations of the VDI while engaging in interaction with it might disinvest affective attachment in it, while favouring a creative integration of the lost other into the self.

A final comment regarding Personal Techno-optimistic Post-Mortalism is how it can connect and morph according to other discourses with which it intersects. In this case, the influence of capitalist discourse should be noted. All the interviewees, even those who disliked the concept of Human-VDI interaction and offered alternative images of the future, envisioned the structural possibility of the commodification of personal data for the purposes of designing a business models centred on the VDI, as in the case of professional services dedicated to replicating the deceased as faithfully as possible. Karl Suotamo, a Finnish man, hypothesised the following: "barring any unforeseen things, seeing that these are already existing situations, I can speculate that at some point there will be an already existing developer, or a start-up and they will be bought up at some point" (Karl Suotamo, personal interview). What is to be highlighted here is that the business sector is likely to lead the development of such a technology, offered as a service to those people who wish to be symbolically reunited with their deceased loved ones. Moreover, other profit-seeking practices could emerge for a fee that include the VDI as part of the experience: "You could also have it as a paper session service, like the séances or psychics of old. And they would… I could see it as being a more exploitative branch. But of course, people being people, people would exploit it" (Karl Suotamo, personal interview). This possibility shows that Personal Techno-optimistic Post-Mortalism can be combined with

practices of commodification which are part of capitalist discourse: the relational component of the person (maybe in the form of its digital persona) can be commodified and sold, and grief can be exploited in the pursuit of profit.

6.2.4 Myth/Metaphor: The communicating man's relational information

As the deepest layer of CLA, myth/metaphor aims to evoke images which symbolise that which captures a core foundational premise upon which the upper layers are built. For the phenomenon explored in this thesis, that of social practices focused on Human-VDI interaction, suitable myths or metaphors are those that point to core premises of the concepts of life, death, and personhood. The complexity of the phenomenon for the Ambivalence image also resides in its core metaphor: the communicating man (Pecchinenda, 2017).[20]

The communicating man is one of the metaphors for what a human being is, the central idea of what constitutes its specific features and identity. According to Pecchinenda, the defining aspect of the communicating man is his ability to communicate and create tools that enhance such communication: "humans are communicating beings, partially structured by a sort of impulse to show himself, to 'get himself out', that motivates him" (Pecchinenda, 2017, p. 146). It is this innate impulse to communicate that pushes man to design technological systems and artifacts that operate according to the communicative nature of humans, and which facilitate the transmission of messages from one being to another. Crucially for Pecchinenda, the communicating man, the need for communication is shaped by historical occurrences and dynamics that emerge from them. With the rise of theoretical cybernetic models following World War II, the metaphor of the communicating man came to stand for a social entity comprised of the whole of information which can be transferred across networks, and which is embedded in a social structure where exchange of information with his counterparts is the norm (Pecchinenda, 2017, p. 147).

This metaphor of humankind exhibits characteristics which arise from modernity's goals concerning human domination of nature and its fight against death. In this case, the communicating man's desire to create technological tools that enhance communication

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[20] The communicating man is the concept offered by Gianfranco Pecchinenda (2017) when discussing the metaphors of humankind and strategies for immortality. All his metaphors are about "man", although they refer to humankind as a whole. Although a gender perspective should be applied, and a neutral term which represents all of humankind would be preferred, this thesis remains faithful to the concept of Pecchinenda, despite the disagreement on the use of the term "man" instead of "human".

mirrors the desire of the creators of the VDI to control extensively the kind and amount of information that a VDI has about the original individual, which in turn could manifest in an interaction. When Dac Kien was describing how he envisioned the technical aspects of the creation of a VDI, he explained:

> *"This device can be good if… If I get a hold of this device, and I use it… the alive person [that is, the person in a time previous to his or her death] can refine the information he or she wants to share. For example, if there is some information that is not good information and it can hurt the other ones… If it can hurt anything, it's not good"* (Dac Kien, personal interview).

Dac Kien's quote showcases the ambivalent stance regarding the information that could be used to create the VDI. In this case, a risk is perceived regarding how the VDI could conceivably share in the course of interaction sensitive information that the original individual would have liked to keep hidden from others. For this reason, the management of information, an expression of control, is regarded as a positive action to take when designing and providing inputs for the VDI.

The desire to control the constitutive information of the VDI would not relate only to privacy concerns, however, but to the desire to extend oneself via technological means, in this case using information obtained from communication processes. In the communicating man's metaphor, even if it is absent from the network of social relations in which he is embedded, his place and his uttered messages remain. This has parallels with what the VDI offers for the deceased in their network of social relations. Considering the communicating man's features, control of the information that constitutes the core of the VDI by the original individual (in the process of creating it, should he or she be still alive during this process) would mean exerting control of oneself for a post-mortem presence in the world of the living: "If there is something like settings in this device, I can modify the settings so that depending by myself on the circumstances, I can share the information I want to share" (Dac Kien, personal interview). By exercising this control over the information held by the VDI, the implication is that the living are managing their post-mortal existence, allowing for some continuity by providing embodiment to the relational (and communicative) features of a person. Hence, the VDI as an expression of the communicating man, illustrated in its involvement in Human-VDI interaction, would feed the fantasy of immortalisation by offering post-mortal presence in a world characterised by communicative capabilities are understood to be the central features of a human being.

In sum, the communicating man metaphor showcases the communicative skills of the human being and crystallises the relational component of a person within the network of the social relations he or she is part of. This confers to the data and information of a person personal attributes, allowing them to be interpreted as an extension of the deceased himself / herself. This structures Personal Techno-optimistic Post-Mortalism, which reasons that the VDI is can be assigned personal and social characteristics and constitutes a form of symbolic immortality. As seen, this discourse structures the practices in the upper layers, which integrate the VDI into everyday life and, in conventional discourse, would allow for "reunions" between the living and the dead.

This image of the future contributed to the pedagogy of death by exploring the ambivalent forms of relating to mortality and of undergoing mourning when engaging in interaction with the VDI. It offered the texture of an envisioned personal experience wherein the VDI is integrated as part of a personal routine, being a continuous reminder of the mortality of others (and, for some, their own mortality). It showed that people can incorporate elements related to death in their daily lives, but the extent to which they would reflect on them varies according to personal experience, discourse and the technical capabilities of the VDI. The subjects' ambivalence portrayed in relation to how the VDI oriented them to death acceptance and mourning in this ideal type implies that the social practices of Ambivalence image also adopt an ambivalent stance concerning a pedagogy of death: on the one hand, the dead continue to be present, to some extent, in technological form, bringing mortality to the foreground of their lives; on the other hand, this presence may reduce familiarity with mortality insofar as the dislocation caused by their deaths in the lives of the living is weakly acknowledged, if at all.

6.3 Restoration: the VDI as instrument to gain death acceptance

The content of the Restoration image's analytical categories depicts social practices where Human-VDI interaction is not part of the everyday life of people, but is instead meant for specific therapeutic purposes or for providing emotional stability when subjects are feeling distressed or are incapable of successfully navigating through the mourning process. As with the Ambivalence image of the future, the Restoration image presents instances of continuing bonds between the living and the dead that are of personal nature. The continuing bonds, however, only emerge for a limited time, usually in the context of explicitly thinking about the deceased. This might be due to the subjects wishing to reach a conclusion of an unresolved issue with the original individual prior to his or her death,

or to request concise advice on personal matters. The continuing bonds has an existence independent to that of the VDI, although under some circumstances the VDI can also be considered an externalisation of the bond if it clarifies for the user some aspects of the personal relationship between him or her and the original individual.. The Restoration image owes its name to the fact that what is being restored is the reinvestment of the subjects to new life experiences and / or emotional stability that had been previously lost. This is reflected in the mourning process, where there were complications in accepting the loss caused by the death of the original individual and its impact in the lives of the living. However, acceptance of death and of the permanent changes this event has brought to the lives of the subjects is gradually reached by precise, focused dynamics of Human-VDI interaction.

Within the Restoration image, the subjects are generally aware of the loss of their loved ones, which is at the forefront of their interactions with the VDI. This awareness means that the VDI is predominantly understood as being a technological construction during Human-VDI interaction, even if it stands symbolically for the deceased. The VDI is perceived to be displaying relational information of the original individual to the human interlocutor but, in the human interlocutors' eyes, is not an extension of the original individual in technological form. It is rather a device which is deliberately infused with meaning by the subjects, a process of which they are aware. For this reason, the common interpretation reached by subjects is that they are "using" a technological device.

The setting continues to be perceived as private by the human interlocutors, although it stands apart from the one in the Ambivalence image in two ways. The first is that, in contrast to the Ambivalence image where subjects autonomously integrate the VDI into their everyday routines, within the Restoration image Human-VDI interaction is guided or facilitated by a third party which the human interlocutors trust, such as a close friend or family member, or a therapist. The second way is that this private setting might, if it occurs under a formal therapeutic process, also be characterised as institutional, given the specific goals of Human-VDI interaction in this context. These therapeutic goals can be considered the reason for immortalisation – the purpose does not aim to recreate normal patterns of behaviour and activities that the subjects and the original individuals used to enjoy together, but attempts to allow subjects to face the implications of death at an existential level and to creatively integrate the loss of their deceased loved ones into their lives. Consequently, the reason can be characterised as sentimental-therapeutic. In other

words, were subjects' orientations toward life become threatened by their inability to accept the fragility of life that the prospect of death imposes, or were they to find themselves struggling to come to terms with the permanence of the death of their loved ones, a simulation of the deceased as manifested in the VDI might re-orient them towards life.

The overall narrative pattern of the Restoration image can be summarised in the following sequence:

1) Someone experiences a personal problem which produces emotional distress.

2) The decision to engage in interaction with the VDI is considered, either by the person who experiences the personal problem or by a third party whom the person of focus trusts (family member, friend or therapist).

3) The third party supervises, facilitates or mediates Human-VDI interaction.

4) Human-VDI interaction allows the person of focus to feel better, to obtain knowledge on how to face a problem or begins to remove the obstacles that complicate or block the mourning process.

5) Once the goal of the interaction is achieved, Human-VDI interaction ceases.

This narrative pattern of the Restoration image suggests that social practices focused on Human-VDI interaction are not as common or do not have widespread acceptance in a given context. Whereas the Ambivalence image integrated the VDI as social companions in daily life, the Restoration image abandons the social potential of the VDI to reframe it as a technological tool that can help solve specific problems that manifest themselves at the personal and microsocial level. The interviewees' opinion of the VDI within this image is that it is beneficial when Human-VDI interaction is limited, goal-oriented and supervised, but harmful when the VDI becomes a normal component of a person's life because it can create dependence and distort cognitive processes. The overall tone of these narratives is conflicted and mournful, although they end on an optimistic or even hopeful note. This is where restoration can be observed: what is restored is not a past condition or relationship, but a willingness to engage in life-sustaining activities by accepting human fragility and the implications of losing a loved one.

6.3.1 Litany: Human-VDI interaction as therapy or emotional counselling

The layer of the litany in the Restoration image would focus on the envisioned advantages offered by the VDI in terms of mental health and its use during the mourning process of grief-stricken subjects. Media outlets and social networking sites could be using headlines

exaggerating the benefits of Human-VDI interaction for coming to terms with loss of a loved one.

The VDI would be framed as a cure for complicated mourning or for overwhelming grief. In contrast to the Ambivalence image where the focus was on reuniting loved ones after the death of one of them, in the Restoration image the central theme highlights mental health issues. As is the case in the present with many forms of contemporary psychological discourse in the English speaking world, the psychological discourse in 2040 on topics related to death and to mourning could still involve a problem-solving narrative, where grief and melancholia are perceived as problems that require a solution, instead of a natural experience that subjects go through when someone close to them dies (Leader, 2009). For this reason, statements such as the following could be characteristic of the litany layer in some cultural contexts: "I think being able to heal and being able to accept that the other [the original individual who died] is no longer here is going to be achieved by using the humanoid robot who represents the deceased [the VDI]" (Natalia Gómez, personal interview). This view of Human-VDI interaction depicts the natural reactions to loss as illnesses from which one can be healed. In consequence, the complexity of mourning and the role of melancholia disappear from conventional discourse on Human-VDI interaction as part of a therapeutic process.

6.3.2   System / Social causes: Social practices of supervised Human-VDI interaction for therapeutic purposes or for solving specific personal problems

Although initially social practices of Human-VDI interaction in the Restoration image would seem to present minor differences in regard to the way the VDI is approached by its human interlocutors, the substantive aspects of social interaction display significant contrasts to the Ambivalence image. In the framework of Turner's (1988) social interaction theory model, the motivational processes in the Restoration image would see the human interlocutor seeking gratification in the form of concluding unresolved issues of personal nature by entering an interactional situation with the VDI, as evidenced in the account of Thomas Hubbard, a British young adult: "If you are using it in a way to sort of… potentially you didn't say something to someone before they died, and you've sort of wish you've had, I think that could be useful for some people" (Thomas Hubbard, personal interview). Whereas in the Ambivalence image the sources of gratification centred on the generation of positive affects for the human interlocutors and on the VDI

aiming to behave according to its coded parameters, in the Restoration image the motivation arises from a specific emotional or mental health issue that Human-VDI interaction could help in addressing. In this sense, the scope of the goals of interaction would be circumscribed to resolving those issues.

The reason for immortalisation would be similarly limited in scope, as the purpose shifts from replicating interactions with the original individual as part of everyday life to obtaining specific benefits from the interaction. This would imply that those who created the VDI in the Restoration image foresaw potential problems, often but not exclusively related to death and to mourning, that affected them at some indefinite moment in the future, at which point they would decide to engage in interaction with it. This restricted scope is also reflected in the tangibility of the continuing bonds, with the VDI being an external manifestation of a mostly internal bond, as evidenced in the perspective of Alberto García, a Mexican young adult: "More than anything, it helps you remember. I see it more like this. I don't have a perspective that in some other situations it could be useful" (Alberto García, personal interview). The quote exhibits a specific goal, which is remembering the deceased. The main continuing bond is active internally, in the subjects' psyche, and this is complemented by the presence of the VDI in the external world. This leads to an interpretation of the motivational processes of an interaction as being more practical in nature in the Restoration than in the Ambivalence image, yet still focused on matters of emotional relevance for the subjects' personal lives.

The structuring processes in the Restoration share a slightly closer resemblance to those in the Ambivalence image: the categorisation processes still confer the meaning of a personal encounter with the VDI and the regionalisation processes involve a setting that is considered private by the subjects. There are, however, differences in a few elements. For the regionalisation processes, the ecology and demography change. Whereas the Ambivalence image portrayed a variety of locations where the human interlocutors felt comfortable, it is likely that the locations in the Restoration image are limited to specific places inside the home (e.g. the bedroom or the living room) or in the therapist's office. Additionally, the Restoration image always features a third person that facilitates, guides or mediates the interaction with the VDI: "I think it could be useful, if guidance were present. Specifically, if there was someone there facilitating it, an interaction with that purpose [to accept the death of someone]" (Juan Ignacio Alcántara Montesinos, personal interview). Finally, the routinisation process either becomes formalised by its integration into a formal therapeutic setting, or only takes place occasionally, when the emotional or

mental health issues present obstacles for the subjects. Routines, as they are commonly understood, can be said to disappear if no formal therapeutic process is taking place.

The interactional processes are again characterised by fixed roles for the VDI and the human interlocutor and a generalised frame in the encounter that allow them to interpret each other as having a personal relationship. But these processes are slightly altered by the required presence of a third party whose role might change. The third party might be an observer trying to examine how the human interlocutor engages in interaction with the VDI. He or she might also be a facilitator, either suggesting to the human interlocutor to act in a certain way towards the VDI or generating inputs for the VDI's behaviour. Perhaps the most active intervention of a third party would be that of mediator between the VDI and the person of focus who would get the benefits from the interaction. To illustrate this point, Alberto García's narrative involves him at some point engaging in interaction with a VDI of his mother to ask for advice and help his brother, who is struggling with some emotional issues: "If this device managed to save or have my mother's way of reflecting and advising, I think I would resort to this device to know what to do. To have the correct answer and then know how to support someone" (Alberto García, personal interview). In this case, the third party, Alberto, is actively engaging with the VDI to ask for advice himself, but the resulting benefits would not be directed to him but to his brother, who is going through complicated mourning in his narrative. Therefore, the third party as mediator becomes a central figure in the interactional encounter as well, although the purposes would be of a more instrumental nature than those of the main human interlocutor.

Turner's framework of social interaction remains useful as long as the framing of the encounter involves living humans and a technological entity to which they attribute social characteristics (i.e. a social algorithmic entity). There is, however, an alternate framing which, based on the main interview data of the Restoration image, is equally prevalent and dominant in the subjects' psyche: that of the VDI as a tool or instrument. Though this is more explicitly discussed in the Discourse / Worldview layer, the main idea here is that the VDI is deprived of its social characteristics in the construction of meaning by the subjects who are in its presence. What happens instead is that they approach it as an artifact that can help them fulfil certain needs: "I think it depends on how it's used, for example, if it's for therapy then it's actually great, if you're using it with a therapist" (Thomas Hubbard, personal interview). In this account, the therapeutic process resorts to

the VDI as an instrument which can be used to accomplish delimited goals. Though details on the behaviour of the therapists were lacking in the narratives, the overall tone of the interviews suggests the VDI would be controlled by the humans in the therapeutic setting and given specific commands so that the goals of therapy could be achieved.

The manner in which the core activity of the social practices in the Restoration image – either Human-VDI interaction or the use of the VDI as an instrument by the subjects – becomes linked to the other elements of social practice theory displays a number of significant variations. Concerning the material component, the VDI could either faithfully resemble the original (now deceased) individual as in the Ambivalence image or be limited to basic hardware and software that serve as a repository of knowledge of the deceased person. The reason for this would probably be related to the specific purpose for approaching the VDI, as expressed in Juan Ignacio Alcántara Montesino's description of the VDI's characteristics while undergoing a therapeutic process:

> *"My first intuition is that it would need to resemble as much as possible the original person. But I don't know about any specific psychological theories or suggestions that would change this approach. For instance, modifying it to make it an improved or a worse version than the original person to force out some reaction or process in the patient"* (Juan Ignacio Alcántara Montesinos, personal interview).

In this version of a therapeutic process, the degree of humanlike interaction could be described as high, with the resemblance to the deceased and then the differences the VDI exhibits being part of the goal to orient the subject towards mourning by facilitating the integration process of the lost other into the ego. This way, perhaps, the subjects undergoing therapy would relinquish a desire to be reunited with him or her in a physical, tangible way – a form of detachment from the deceased – and allow themselves to continue living after incorporating personality traits, insights and admired attributes of the lost other into the self – a form of healthy melancholic identification with the deceased.

Conversely, however, when the VDI is limited in its hardware and software features, the purpose might not be to allow for mourning but to ask for specific, personal advice, as in Alberto García's imagined VDI: a small electronic speaker with his mother's voice (Alberto García, personal interview). Such a version of the VDI was envisioned as it was perceived as suitable for the exceptional circumstances in which it would be used. The restricted features of hardware and software reaffirm the alternate framing that considers the VDI as an instrument to be used, foregrounding the technological components and

pointing to the subject's way of accepting the loss of someone loved: "I would be motivated to use it is in a moment of weakness, or reflection. Not by choice, it is not something I wanted to do. I feel like there would have been a choice, but I always refused" (Alberto García, personal interview). This reasoning exhibits a desired mourning process by detachment, by clearly distinguishing the living from the dead and by describing the moment of deciding to use the VDI as a moment of weakness. Nonetheless, the fact that it was also a moment of reflection suggests that the actual mourning journey ended in a form of melancholic identification in the subject's psyche which is cherished, something disrupted by the decision of using the VDI as a repository of her mother's relational component. The material component here would make this a low-degree form of humanlike interaction, if the term can be applicable at all.

Here it is again relevant to raise the issue of the uncanny valley effect. The supervising person in the Restoration image would need to assess if the intended goal of Human-VDI interaction requires a form of the VDI that closely resembles the physical appearance of the original (now deceased) individual, or if a more disembodied form of the VDI is actually better suited to meet the intended goal. This is subject to vary according to the specific issue being addressed, as well as the personal preference of the interactants involved. However, particular attention must be paid to the uncanny valley effect here, given that the instances of Human-VDI interaction are for very specific purposes and a comfortable setting is an expected feature that enable the goals of Human-VDI interaction to be met. Therefore, any glitch or malfunction needs that results in the uncanny valley effect should be avoided in the Restoration image, unless engendering that feeling of alienation and discomfort is part of the objective to facilitate the recognition of the contrasts between the VDI and the original individual.

If the framing of Human-VDI interaction is adopted, the competences involved in the social practice would be the emotional skills to be aware of (initially) and regulate (later on) the emotional response when in the presence of the VDI, as the human interlocutor would have acknowledgement of its artificiality (that is, recognising that the VDI is a device), but the VDI would still simulate being the original (now deceased) individual, as speculated by Natalia Gómez: "I think it takes a lot, a lot of maturity. A lot. To accept that this is not the person. They are only your memories made robot" (Natalia Gómez, personal interview). Hence, having an artificial presence reminding the human interlocutor of the deceased might be distressing or emotionally draining. The other set of skills that is central in the Restoration image is that of the third party. The therapist or other

human facilitator of the interaction would be able to guide the main human interlocutor through its interactions with the VDI so that an acknowledgement of the loss and the pain of loss is made. The VDI, for its part, would have similar features as in the Ambivalence image, albeit adjusted to the purposes of the therapeutic or mourning process.

The meanings in the Restoration image vary according to the adopted framing, but they vary between those of a continuing bond and those of the VDI as an instrument, as described previously. As for the routinisation aspects that transform the core activity into a social practice, if the framing of Human-VDI interaction is adopted, the interactions would be structured and scheduled, and would circle around certain themes that are of importance to the human interlocutor, instead of being more free-form and spontaneous as in the "Ambivalence" ideal type. Conversely, if the framing of the VDI as an instrument is adopted, then routinisation into an expected schedule would disappear, although patterns could still be identified. For instance, instances of depression or of family disputes could lead to use the VDI to get some insights into the predicaments the living are facing. Similarly, symbolic dates (such as the cultural festivities or dates that mark meaningful moments between the living and the dead) might encourage engaging with the VDI in some form of controlled, planned interaction.

6.3.3   Discourse / Worldview: Techno-neutral Mortalism - Live, mourn and let die

The differences reflected in the way the VDI is approached in the social practices described in the previous layer reveal a different discourse at work in the Restoration image: Techno-neutral Mortalism. This discourse possesses two prominent features: the practical orientation of technology and the idea of mortality as necessary for our personal and collective life.

Here, death is not portrayed as a problem or in fearful terms, nor is it depicted as something desirable in itself. The central point of the Restoration image's discourse concerning death is to accept mortality as both an inescapable condition and as resulting from the fact that living beings are necessarily mortal beings: "I think if someone departs pretty early, if someone dies like early in the life, it's really sad, but once you get to an older age or, like a lot older, senior, you should have gotten ready yourself for that anyway" (Thomas Hubbard, personal interview). This perspective on death and mortality echoes Todd May's (2009) reasoning on the centrality of death for the human experience, which acknowledges the fragility of life but insists that dying is needed for the creation of meaning. This stance towards death is complemented by *technological neutralism*, wherein the

deployment of a technique or an instrument / device that has not been designed in a way that restricts its usefulness to one possibility, "can be used in different kinds of projects and for several different purposes, each with its own positive, or negative, value characteristics" (Sundström, 1998, p. 42).

Techno-neutral Mortalism confers social practices focused on the VDI the meaning of resorting to a technological device that simulates being the deceased without actually being that person, simultaneously searching for a resolution to problems of personal nature. As was the case with the discourse of the Ambivalence image, for the Restoration image practices within Techno-neutral Mortalism also connect with practices of datafication of the broader context, albeit in a different way. In this case, the data produced by the original individual and by the relationships he or she had is not understood as an extension of the original individual. Rather, subjects recognise that the data is assembled into the VDI as a technological artifact and it is them who are attributing significance to the VDI: "I would attribute it the meaning myself. And I would sort of be seeing that person in the system, but it would be me sort of anthropomorphising that system" (Karl Suotamo, personal interview). This quote suggests that the awareness of the artificiality of the VDI is central for synthesising meaning in Techno-neutral Mortalism: mortalist discourse is operating in the recognition that the dead are gone, with subjects assigning aspects of the personal attributes of the deceased to a technological device; meanwhile, technological neutralism supports mortalist discourse by directing this use of the VDI to help solve mental health issues or to succeed in mourning under guidance or supervision from a trusted person.

The discursive practices in the Restoration image are also governed by three sets of logics emerging from Techno-neutral Mortalism. The first of these are the *social logics of technological mourning*. At work synchronically, social logics of technological mourning involve the subjects acknowledging the dislocation in their discursive reality caused by the death event and guide them towards successful mourning – that in which the symbolic, material and emotional supports the deceased embodied for the subject are identified, leading the subjects to either relinquish their investment in the deceased or to incorporate them into their ego: "The moment when someone passes away, then they've passed away […]. I would like to remember them for who they were […]. I guess that's what the robot [the VDI] is trying to do […]. And it's not really the person, it's just your memories of that person" (Thomas Hubbard, personal interview). As evidenced in this quote, signifiers that refer to technological devices, such as "robot", are discursively articulated with
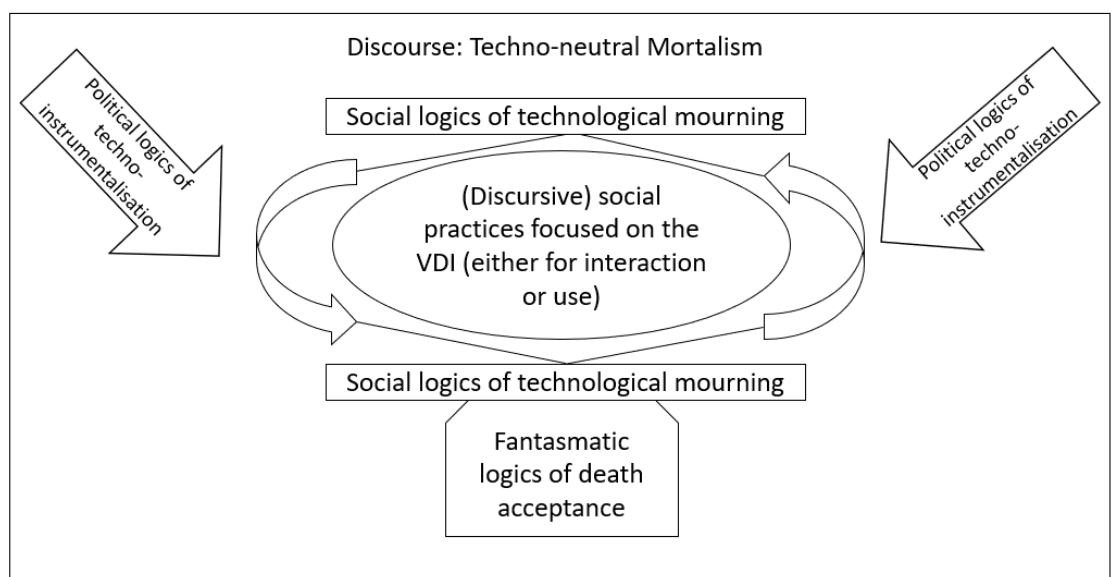
signifiers related to death and mortality, such as "passing away". These, in turn, also enter a linguistic chain with signifiers that signal the mourning process, such as "remember" and "memories". The resulting discursive articulation emphasises the use of technology for mourning by allowing subjects to identify contrasts between their idealised version of the deceased from who they actually were as living beings, in all their social and psychological complexity. This is done by evoking memories of the deceased or by directing the VDI to perform certain behaviours that enable the symbolic and identificatory supports to be revealed to the subjects, in the process allowing them to disinvest themselves from the idealised version of the deceased they had constructed in their psyche.

Social logics of technological mourning are supported by *fantasmatic logics of death acceptance*. These logics reject the fantasy of immortality, recognising the threat of meaninglessness posed by a permanent phenomenological experience. The fantasmatic narrative here is less intuitively clear than in the Ambivalence image, but is appropriate for the mortalist discourse, as it focuses on living purposefully, with the projection into eternity being the obstacle to be overcome, and death bringing a sense or priority and importance to human agency: "Death is an integral – indeed invaluable – part of any human society and any human life. Death makes the world go around because it ensures nothing lasts forever" (Jacobsen, 2017a, p. 3). Although it may appear that fantasmatic logics of death acceptance might orient subjects towards death rather than towards life, their actual operation forces subjects to confront the fragility of life by making them aware of the magnitude of the loss they have experienced by the death of the original individual. The guidance offered by the third party in these social (and discursive) practices is crucial importance here, as this allows the reconfiguration of meaning in the subjects' psyche and opens their internal world to the possibility of creatively integrating the loss they have suffered as part of their motivations in life: "I quite liked the idea you've said about therapy, for example. It may potentially help with loss, as a way to sort out that we loved that person but not rely on that person [as embodied in the VDI]. But still remembering them, I think it is potentially a great use for something like this" (Thomas Hubbard, personal interview).

The aforementioned logics are complemented by *political logics of techno-instrumentalisation*. As previously stated, different discourses on a relevant topic for social and political life enter into an inter-discursive struggle, with some emerging in a hegemonic position and others being relegated to a marginal one. Political logics of techno-instrumentalisation, although the label might seem redundant, highlight the fact that specific

technological devices, in this case the VDI, are perceived as being tools that allow its users to fulfil their goals: "The use of the device would be at a time when a brother has some difficult, economic or emotional situation, that he is suffering, that I do not know whether to intervene directly to help him, or go away" (Alberto García, personal interview). As expressed in this quote, signifiers related to the instrumental nature of technology, such as "use" and "device", become linked to a specific problem of personal nature: in this case, that of a sibling who "is suffering". The operation of the political logics of techno-instrumentalisation in the diachronic dimension allows them to institute as normal or desirable this perception of the technological nature of the VDI, not its social aspects. Therefore, subjects, whether they engage with it in the form of interaction or as an instrument, do not view them as social entities. They are simulations of once living beings, the original individuals, and they evoke moments with them, but they remain, in their human interlocutor's eyes, inanimate objects.

The three discursive logics – social logics of technological mourning, fantasmatic logics of death acceptance, and political logics of techno-instrumentalisation – operate together as part of Techno-neutral Mortalism in the Restoration image. As evidenced by the narratives and statements of the interviewees, the nodal points of this discourse foreground the instrumental, practical aspect of the VDI by referring to it as a "device" or "technology" to be "used", thus depriving any meaning-making process of assigning personal traits to the VDI, as in the Ambivalence image. The mourning elements are also emphasised, in this case by referencing "memory" and "emotional problems" that relate to issues of mortality. The operation of the three logics is shown in Figure 4.

Discourse: Techno-neutral Mortalism

Political logics of techno-instrumentalisation

Social logics of technological mourning

(Discursive) social practices focused on the VDI (either for interaction or use)

Political logics of techno-instrumentalisation

Social logics of technological mourning

Fantasmatic logics of death acceptance

Figure 4: Discursive logics and social practices focused on the VDI – Restoration image.

Figure 4 shows, via the arrows, the (discursive) social practices focused on the VDI as they are performed occasionally and, in some cases, with scheduled, formal frequency. Social logics of technological mourning operate within a synchronic dimension, orienting the subjects towards mourning and reinvestment in life. Fantasmatic logics of death acceptance support the social logics, with political logics of techno-instrumentalisation instituting and defending the practical use of the VDI for specific goals.

Based on the characterisation of the discursive logics which operate within Techno-neutral Mortalism, it is important to examine what the discourse as a whole contributes to mourning. Recalling that the ethics of mourning involve acquiring conscious awareness of the radical contingency of social life and of the dislocation experienced in the symbolic order (Glynos, 2014, p. 141), a discourse which favours these ethics must allow subjects to confront radical contingency and the dislocation caused by death. The Restoration image shows that the three logics guide subjects to discover the boundaries of their fantasy life, a process wherein they acknowledge not only the permanent loss of someone, but also the part of themselves that they had invested in those others who have died. This process assists subjects in either detaching themselves from their identification with the deceased, or in integrating their valued aspects into their own selves while recognising the complexity of the original person: "I don't think it [the VDI] is useful as a relative that passed away, because you're only remembering how you've remembered them and not exactly how the person was" (Thomas Hubbard, personal interview). In consequence, subjects would realise the artificiality of the VDI but would approach it knowing that it could be of help: "I think that since it is an imitation of the person, the only ones who benefit from it are those who are still alive" (Juan Ignacio Alcántara Montesinos, personal interview). Hence, at a personal level, Techno-neutral Mortalism is not only compatible with the ethics of mourning, but through the aforementioned social, political and fantasmatic logics it strengthens the conditions for mourning to be successful.

6.3.4   Myth / Metaphor: The Cartesian man's body and soul

In the Restoration image, the human attributes of the deceased disappear upon their deaths, meaning that the VDI possesses none of them. For this reason, a metaphor that accounted for the fate of the human attributes of a person once death occurred was needed and could be found within the framework of mind-body dualism. The notion that a person is comprised of a body and a soul can be thought of as a Christian variation of mind-body dualism which can be traced back to the philosophical ideas of Plato. This separation of

a person into a body and a soul is often found in philosophical discussions on mortality and the possibility of an afterlife.[21] As a metaphor of personhood for the Restoration image, the Cartesian man (Pecchinenda, 2017) reflects the mind-body dualism as a way to understand attitudes towards mortality and immortality, and offers an approach to interpret the Restoration image's perspectives on the VDI.[22]

The ideas condensed in the metaphor of the Cartesian man draw attention to both the properties of the body and of the mind / soul. Emerging in the seventeenth century, "an anti-naturalistic and dualist idea of the human being was affirmed (*res cogitans* and *res extensa*)" (Pecchinenda, 2017, p. 143, emphasis in original). In the relationship between body and mind/soul, the body usually carried negative connotations, placing boundaries and risks on human existence and leading humankind on a path towards moral failure: "physicality would be recognised as the opponent, the obstacle, and the wretched companion of the soul, to which were ascribed the weaknesses, the downfalls and all the most humiliating defeats of mankind" (Pecchinenda, 2017, p. 143). Conversely, the mind/soul was the humanising element, the one that gave rise to social and cultural accomplishments: "humans are the only natural beings with culture, arts, language, history; that is, to say, thought and knowledge. So it is natural but also original, therefore irreducible to any other being" (Pecchinenda, 2017, p. 143). Seen from this perspective, the mind/soul in the Cartesian man metaphor is the component that constitutes the relational component of the person: it provides the foundations of personality, of worldview, of moral intuition. The body and mind/soul together would therefore comprise the whole of the person, that which ends up embedded in a social fabric but is nonetheless a distinct being. This singularity of being has implications for the effects of death on a person and its place in the social world.

This duality of body and mind/soul offers a picture of what could happen to the human attributes of a person once death occurred. The body was (and is) the element that grants human beings their lives but also their deaths, a perspective echoed by Clive Seale

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[21]   For a deeper philosophical and non-religious exploration of mind-body dualism in the context of an analytic philosophy discussion of death and mortality, see Rosenberg's *Thinking Clearly About Death* (1998), chapter 0 (methodological preliminaries), and chapters 1-4.

[22]   I have taken some liberties in my approach to the Cartesian man, as Pecchinenda's metaphor does not take a specific position on its different conceptualisations. My approach here is to adopt the vision of the Cartesian man metaphor most compatible with the data gathered from the interviews, which would be an Augustinian conception of the body and soul. Still, the metaphor of the Cartesian man is considered appropriate because of the emphasis on thought, knowledge and construction of meaning that recurs in the Restoration image.

(1998) from a sociological standpoint. In this sense, the body imposes mortal limits and implies vulnerabilities to physical trauma, illness and old age. After death, the body decomposes and vanishes over long periods of time. In monistic accounts of personhood, this explains the fate of the human attributes after death (disappearance by decomposition), but to cover dualistic accounts, the Cartesian man metaphor also depicts a trajectory for the mind / soul: the mind remaining an immaterial substance that is able to think but is no longer perceptible in the physical world nor can it affect it, or the voyage of the soul to an spiritual afterlife, which in the Christian tradition would cover heaven, purgatory or hell. Some of the religious interviewees, like Alberto García, also adhere to mind-body dualism: "In a more earthly way and as far as I can understand it as a person, without religious connotations, for me life ends. […] But I am religious, so I would have to believe there is life beyond this earthly plane" (Alberto García, personal interview). What the fate of the body and the mind / soul expresses is that neither of those elements of a human being can be captured or replicated. The whole of a person disappears from the social world, being no longer able to influence it in any way. Therefore, the simulation of the mannerisms of a person in the form of the VDI can be nothing more than an artificial creation that is imbued with meaning by the living.

The Cartesian man metaphor, then, becomes the structural foundation of the Restoration image insofar as it validates Techno-neutral Mortalism by offering a framework which accounts for the total disappearance of a person after death, leading to the practical and instrumental approach to engaging with the VDI. Because the Cartesian man vanishes in its totality after death, the VDI cannot be the same entity, but a different one that resembles the original. In turn, this exerts pressure in the upper layers to perform the social practices that involve the VDI in a way that this device is not integrated into personal routines, but is only used for specific purposes of dealing with personal issues or for accomplishing a successful mourning process, possibly as part of a therapeutic process. The VDI would therefore operate as an external, tangible tool that might strengthen an internal continuing bond. Although successful mourning would mostly be the result of work between the subjects and the third party which facilitates their interaction with the VDI, it is possible to see others assigning "healing" characteristics to the device itself.

The Restoration image displays a more straightforward way in which engaging with a VDI can foster a pedagogy of death for subjects: the VDI is acknowledged as a separate entity, one that resembles the deceased but is ultimately different. By understanding the VDI as a technological artifact, subjects cultivate the knowledge that death is permanent,

and that the deceased cannot come back. For this reason, when using them for solving specific personal problems or for therapeutic purposes, they confront the magnitude of the impact of the death of the original individuals, recognising the permanent loss of the emotional, material and identificatory supports they used to embody. In the process, they come to terms with what they have lost and orient themselves to new life-sustaining activities, leaving behind their previous fantasy life to generate new affective investments.

6.4 Concealment: the VDI as organisational substitute of the dead

Methodologically, the Concealment image was identified as a supporting aspect in several images of the future of the interviewees. This means that although there was no single interview which had the elements of the Concealment image as its main narrative, there were some references to its specific dynamics to allow this image to be constructed from the data. The limited number of explicit references implies that to cover its distinctive aspects, the empirical material has to be supported by more theoretical content than in previous images.

The Concealment image of the future portrays Human-VDI interaction in even more instrumental terms, as applied to institutional or organisational dynamics. The continuing bonds, to the extent that the term can refer to instrumental relations, are ongoing but emphasise the formal and / or organisational features that become embodied in the VDI, such as obtaining from it specific knowledge that can enhance institutional operations or resorting to it to affirm values and membership. The mourning process can be characterised by heavy struggles to accept death, although this does not necessarily imply the appearance of negative affects that hinder the process. Instead, it means that members in the organisation cannot register the loss because internal culture rejects death and its disruptions. There is little to no acknowledgement of the radical contingency of social life and no recognition of the dislocation caused by death. Therefore, the incentives to detach from normalised patterns of behaviour or goals are reduced.

The degree of humanlike interaction presents unique features, as it may appear outwardly as if it were Human-VDI interaction, similar to that between human beings. However, the context and features of the VDI in the Concealment image suggest that human to system interaction is a more accurate description, given that the VDI would more likely be integrated into a complex technological system accessed by multiple people who are authorised to do so by institutional norms. As opposed to previous images, this does not require that the VDI is only in one place in any single moment. It can appear that way, or

it can appear simultaneously in different physical locations to fulfil organisational duties. The setting can be characterised as public, insofar as it occurs in a mostly public setting, in terms of space, time and perception by the social actors present in it. The defining features here is that there are a number of people who could be considered a group, it occurs in a time setting in which the interactants would be expected to be surrounded by others, and the interaction is not focused on personal matters but on formal ones related to institutional dynamics and decision-making processes. The reason for immortalisation is, at its core, an attempt to minimise disruption left by the absence of the original individual. In that sense, it can be labelled as an instrumental reason, given that what is sought is to substitute the deceased's organisational contributions.

The narrative pattern of the Concealment image can be summarised in the following way:

1) A problem concerning organisational dynamics, strategies or goals presents itself. The best person to help in its resolution has died at some previous point in time.
2) Members of the organisation activate the VDI and engage with it.
3) The problem or underlying issue which led to the activation of the VDI is solved, leading to the continuity of institutional dynamics.

This narrative pattern alludes to a wider social context wherein the VDI is deemed an appropriate technological artifact for institutional contexts, implying a cultural setting where instrumentalisation of the human being is commonplace and accepted. Similarly, it can be inferred that the VDI symbolises a particular manner in which imagined communities bound by contractual relations confront mortality in late modernity.[23] Although a narrative tone cannot be comprehensively assessed for the Concealment image due to its secondary or background presence in the interviews, there are clues that alluded to curiosity about the potential of the VDI for organisations, meaning that its different applications, as well as its limits, were something that raised ethical questions in the interviewees' minds.

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[23]   This is, of course, assuming there is continuity of the advanced forms of modernity in some territories and cultural contexts in the year 2040.

6.4.1 Litany: Active dead leaders

The layer of the litany for the Concealment image would exaggerate the accomplishments and active presence of important figures in the public and private sector as they remain in the form of the VDI. The framing would focus on their ability to influence the course of organisational action after their deaths by immortalising themselves through the VDI. This way, their absence, though felt, will be mitigated by their VDI.

The figure of the leader is important in the litany layer given its prominence and perceived social agency. This is why the litany emphasises decision-making processes and references historical figures who had a leadership position: "I do see it [the VDI] manifesting itself to offer advice. More than anything at the decision-making levels. Yes, to explain the ideas some scientists had. Even reprehensible people, like Adolf Hitler, for research purposes" (Alberto García, personal interview). Scientists and political figures like Hitler allude to the possibility (and resulting controversy) of creating a VDI for individuals in the scientific and academic community, as well as in the political sphere. This would carry risks even in conventional discourse, where the limits of symbolically resurrecting someone via a technological device would likely be at the forefront of discussions. Even then, however, the ongoing virtual replication of individuals in organisations, some for their leadership roles and others for their integral part in its internal dynamics, would be accepted as a fact of contemporary life (in 2040), and rarely questioned.

6.4.2 System / Social Causes: Organisational continuity despite the death of its members

Initially, the outward appearance of Human-VDI interaction would not seem to differ significantly from the social interaction dynamics described in the previous two images. Within the motivational processes, the VDI would have to fulfil its coded parameters, and the human interlocutor would want to obtain something from the deceased, the main difference here being that the gratification sought by the human interlocutor would be of instrumental and formal, rather than personal, value. The structuring processes would differ given that the demography and the ecology are characteristic of a public setting (groups or multitudes of people, spaces that are task-focused and where formal interactions take place). The interactional processes would change slightly as well, with the roles fixed but the VDI would be coded with a non-specific, generalised other frame, meaning that it would not display any personal traits of the deceased that are not required for the

context, whereas the human interlocutor would be inclined to engage with it as a tool and not as if it were a person. For instance, in the context of discussing the VDI as a helpful aid for practical purposes while he performed other tasks, Thomas Hubbard described: "the thing of the digital assistant [the VDI] is something that I'd liked and it would be sort of beneficial I think and allow you to sort of have that free time to focus on the thing that you want to focus" (Thomas Hubbard, personal interview). Within an organisation, a VDI which operated according to the behaviour described in this quote could conceivably replace a co-worker involved in a joint project with the human interlocutor or an executive assistant who had died suddenly in most tasks expected from the original person.

This alludes to a significant difference that is not outwardly apparent at first: the VDI, as a tool that meets practical needs within a network of formal, even contractual social relations, loses human attributes and gains more technological ones (from a social constructionist perspective). This means that the way the VDI manifests in a public and organisational setting does not have to match how a person would – that is, confined to a specific location and time. Instead, it might appear as a digital immortal at multiple sites in an institutional space, performing its same role but acting uniquely according to the inputs it receives from its many interlocutors. In this way, its characteristics are perceived as those of a technological system more than those of a person: "I would probably say that you could choose it to be an integrated system in a communications field. So, let's say that you probably have… if you are in a car, you probably have feeds running" (Karl Suotamo, personal interview). What would still characterise this concept as a VDI and not just a digital assistant or another technological device is the fact that in its behaviour it meets needs that would primarily only be able to be met by the deceased in the process of interaction within the institutional setting (or, in some cases, from within the institution to convey messages to external audiences). For this reason, behaviour matching that of the original individual, and not just performance of activities, becomes part of the means to successfully fulfil organisational objectives and roles.

To briefly outline what human to system interaction would look like while the system retains its form as a VDI, insights from the domain of ubiquitous computing systems can be borrowed. In a human-centric ubiquitous computing system, three characteristics can be expected to be found. First, the system's network of nodes should be able to assimilate information from the sensors which are being engaged with by the social actors in the system and by its surroundings. Second, the system needs to be able to locate the social

actors within it. Third, the different nodes of the system must relay information across the system. Additionally, as with other systems, protocols of access and use, as well as strategies for effective user-system interaction, need to be in place (Koo, 2010). Assuming these characteristics remain valid for the time horizon of 2040, it can be expected that people in high decision-making positions would have, according to established institutional protocols, privileged access to a VDI, and therefore can adjust settings to deploy or activate it in predetermined circumstances and in a case by case basis. If there are a number of human interlocutors that need to engage in interaction with the VDI, the system could track them and become activated at the nodes of the system nearest one to the intended human interlocutors. But because such interactions might be intended for specific tasks or need to be secretive for organisational purposes, the VDI's hardware features would need to detect the surroundings of its human interlocutors.

These features of a VDI as manifesting through a system offer clues to the characteristics of the materiality of the social practices focused on Human-VDI interaction. The hardware components of a VDI must be closely designed with the purposes of Human-VDI interaction and human to system interaction in mind. This means that the software component cannot be just a program running within specific hardware waiting to receive intentional inputs from its human interlocutors, as could be possible in a limited hardware and software version of the VDI in previous images. Instead, software and hardware need to be integrated in such a way that it assimilates information of its physical surroundings. For instance, sensors might be placed in nodes in the system that detect information of its human interlocutors, such as the relationship they had with the original individual, what access they have to specific information the original individual would have had and what they can and cannot request from it. Though not explicitly, hardware and software features resembling this description where brought up by the interviewees, as when discussing the example of a meeting in a work setting, Karl Suotamo framed the operation of the VDI in more systemic terms: "It would check and see, 'Oh, your meeting is over', and check your location and see that it heads away from meeting's location, and say, 'Hey, how did it go?'. It would be able to talk like that and make smart decisions based on being an integrated system" (Karl Suotamo, personal interview).

The competences of the social practice theory necessary in the Concealment image significantly contrast with those of the previous images. For the VDI, a crucial competence as an interactant is related to its materiality: the ability to provide or deny specific information to its various human interlocutors based on the surroundings and its formal

and organisational relationship with them. This was not a feature that was at the forefront of the previous images, as the human interlocutors were few in number and the generalised frame was personal, which meant that the VDI expressed a more "private" image of the original person only accessible to those who knew him or her well. In the Concealment image, however, this competence is key for the organisational image, as there are various potential human interlocutors and not all of them can have access to the same data by the VDI. For the human interlocutors, in turn, the ability to be able to interact via the technological systems and get the VDI to operate in a way that the institutional goals are met is the main competence required of them. The subjects who were in a position of control over the VDI's settings, meanwhile, would need to be able to manage them according to the desired role of the VDI in the organisation: "I mean, we already have personal assistants so there would be the option of customising your personal assistant to adapt idioms and idiosyncrasies of a deceased person" (Karl Suotamo, personal interview). This idea of equating the VDI to a digital assistant with the added value of the original individual's personal traits highlights the instrumental approach adopted within the institutional context, where interactions are based on exchange and goal oriented.

The meanings associated to Human-VDI interaction within the Concealment image represent a different take on the notion on the ancestor. In the case of the Concealment image, it is useful to recall how specific social actors might deploy symbols and statements related to death and immortality within the boundaries of formal, rule-bound organisations. This is a way some institutions might become imagined communities (Anderson, 1983; Seale, 1998), which promise a transcendence of death based on the previous and ongoing contributions (through the VDI) a person could make to the community. Again, this would involve a deployment of the VDI as a form of symbolic immortality (Lifton and Olson, 1974), in this case within an imagined community. This is best explained by how some people important in the creation or consolidation of an institution, as well as those who occupied a position of leadership within it, are remembered by it even after their deaths: "I can imagine that, yes. One event in which the founder of the Boy Scouts can come out and say some things, or an outstanding dead player who duels a living player in a tournament. It would be people who are special to the community" (Juan Ignacio Alcántara Montesinos, personal interview). As seen in this quote, the VDI could offer agency to the dead important to the imagined community on special commemorative occasions. In addition, it could allow new members of the organisation to meet them and possibly become more involved in the institutional dynamics.

This aspect of the VDI as an element which grants the possibility to the dead to become a permanent part of their imagined communities points to the way the Concealment image confronts death by promoting Human-VDI interaction. For one, the VDI is introduced as an element which minimises disruption, thus *concealing* the effects of the death of a person within the imagined community. In other words, because the VDI aims at matching the organisational role of the original (now deceased) individual, alterations in the performance of internal activities can be, to some extent, controlled and overcome. Particularly important members could return in the form of the VDI to boost members' morale or to offer guidance for the remaining members of the community: "These key people, people who are irreplaceable and others in the community would like to see again, they could come back in this form and be there for a while in events" (Juan Ignacio Alcántara Montesinos, personal interview). The example given here, wherein the VDI appears under special circumstances so that others can consult it or otherwise interact with it, exhibits elements of VDI creation and deployment as a practice of generativity that facilitates the guidance of the imagined community and continuity of vision. In this case, the irreplaceability of the original individual imbues the VDI with particular significance, as the value of that person for the organisation is, to the extent possible, preserved throughout time and can be reached when needed.

Whereas the active involvement of the VDI might be considered a practice of generativity that offers a specific manner of transcending death, the routinisation of Human-VDI interaction in the Concealment is more closely related to the mourning process of the members of the imagined community. In contrast to the previous images, the Concealment image features organisational dynamics where the original person is functionally replaced by the VDI in terms of its role and performance do not allow for the loss of that person to be registered. It is here that blocked or complicated mourning can emerge, as the activities carried out within an institutional setting are goal-oriented, and rarely aim to integrate the emotional and affective aspect of human relationships except to consolidate management practices. Recalling Glynos' (2014) conditions for mourning – the first being the event or site that enacts a publicly shared recognition of loss, and the second being an appropriate context within which loss can be processed –, it seems that the Concealment image cannot meet either condition insofar as it aims to integrate VDIs to everyday operations, looking for stability and in consequence limiting how loss is affectively and consciously acknowledged. Of course, it could be the case that shortly after the death of someone, some form of memorial service in his or her memory was performed, but

having the VDI continue in the institutional role of the original individual means that a feeling of absence cannot take hold in the rest of the members of the community, as a simulacrum of the deceased keeps engaging them for formal duties.

6.4.3 Discourse / Worldview: Lasting contributions via Instrumental Techno-optimistic Post-Mortalism

The discourse that motivates the social practices of Human-VDI interaction in the Concealment image resembles the one of the Ambivalence image, with one key detail that converts it into a new discursive articulation. It shares with the Ambivalence image the thanatophobia that drives the emergence of strategies for immortality (Bauman, 1992; Jacobsen, 2017b) that become embodied in the VDI, while techno-optimism manifests itself in the affordances of technological systems that can integrate the VDI into everyday organisational dynamics. Hence, the Concealment image also offers a variant of Techno-optimistic Post-Mortalism, as the fantasy of immortality offered by the VDI is strengthened by this device's routinisation into work-related practices.

The central feature that makes the discourse of the Concealment image a different discursive articulation from the one in the Ambivalence image is the *instrumentalisation*, and in some cases commodification, of the relational component of a person – possibly a digital persona left behind within the organisation – that is embodied in the VDI. This can be better glimpsed by what one interviewee considers an acceptable use of the VDI: "If they do it for knowledge purposes, recreating a person in terms of how their brain thought, in order to solve a problem or to transfer their knowledge, I would find it interesting and valid" (Alberto García, personal interview). The quote reveals that what is seen as valuable for recreation are the elements of a person that can be put to practical use, such as knowledge or problem-solving strategies. The affective component that can be embodied in the VDI and the emotional reactions that can be derived from Human-VDI interaction in a personal relationship are not assigned importance within an institutional framework.

Where there is an affective component involved or where emotional reactions are desired, the VDI would be deployed as a means to produce such effects so that organisational dynamics can continue undisrupted. The uniqueness and genuine personal traits of the original individual, which were coveted as features of the VDI in the Ambivalence image so that the human interlocutors could relive precious moments they had with their loved one, disappear in the Concealment image in favour of the practical, "productive" aspects of a person, those that can ensure smooth institutional operations. The discursive

articulation that emerges from this means-end rationality approach to the potential of and engagement with the VDI can be labelled *Instrumental Techno-optimistic Post-Mortalism*.

Instrumental Techno-optimistic Post-Mortalism may appear in societies characteristic of the advanced stages of modernity, wherein work in formal organisational structures constitutes a source of meaning for people. This occurs because the forms of individualisation and the new forms of worship to the individual enabled by digitalisation weaken traditional forms of achieving symbolic immortality (Bauman, 1992). Therefore, advanced modern structures, such as complex bureaucratic networks and transnational corporations, devise mechanisms that offer a symbolic form if immortality to its members by encouraging outstanding performance in assigned work duties and leaving "lasting contributions" that outlive them. Teodorescu (2017) reasons that contemporary corporate discourse in the West fosters narcissism, rewards the breaking of limits in the pursuit of professional accomplishments and renders employees into infantile figures, all of which stress the creation of meaning through work. This discourse is assimilated by subjects their immersion in specific organisational cultures: "You are bombarded by people who want to create. And this is maybe, *maybe*, more individual and effective than ever before. Propaganda always factors into people who wittingly or unwittingly are trying to create a worldview inside people's head" (Karl Suotamo, personal interview). From this perspective, the VDI can be understood as an immortalisation strategy based on harnessing an individual's productive capacities, which are willingly left behind by the original individuals under the promise of transcending death by permanent contributing members of the imagined community.

As with the previous images, the social practices of Human-VDI interaction are governed by their own sets of discursive logics emanating from Instrumental Techno-optimistic Post-Mortalism. In this case, there is only one new discursive logic that can be said to present unique features, as the other two logics are a combination of the logics of the previous images. The new logic is the *social logic of technological continuity*, which emphasises the minimisation of disruption to the organisation by ensuring the permanence via the VDI of the deceased member. Although the extent to which the VDI could take the place of a member and continue performing his or her duties is uncertain, and would likely depend on the amount and quality of data collected from the original individual prior to his or her death and on the sophistication of the VDI's material components, it is possible to expect the reaction by fellow members of the imagined community to integrate

the VDI so that organisational activities with little alterations, such as the case of a CEO who dies: "With this technology, for the CEO to remain part of the board of directors, they put the avatar" (Juan Ignacio Alcántara Montesinos, personal interview). Given that the social relations in a given institution that is hierarchically structured would also be characterised by undercurrents of power and exclusion in the decision-making process, social logics of technological continuity aim to consolidate hegemonic visions of organisational culture and dynamics when the opportunity for change offered by a death event presents itself. Therefore, social logics of technological continuity, intentionally or not, might exacerbate the marginalisation of competing visions and goals.

Fantasmatic logics of immortalisation, seen in the Ambivalence image, and political logics of techno-instrumentalisation, present in the Restoration image, operate together in the Concealment image to foster the immortalisation of the original individual's organisational role and productive capacities. The fantasy of immortalisation takes the form of a fantasmatic narrative wherein transcendence after death can be achieved by the lasting impact an individual has had on the imagined community represented by the institution. Meanwhile, the political logic of techno-instrumentalisation is at play insofar as the VDI is seen only in terms of the contributions it gives to a company, government bureaucracy, or civil society organisation reliant on professional labour. Though there can be actions oriented to highlighting the VDI's resemblance to the original individual, these would only appear if that increased productivity or optimised personnel performance were expected outcomes. Otherwise, the generation of affects in the members of the imagined community would probably be considered undesirable, as these decrease the instrumental and goal-oriented dynamics characteristic of a formal, rule-bound setting.

Hence, the three logics of Instrumental Techno-optimistic Post-Mortalism – social logics of technological continuity, fantasmatic logics of immortalisation and political logics of techno-instrumentalisation – imbue social practices of Human-VDI interaction in the Concealment image with a notion of symbolic immortality intimately tied to the imagined community that the institution represents. The linguistic markers in the logics revolve around signifiers which accentuate the instrumental objective of the VDI, such as "effectiveness", "solve", "knowledge", and so on, with the signifier "contribution" potentially becoming a nodal point. These, in turn, become articulated with the signifiers related to the technological nature of the VDI, like "digital assistant", "avatar" and others. Though the specific signifiers can be expected to vary according to each organisational structure that incorporates the VDI into its dynamics, they would nonetheless stress the

themes of instrumental, practical value and technology. The operation of the three discursive logics is shown in Figure 5.
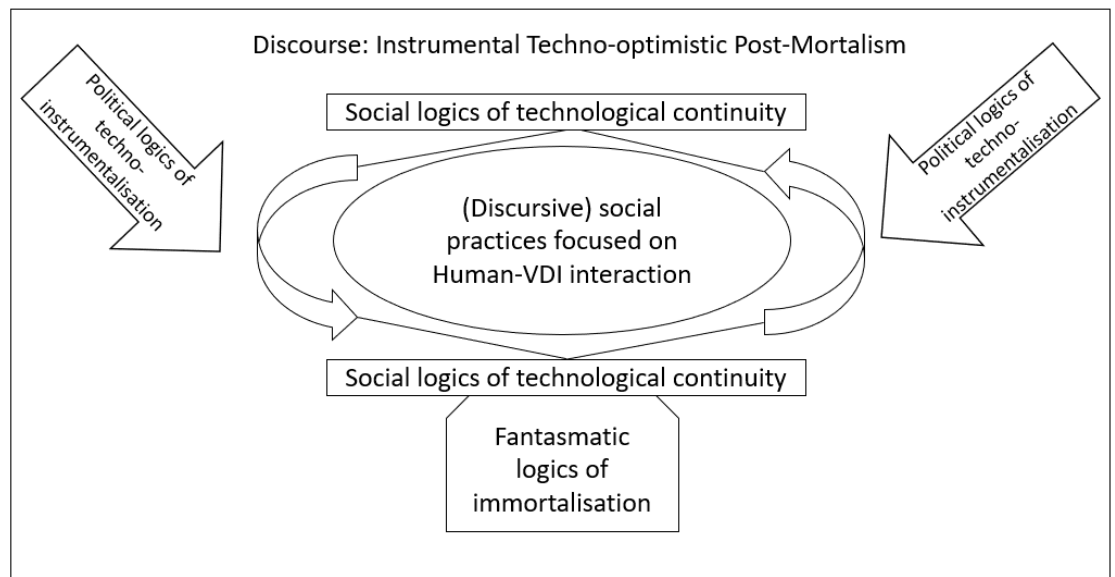
Figure 5: Discursive logics and social practices focused on the VDI – Concealment image.

Figure 5 shows the (discursive) social practices focused on the VDI as they are routinised into organisational dynamics via the arrows. Social logics of technological continuity operate within a synchronic dimension, minimising disruption caused by the death event and concealing the original individual's absence. Fantasmatic logics of immortalisation support the social logics by outlining transcendence within an imagined community, while political logics of techno-instrumentalisation institute and defend the practical use of the VDI within the institution.

The Concealment image offers a helpful opportunity to explore how mourning, beyond being a personal journey which one embarks on, is also shaped by political action (as understood within the framework of Post-Marxist discourse theory). As expressed in the System / Social causes layer, social practices focused on Human-VDI interaction in the Concealment image do not meet the conditions for mourning to take place, but what is relevant here is not only the ongoing institutional role the VDI routinely performs, but also the decision by the living to incorporate the VDI in this manner in organisational dynamics. Since the ethics of mourning entail consciously acknowledging the fantasy life enabled by the original individual, thus facilitating the discernment of the identificatory and emotional supports the real person embodied for others from the real person him or herself, the decision to deploy the VDI affects this process by complicating discernment and transferring the supports to the VDI. This results in mourning being simultaneously distorted by both the instrumentalisation of its members in the form of their VDIs, ex-

cluding elements of affectivity from appearing, and by the manipulation of the fantasmatic narratives of its members, which direct affective investment not only in the VDIs but in the imagined community represented by the organisation.

This raises the question of whether loss is creatively integrated into social life or not. The main feature of the Concealment image regarding mourning is that loss is neither registered nor creatively assimilated. Glynos argues (2014, p. 146-147) that the key political question concerning mourning is whether enough space and time is granted for the mourning process to take place, which involves recognising how the death matters and the magnitude of the loss. In the Concealment image, the deployment of the VDI means that space is not given – the confrontation with a technological spectre of the deceased in organisational routines compresses the space for dealing with mortality, while the time might also be overlooked since ensuring continuity requires rapid action that minimises disruption. In consequence, the radical contingency of social relations is not acknowledged, opportunities for change presented by the death of someone are dismissed in favour of the status quo, and mourning becomes complicated or devolves into pathological melancholia. Political action in the Concealment is revealed, therefore, in the restrictions placed on mourning for the sake of organisational dynamics and in the marginalisation of other manners for coping with death.

6.4.4   Myth / Metaphor: A cog in the machine

Since the VDI in the Concealment image is the result of the instrumentalisation of personhood by harnessing productive capacities and personal traits that have practical value for a bureaucratic apparatus, an evocative metaphor for personhood and mortality is that of a "cog in the machine". Although arguably a metaphor more suitable for the early modern period than for the advanced stages of modernity, the cog in the machine metaphor represents the most salient and desired features of a person within complex organisational settings.

The cog in the machine metaphor emerges from Taylorist management theory, wherein the organisation of labour aims at enhancing economic efficiency and increasing labour productivity. Critics have pointed out that individual human qualities are ignored within Taylorism while mechanistic characteristics are accentuated and an impersonality frame is imposed upon the members of a workplace setting (Vittikh, 2015). In this sense, the cog in the machine metaphor transforms human beings into machines, with traces of

freedom, initiative and intelligence being removed to generate optimisation and efficiency in organisational dynamics (Derksen, 2014).

This equating of human beings with cogs within complex machinery – of which the VDI can be considered an extreme version of the metaphor – has implications for how an organisation as a whole faces the death of one of its members. The breaking down or malfunctioning of a cog, which could be understood as an equivalent of death, is solved by replacing it with another cog of the same dimensions which fits where the previous cog was. The original cog is discarded, but its place within the machine remains, waiting to be occupied by another cog. A person is different from a cog, in the sense that it has unique personality traits, behaviour and mannerisms, as well as a combination of different roles that he or she occupies within a network of social relationships. But in an organisational setting, if a person is reduced to its knowledge, problem-solving talents and productive capacities, then he or she becomes similar to a cog: it contributes something to the whole, but is replaceable because its valued attributes can be accounted for in other ways. In the present, that usually occurs by hiring other candidates that have comparable skills. However, for specific individuals whose combination of talents, behaviour and personality represented an irreplaceable asset for its home institution, the VDI could work as a close substitute. The mortality of its members, then, would not have to stop a bureaucratic apparatus from operating, because the VDI would retain all the elements that were perceived as valuable for the organisational dynamics. The original individual, in its humanity, would disappear, but a literal machine that mimicked his or her organisational role and generated the same value would become a permanent (and modifiable) replacement.

The cog in the machine metaphor works as the deepest layer of the Concealment image of the future, structuring the upper layers by emphasising the productive and practical aspects of a human being, which is equated to a piece of machinery. This view of the human being reinforces Instrumental Techno-optimistic Post-Mortalism, which stresses the value of the instrumental aspects of the VDI while encouraging its use as a way to transcend mortality. This discourse, in turn, offers a framework of meaning to social practices of Human-VDI interaction in an institutional setting, wherein its routinisation into everyday dynamics and/or its deployment for events that manipulate the affectivity of its other members allows for continuity after a death event and minimises

disruption. The organisational embrace of the VDI could, in turn, manifest in the recreation of socially recognised public figures who have already died, but who are seen as having an interpersonal allure or are central for an organisation in conventional discourse.

The social practices depicted in the Concealment image arguably go against a pedagogy of death: by emphasising continuity and the minimisation of disruption, the conscious acknowledgement of the effects of death in the rest of the members of a community is discouraged. The instrumental approach taken in relation to a VDI when it comes to organisational life, instead of cultivating familiarity with mortality, relegates it even more towards the background of social life, as the consequences of losing another member are less impactful when the VDI is deployed as a substitute for the "productive" or "functional" value of its members. Yet, as a result of research, identifying the possibilities portrayed in the Concealment image can be said to foster a pedagogy of death insofar as strategies for using the VDI as a strategy for immortality that foregrounds the instrumental aspects of human life become visible. Therefore, preventive measures can be taken so that eventual social practices that diminish the familiarity with death and complicate mourning do not become widespread.

6.5   Autonomy: Facing death and loss without the VDI

The Autonomy image's characteristics position it as a singular one among the four images of the future constructed from the data. Whereas the previous three images had Human-VDI interaction at their centre, the Autonomy image has Human-VDI interaction taking place in its background, in the wider societal context within which the interviewees pictured themselves in, but not as a specific feature of their own life in 2040. This results in a few challenges for outlining the social practices taking place within it. Firstly, the subjects' responses to death and loss were obtained and are featured in the description, but do not relate explicitly to Human-VDI interaction given their opposition to this phenomenon. This results in increased difficulty in describing alternative death- and mourning-related practices while attempting to describe the interviewees' approach to something that is explicitly absent from their lives: purposeful engagement with the VDI. An additional challenge surfaced in relation to linking the main theoretical elements for characterising Human-VDI interaction in the Autonomy image, as the lack of material entailed a lack of detail to describe the phenomenon. A final difficulty revolves around obtaining a narrative structure based on the lack of detail and the interviews' critiques of Human-VDI interaction.

Of course, it could be argued that all these features of the Autonomy image make it a different *kind* of image, one which is about death and mourning but cannot be considered part of the main set of images featuring Human-VDI interaction. As the analytical categories and the Causal Layered Analysis that follows reveal, however, it is the fact that these death- and mourning-related social practices position themselves *in relation to* Human-VDI interaction and the *ideological critique* the image embodies towards a technocentric future that places the Autonomy image alongside the previous three images.

In the Autonomy image, the continuing bonds displayed between the living and the dead are ongoing and personal, manifesting themselves mostly via memories or through objects that help users recall those memories. In this sense, they can be considered internal bonds. They are initiated by the bereaved, in the sense that some stimulus activates the bond at any given time and they act on it to think about the deceased or talk to them, even if no answer is expected. Mourning is often accomplished and death acceptance is reached, even if initial struggles to accept the loss can be present. The practices the subjects engage in that foster the separation between their image of the deceased and the actual person orient them to invest themselves in new life experiences.

The degree of humanlike interaction can be discussed in two ways. On the one hand, their interaction with a VDI, if it happens to take place, will be the VDI of a person external to their contact network and their engagement with it could be compared to a human using any other advanced social technological device. But their relationship with the deceased, however, is maintained through other means, such as performing cultural events, watching videos or looking at photographs. The setting of the interaction with a VDI is random as a result of its infrequency, but the setting where the continuing bonds are experienced is a personal one, such as the home of the bereaved or the home of the deceased. The interviewees expressed an explicit desire to *not* immortalise their loved ones in the form of the VDI, but were open to other ideas which facilitated the memory of the dead to live on.

Although a coherent narrative cannot be abstracted from the interviews, a sequence of events can be assumed to take place based on the descriptions the interviewees gave of the practices of maintaining their relationship to the dead in some way or form. This is:

1) The original individual dies, generating a dislocation in the fantasmatic narratives of the subjects' lives.

2) The option to immortalise the dead person in the form of the VDI is presented to them, which they reject.

3) The living decide to "immortalise" or maintain their relationship to the dead in some form which does not involve the VDI.

4) When encountering a VDI of another person, they would decide to avoid it, or if forced to use it, treat it like a technological device. Similarly, they would engage in criticism of practices focused on Human-VDI interaction.

This pattern suggests that, in the social world of 2040 where the VDI is present, the possibility to use it in either of the three forms expressed in the previous images would exist. The subjects here, however, prefer to address mortality and undergo mourning in their own way, with references to significantly older technological means or engagement with nature to help them in gaining the acceptance of death and loss. The tone of the interviews from which this pattern was obtained indicate concern regarding the emergence of practices of mourning reliant on the VDI, which they argue create dependency or complicate the acknowledgment of loss. In contrast, there is a more optimistic tone framing the interviewees' alternatives for confronting mortality, suggesting greater confidence in them than in technocentric approaches.

6.5.1 Litany: Criticism against Human-VDI interaction and promotion of alternatives

The Litany layer in the Autonomy image comprises the perspectives and opinions of people for whom autonomy from advanced technological artifacts in confronting loss and go through mourning is important. For this reason, it can be expected that they would declare in public discourse how Human-VDI interaction does not maintain the dead in the world of the living but is just an illusion that helps the bereaved feel better. Speaking of potential problems related to Human-VDI interaction as a common practice, Alberto García expressed: "One is developing dependency. Another is to detract from life. Three is making decisions lightly. Dependency why? Dependency because those who use that device are not going to know how to separate the real from the imaginary" (Alberto García, personal interview). This quote stresses the different dimensions that constitute interaction with a VDI as problematic. Dependency is associated to human mental health, detracting from life is a moral position and making decisions lightly involves human behavioural patterns. Although these three aspects could indeed become problems, some people critical of Human-VDI interaction could be assumed to express these reservations about engaging with the VDI based more on predefined opinions and less on any careful assessments made on the matter, as they would largely avoid the VDI themselves and think about the phenomenon in the abstract.

Resulting from this criticism of the VDI, the promotion of alternative practices for facing death and go through mourning can be expected to emerge. For instance, the option of resorting to practicing long-held cultural rituals can be considered: "As the average Catholic, I think going to mass, praying and similar activities [are acceptable]" (Alberto García, personal interview). A different approach would involve personally remembering the dead without adhering to cultural or religious beliefs, as Olivia Mendoza, a young Uruguayan-Italian woman, mentioned: "Undoubtedly there is [an afterlife] in the sense of a person's memory, and there they are for remembering. I don't believe in paradise" (Olivia Mendoza, personal interview). The overall idea promoted in this layer is to carry out activities that allow people to confront mortality in a manner in which they do not depend on a technological simulacrum of the deceased to acknowledge the magnitude of the loss. The exact nature of the activities suggested would vary according to cultural background and personality, among other influential factors.

6.5.2 System / Social Causes: Avoidance of the VDI and the performance of alternative death acceptance and mourning practices

Human-VDI interaction is largely absent from the Autonomy image, ceding its place to other practices which facilitate the acknowledgement of death and its consequences. For this reason, the elements of social interaction by Turner (1988) cannot be said to describe how people approach the VDI in this image of the future, as the view of subjects in the Autonomy image is that it is just a technological construction. Instead, the Theory of Planned Behaviour (TPB) (Ajzen, 1991; Young et al., 2009) and its emphasis on human control on technology might result more relevant here. In the context of discussing her negative opinion of the concept of the VDI, Verónica Castro, a Mexican woman in her sixties, stated her position on the possibility of owning one: "What do I want...? What, are you going to bring back a person who's been through this life? And he's gone, then let him go in peace! Yes?" (Verónica Castro, personal interview). The reference here to "let go" of someone, to detach, displays a preference for autonomy over the mourning process. By bringing back the relational component of someone in the form of the VDI, this detachment does not occur, at least in this interviewees' eyes. In this sense, the VDI is perceived as taking control away from the living and reducing their autonomy in the confrontation with death and loss.

This idea was reaffirmed later in the interview, when Verónica Castro argued: "It [the VDI] is very interesting for the effects it can have, but I consider it to be very much

like hanging on to someone" (Verónica Castro, personal interview). Interpreting statements such as these from the perspective of TPB, the VDI would be in control over the emotional state and mourning process of its human interlocutors. In consequence, the perception of owning and engaging with a VDI might be that it would not foster the safety (in a psychological but perhaps physical as well) of its owners. It, in contrast, would put them at risk of complicated mourning or pathological melancholia. To avoid this, rejecting any use of the VDI for accepting death and loss is stressed in the system / social causes layer of microsocial behaviour.

If Human-VDI interaction is dismissed as an option, what are the alternatives put forward by subjects who favour autonomy? The concise answer is that there are multitudes of other activities which, as long as they embody the meaning of maintaining a relationship with the dead and do not create dependency on a technological device, are useful for accepting the death of someone. Some can incorporate supernatural elements and might involve the performance of certain mortuary rituals to care for the continuing bond with the deceased without being disturbing for any of the interlocutors. For instance, when describing how she first handled the death of her father, Verónica Castro described seeing his ghost resting in an armchair in her bedroom.[24] Concerned over this situation, she asked a friend of hers for advice, which led to the following moment:

> *"I armed myself with courage, and I said 'Daddy, I am well' – but, I was very frightened [by his ghost]. And I continued speaking with him, and then I started praying, and praying, and praying, and praying. And I do not know if that was something real or not, but after that, I did not see him again. And I was calm after that"* (Verónica Castro, personal interview).

In this account, it is worth stressing that although Verónica did not see her father's ghost again, she still felt protected and watched over by him. The factual accuracy of this claim is not important – whether ghosts are real or not, as well as if what Verónica was seeing was indeed a ghostly apparition or a hallucination, a dream or a prank of some kind – but the social construction of meaning is. This event could be interpreted as someone who, experiencing unresolved grief, needs to directly confront a symbol of mortality (a ghost) on her own, despite intense fear of what she was going through. Material aspects

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[24] This was an actual event that happened in the interviewee's life. However, she was narrating the event trying to reference how she envisioned a possible interaction with the dead in the future of 2040.

in the performance of this activity – a personal and frightening encounter with a representative of death – were minimal, reduced to religious imagery (a small jewellery Catholic cross she had as a necklace) and the furniture of the setting the interactants (herself and her father's ghost) were in. The competences required were emotional stability and bravery, as well as knowledge of religious rites as represented by the prayers. The meaning, which is a benevolent ghost (that of her father), is an instance of a continuing bond, one that is deceased-initiated but, once experienced, it becomes unilateral on the part of the bereaved (who is the one talking to the deceased and praying numerous times).

In Verónica Castro's case, the central activity (speaking to the dead and praying) that maintained the relationship in its initial stage took place in a single instance, although a transformed version of it (speaking to the dead, without the presence of ghosts) continued for a while. Yet, the disappearance of the ghost might imply successful mourning, in that the visible manifestation of her grief – her father's ghost – disappeared once she accepted his absence and told him that she was well, which could be interpreted as a reassurance to herself that she would be able to deal with his absence. Continuing to speak to her father, and sensing his presence, might signal an approach of integrating the deceased into her new life practices. This is why, when asked once again if she would consider using the VDI for another loved one who might die in the future, she declared: "For what? To bring back the dead? No!" (Verónica Castro, personal interview). Such a remark indicates the acceptance of death, understanding that a loved one is permanently gone, but their presence and influence remains. Acknowledging this influence might take different manifestations, such as talking unilaterally to the dead and thanking them for their role in the lives of their loved ones.

Though the previous example featured supernatural elements in the continuing bonds between the living and the dead, this does not have to be the case. Mortuary rituals, including religious rites intended to facilitate the adjustment to the death of someone are common across the world and would presumably continue to be carried out in the social world of 2040. Commenting on her perspective of Chinese Buddhist death rites, Wai Ling mentioned: "The majority of the population is Buddhist. So, I think death… there is a lot of superstition regarding death ceremonies. I mean, there are a lot, let's say… a lot of

ways of saying goodbye to someone" (Wai Ling, personal interview).[25] From Wai Ling's perspective, adherence to religious death-related practices favour the process of mourning because they offer a framework for living in the face of death: "If something [like a death event] really happened, and I think this happens with all religions, you will be able to accept it and you will try to do your best [to live after the death of someone]" (Wai Ling, personal interview). If examined under the lens of social practice theory, the materials required for coming to terms with the death of someone would be those required for the mortuary rituals of each religion and cultural affiliation, i.e. those necessary to store the remains of the deceased, religious artifacts for public ceremonies, a proper space for mourning, and so on. The competences would again involve knowledge of the death rites, and willing adherence to religious or cultural frameworks. The meanings would also depend on these frameworks and could encompass anything from reincarnation to the end of the person's existence.

Whereas the previous two examples explicitly referenced organised religions (Christianity, Buddhism), the confrontation with mortality and the process of mourning can also involve a deeply personal journey that, on occasion, conflicts with the practices of organised religion: "My family is quite Catholic. In fact, I was raised like this and made me do catechesis. That made me realise that I was going the other way, that I didn't fit those thoughts and beliefs" (Olivia Mendoza, personal interview). This quote illustrates the tension between the expectations of the social and cultural context, on the one hand, and the desire to assign personal meaning on death by the individual, on the other. This might result in a person seeking autonomy in his or her mourning journey not only from technology but also from the structural pressures being faced. This is evidenced in Olivia Mendoza's response when asked why she would avoid owning a VDI: "Because death is very difficult, and each person processes it differently. And we all stick to something as people leave us. I still have little things from people who have passed, and I think yes, a lot of people would hold on" (Olivia Mendoza, personal interview). Here, the numerous possibilities to cope with a death event suggest that adopting an approach of personal significance is seen as desirable, as it establishes the centrality of the relationship between

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[25]   This claim might be untrue. The majority of mainland Chinese people are atheists, followed by those who practice Confucianism, and then the Chinese Buddhists. However, within the context of the interview, it is unknown if that claim is supposed to refer to mainland Chinese people or to the Chinese immigrants in Wai Ling's temporary country of residence.

the living and the recently deceased as a way of gaining death acceptance and successfully accomplish mourning.

Even in personal mourning processes such as Olivia's, there would still be some material elements present in the form of belongings of personal importance that reflect the relationship the bereaved had with the deceased: "Photos, videos and personal objects yes, to help keep them in memory and share it with others. And today you do that, but with less advanced technology. Other mechanisms [in the future] might facilitate it as well" (Olivia Mendoza, personal interview). The central competences, meanwhile, would require that the mourner is emotionally stable so that the magnitude of the loss can be registered fully. The meanings would be varied, but the emphasis on autonomy would accentuate that, whatever meaning is attributed to objects, behaviours or practices, it would still be the result of personal psychological and sociocultural construction, and nothing inherent to them.

From this characterisation of the social practices in the Autonomy image, a recurrent theme can be identified. The Autonomy image's future resembles more closely the past and the present, as the practices for coming to terms with death are similar in their basic elements to those currently carried out. Since they explicitly challenge the integration of advanced electronics to simulate being the deceased, subjects look for other sources of meaning that orient them towards life, such as previous and current practices for facing mortality emerging from religious or non-institutional cultural frameworks. This reading of a possible future is not, however, a simple continuation of current practices, but a reinvigoration of them. Against a background where Human-VDI interaction were taking place, subjects who favour autonomy would visit cemeteries, watch old videos or view old photographs to reignite joyful memories with their deceased loved ones while considering the personal path to mourning as part of personal growth, as argued by Antoine Thibeault, a French adult man: "I would not interact with it [the VDI], because I think it is part of personal development to mourn. I think it would truncate my own development and that of the people around me that are still alive" (Antoine Thibeault, personal interview). As expressed in this quote, subjects would stress the lack of humanity in a VDI and their detrimental effect on how the living come to terms with mortality. Thus, they would seek to attain greater autonomy from the dead's influence without severing the bond completely. More likely, they would integrate them into their lives through non-pathological melancholic identification and/or one of the pathways of symbolic immortality described by Lifton and Olson (1974).

6.5.3   Discourse / Worldview: Natural Mortalism and death acceptance

The decision to rely on more traditional cultural means and on one's own inner emotional and cognitive skills for the acceptance of death and for mourning can be read as a critique of the previous image's discourses on the desire for immortality and the role some forms of technology, such as advanced electronics, should play for accomplishing these objectives. The Ambivalence and Concealment images displayed the pursuit of immortality in the form of integrating the VDI as a part of daily life, a practice which was governed by thanatophobic discourse and Post-Mortalism. They did so by creating a simulation of the deceased in the form of a social algorithmic entity which was embodied in the VDI, which was promoted by techno-optimism. Although the Restoration image dismissed the idea of immortality of a loved one being achieved through the VDI, it still emphasised the centrality of advanced electronic technological artifacts for reaching an acceptance of death and undergo mourning as part of a broader discourse of technological neutralism.

The Autonomy image rejects thanatophobic discourses and Post-Mortalism by framing death as something that is part of the natural experience of being alive. Hence, it is also a form of the *mortalist discourse*, although in contrast to the Restoration image's more neutral perspective on mortality, in the Autonomy image it is viewed in more mysterious terms and it is understood as a more explicitly positive force: "I think I ended up doing peace with the fact that I don't know, I'm never going to know what's really going to happen [after death]. But we do have a life limit and we have to enjoy what we have" (Olivia Mendoza, personal interview). This quote stresses both the fundamental phenomenological uncertainty that death presents for conscious and reasoning mortals like human beings and its role in the creation of meaning for life experiences. The fact that death is inevitable and inescapable also supports an optimistic message that living moments should be cherished and be meaningfully spent. In this version of mortalist discourse, the conscious mortal being (in this case, a human being) adopts a respectful position and recognises its limits in the presence of the phenomenon of death: "I present myself with all humility before this individual event that is inevitable. I am not opposing any resistance to what death is as such" (Antoine Thibeault, personal interview). This approach to facing mortality accentuates its peaceful acceptance, one that is aware of the limitations of a mortal being and embraces its place within natural cycles of life and death which are beyond the control of any human endeavour.

This version of mortalist discourse is discursively articulated with a naturalistic stance on living and dying, which functions as a critique of the centrality of technology. Life and death are framed as natural events, which become distorted the moment one introduces technological artifacts and mechanisms in an attempt to gain control over them. For instance, when discussing his understanding of technology, Antoine Thibeault characterised it as a masculine construction, and expressed: "I think it is a way for the human being to seek to control life and therefore death. I think that ... it grazes arrogance (both Antoine and researcher laugh). To give ourselves the illusion that we can control our environment" (Antoine Thibeault, personal interview). This perspective can be labelled *naturalism*, insofar as it rejects a narrative of mastery over natural phenomena by technological means. Naturalism is also seen as respectful of the mysteries of life and death, respect which technology aims to dispel: "[Technology is] an idea that reflects the fear of the human being before life and death. I tell you, for me life and death are the same. And it enters the logic of positivism as well, of giving the explanation to the inexplicable" (Antoine Thibeault, personal interview). This quote showcases a critique over humankind's reliance on technology to help it make sense of the world and confront the challenges in it. But as Antoine's point of view indicates, present underneath this pursuit of technological dominance over nature is a sense of insecurity of the human animal in the world, one that is heightened by awareness of its mortality, and thus seeks to control it.

The discursive articulation of mortalist discourse with naturalism can be termed *Natural Mortalism*. Natural Mortalism posits that life and death are not, in fact, two clearly distinct phenomena, but can be better understood as a continuum of natural forces: "[Death] goes hand in hand with life. Increasingly I cannot dissociate life and death. For me there are fewer and fewer borders between both ideas, which we can humanly develop. Death is part of normalcy. And, it is probably a stage" (Antoine Thibeault, personal interview). The signifying chains in Natural Mortalism would have "nature" as its nodal point, with signifiers such as "normal", "existence", "limit" and so on modifying the discursive construction of life and death. Signifiers that emphasised its critique on the centrality of technology could also be identified in this discourse, such as "unnatural", "fear", "control", "arrogance" and others stressing the artificiality of technocentric discourses that aim to tame life and death.

The social practices in the Autonomy image would be governed by its respective logics. Fantasmatic logics of death acceptance are shared with the Restoration image,
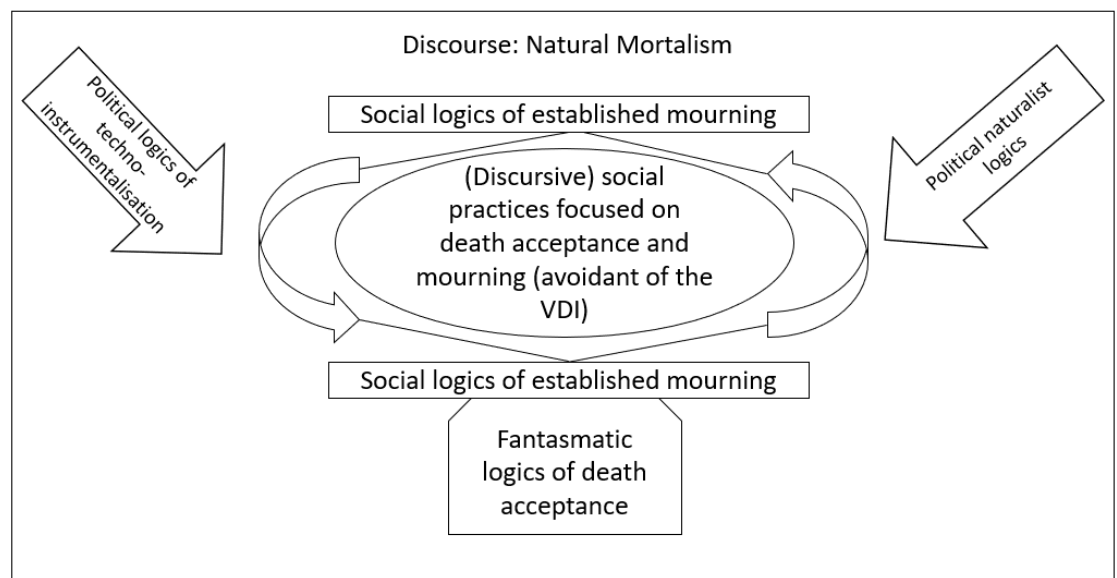
with social logics of established mourning and both political logics of techno-instrumentalisation and political naturalist logics constituting the specific logics of the Autonomy image. *Social logics of established mourning* refer to those that aim to maintain and/or bring back established cultural practices of mourning from the past and the (current, as of 2020) present. These logics encourage mortuary rituals or personal activities that facilitate the mourning process but would explicitly reject Human-VDI interaction as a possible option: "I think this moment [of mourning] has a reason for being, yes. Because it has always been part of us. I think it [Human-VDI interaction] would greatly truncate our personal development. So, I want to grieve" (Antoine Thibeault, personal interview). As reflected in the quote, there is also an underlying desire for autonomy, one that is expressed in the form of greater agency in the mourning process. Human-VDI interaction, if viewed from the perspective of these social logics, threatens the agency that established mourning processes (either personal or communal) would grant to a bereaved person.

Meanwhile, the recognition of the mourning process as meaningful and part of the human experience of living represent the specific approach the *fantasmatic logics of death acceptance* adopt: the obstacle is not death, but the prospect of truncated personal development by interacting with the VDI: "I, despite having the possibility on this day [in 2040], sincerely believe that I would not interact with it. […] I would not like to go through a device to be in contact that would make a dead person fake being alive" (Antoine Thibeault, personal interview). Within Natural Mortalism, the fantasmatic narrative would position the acceptance of death as the ultimate goal. Consequently, finding autonomous ways to mourn that do not involve virtually recreating the person in the form of the VDI orients the bereaved towards that goal.

The two political logics at play in the Autonomy image – *political logics of techno-instrumentalisation and political naturalist logics* – aim to emphasise the technological characteristics of the VDI and present a critique of them while highlighting the fact that life and death are natural forces that should not be subject to the control of human will: "Death would lose its respect. I think so. And if death loses its respect, life loses it. […] I think that the human being would lose respect for death [by interacting with a VDI], and therefore, respect for life" (Antoine Thibeault, personal interview). These two political logics have complementary roles, with the critical stance adopted by political logics of techno-instrumentalisation weakening the centrality of technology for confronting mortality and political naturalist logics promoting serenity and composure when facing death and undergoing mourning, which is undermined by Human-VDI interaction: "Having a

hologram of a family member [functioning as a VDI] seems to me it could generate negative effects on people's reasoning and the way they relate to life" (Olivia Mendoza, personal interview). As expressed in this quote, the Autonomy image frames the interaction with a VDI as something that complicates a person's investment in life. It would direct their affective energy and desire away from "natural" life experiences and orient them to artificial ones. The consequences of this, in the view of the Autonomy image, would be reduced agency and limited capacity for change, which are opposite to the goal being pursued: equanimity when dealing with death.

The interplay of the logics of Natural Mortalism – social logics of established mourning, fantasmatic logics of death acceptance, political logics of techno-instrumentalisation and political naturalist logics – is presented in Figure 6.

Figure 6: Discursive logics and social practices focused on the death acceptance and mourning – Autonomy image

Figure 6 shows the (discursive) social practices that seek the acceptance of death and successful mourning, their performance expressed via the arrows. Social logics of established mourning operate synchronically, looking to bring back or maintain culturally acceptable practices of mourning (either communal or personal). Fantasmatic logics of death acceptance support the social logics by positioning the denial of death as the obstacle to be overcome, while political logics of techno-instrumentalisation emphasise the technological nature of the VDI and political naturalist logics urge subjects to be respectful of life and death while maintaining composure.

Natural Mortalism is a discourse which orients the subject to discover the contours of his or her fantasy life and to undergo a mourning journey which reveals the radical contingency of social relations in a more explicit manner than the discourses in the previous images. In this sense, it can be said to foster the ethics of mourning (Glynos, 2014). Firstly, Natural Mortalism disrupts technocentric approaches to mourning, which despite

their arguable advantages, distributes the effort involved in consciously acknowledging the magnitude of death between the subject and the VDI. As an alternative, Natural Mortalism concentrates the effort on the subject and his or her network of contacts and directs them to the performance of events or mortuary rituals which assimilate the dislocation experienced in discursive reality, which includes their personal narratives of everyday life. By doing so, it aims to cultivate a sense of autonomy and resilience, working simultaneously to ensure that the bereaved act to meet the two conditions for mourning: an event or site where the loss is recognised and a context which enables the creative integration of loss into their personal lives.

Natural Mortalism asks, additionally, to consider life as significantly shaped by death, in a natural cycle wherein the acceptance of death by those still living is necessary for a renewed attachment to life:

> *"Given that the only certainty we have is that we're going to die, we have to accept it, too, because I feel that it's also healthy to let go. Which is obviously not easy, and you never end up forgetting a person, but in the sense that also clinging to it, not letting go, is like going against nature"*
> (Olivia Mendoza, personal interview).

The signifiers of "letting go" appear again to emphasise the detachment necessary that subjects need to undergo in order to reaffirm their investment in living. This detachment, however, does not imply a severance of the bond, of the relationship with the deceased. What is sought instead is the detachment from the previous "normality" of social relations, one in which the deceased played a central role and whose absence will be felt. In this sense, "letting go" conveys change after a death event, change in the discursive reality with a permanent void left behind by the original (now deceased) individual. The result of managing to "let go" can be understood as a completed mourning journey, one that allows nature – in the form of the cycles of life and death – to continue, instead of attempting to tame it with technological creations.

Natural Mortalism also facilitates mourning by supporting subjects in acknowledging their position within a discourse, to verify what are its limits and to disengage from it and move on to another discursive construction:

> *"I think it [the VDI] would generate dependencies, a new dependency, specifically. Because I think that the vast majority would position themselves or interact with their parents. [...] Then it would stop this ability of*

the human being to cut the umbilical cord, at least mentally. [...] The umbilical cord would become longer and longer, and it would slow the growth capacity of individuals. And it is important to take the initiative individually, I believe, both parents and we, to cut the umbilical cord. We see it in the world of nature, and therefore it is part of nature, and therefore I think it is fundamental. The law of life, yes. And the law of death" (Antoine Thibeault, personal interview).

The critique here is directed not only to technocentric perspectives, but also to Post-Mortalism, as this latter discourse encourages the permanence of a relationship across time. In the case of Natural Mortalism, the reference to "cutting the umbilical cord" could be interpreted as the severance of the bond with previous generations. However, this act does not operate as a dismissal of their influence over the current generation, but rather as an act of autonomy over how to live. Whereas the different technocentric versions of Post-Mortalism can increase reliance on the past, Natural Mortalism proposes relinquishing this dependency and pursuing a path of personal growth that could lead to developing a mature outlook and exert agential capacities on the world. Implicit in this viewpoint is the co-constitution of life and death, with death taking away previous generations so that the current and future generations can thrive. It is, in this sense, a discourse which argues that death is a necessary force for sustaining life and renewing it.

Finally, it is worth highlighting that although Natural Mortalism recognises the value of death as part of nature, it also supports some forms of mourning that allow for the creative integration of loss into life. This discourse would recognise the lasting influence of the deceased in the world of the living through their place in once having created life or by being members of a network of social relations whose presence was meaningful for others: "I think that finally a large part of one's personality is transferred indirectly through the descendants. In the end, in a biological way. I think that nature itself does this transfer process, it happens naturally" (Antoine Thibeault, personal interview). This quote exhibits two strategies of symbolic immortality compatible with Natural Mortalism: biological immortality as expressed through descendants, and natural immortality in the form of considering oneself as part of the cycles of renewal of life. Of course, these forms of symbolic immortality imply death, but death is not equated to a permanent loss. What emerges instead is an identification with the ancestors and the acknowledgement that they, symbolically, remain in the world through the present generations. The transfer process of biological and personality traits to the descendants could also be considered a

practice of generativity, albeit a more indirect form of it since the influence of the ancestors does not manifest in their recreation as VDIs, but in the life choices subsequent generations make by having as reference points the actions of preceding generations and in their possible physical and temperamental resemblance to them.

6.5.4 Myth / Metaphor: A wave and its ripples in the ocean

Whereas the Ambivalence and Restoration images were sustained by metaphors of the basic features of a person, and the Concealment image was founded on the notion of a person being a cog in a larger machine, the Autonomy image has as its foundation a metaphor that accentuates the theme of nature: the wave in the ocean, and the ripples it leaves behind. In this metaphor, the wave symbolises a person as a temporary manifestation of a deeper natural force – the ocean and life cycles, respectively.

The metaphor of the wave in the ocean conveys the message of a unified whole, the ocean, which possesses an incredible force and is constituted by different water currents. The ocean has been present for millions of years, and waves emerge momentarily and then disappear again into the larger whole. A person can be understood in a similar way: it has its distinct features and behaviour, similar to a single wave, and emerges only once in a specific point in time throughout the expansive whole of life and death cycles. Like the wave that reintegrates into the ocean as part of its natural movement and dynamics, a person moves into death as part of these cycles. But the reintegration of the wave into the body of water that is the ocean does not end its influence: its ripples and force generate movement in the ocean space where it returned, in turn furthering the appearance of other waves and, in some cases, leaving its mark where it collides with solid surfaces. When a person dies, her singular features no longer exist, but her influence remains, as expressed by José Saramago in his literary work *Blindness*:

> *"The good and the evil resulting from our words and deeds go on apportioning themselves, one assumes in a reasonably uniform and balanced way, throughout all the days to follow, including those endless days, when we shall not be here to find out, to congratulate ourselves or ask for pardon, indeed there are those who claim that this is the much talked of immortality"* (Saramago, 1999, p. 78).

The above quote finds a form of symbolic immortality in the actions of human beings during their brief time living in the cycles of life and death. Present and future are, in more and less direct ways, affected by the preceding events, whose impacts will be felt in

bigger and smaller forms indefinitely. This highlights the central message of the wave in the ocean metaphor: a living being is not a single entity who comes into the world and disappears upon death, but is instead part of a larger, impossible-to-fully-comprehend whole to which it returns to when it dies.

This manner of metaphorically understanding personhood and death also has a more intimate dimension, for the actions of ancestors in generations past have coalesced in the singularity of a person in the present: "Your relatives are there, they are focused on you. And what your relatives have done for thousands of years. You are the product and legacy of all that, right? So, I think that nature itself does it" (Antoine Thibeault, personal interview). Biological and natural symbolic immortality are, as suggested by this quote, methods through which present existence arises. Interpreted as the confluence of previous events and people, the existence of a person cannot be separated from its spatial and temporal dimensions. From this perspective, in his or her singularity, a person's being is always part of the everlasting unfolding of events, including but not limited to the deeds of the ancestors, appearing as an individual entity but in reality constituting part of the cycles of life and death.

This metaphor of personhood and mortality as a wave in the ocean becomes the structural foundation of the Autonomy image, as it promotes the acceptance of death as part of an overall cyclical movement where life is sustained by death, leading to the emergence of new life. This perspective drives the emergence of the Natural Mortalism discourse, where there is a critique on the centrality of advanced electronic technology and frames death as natural, facilitating mourning. In turn, this discourse exerts pressure in the upper layers to perform the social practices that avoid the VDI and favour established mortuary rituals and other more personal practices of mourning. Successful mourning would mostly be the result of internal work in the psyche, recognising how the deceased individual was a point of identification and emotional support. Eventually, in the Litany layer, this would take the form of criticism against excessive reliance of technology and the need to gain autonomy from it.

The social practices and their deeper foundations examined in the Autonomy image arguably foster a pedagogy of death in a way that cultivates human agency and orients subjects to understand death as co-constitutive of life. Mortuary rituals have greater importance here as they allow the acknowledgement of the loss within a network of social relations. Personal rituals that encourage working through the loss, wherein the original individual is remembered and the continuing bond in a non-technological way may be

reaffirmed, also facilitate for subjects coming to terms with the fact that any future will not include those who have died. As was described, forms of non-pathological melancholic identification with the deceased can also give them the strength to invest themselves in new life-sustaining activities and find new affective investments. Awareness of the fundamental role that death plays in life is encouraged, as the absence of the VDI in the personal lives of subjects indicates that subjects are in favour of "letting go" of the deceased so that the cycles of life and death can continue. As a result, death is again naturalised and seen embedded within the experience of living.

## 6.6   Conclusion: Inter-discursive struggle and hegemony in the ideal types

The four ideal types of images of the future that showcase the way people might relate to a technological and social construction such as the VDI – Ambivalence, Restoration, Concealment and Autonomy – differ from the images of the future commonly present within the field of Futures Studies in two ways. The first one is that the images focus on the microsocial level, that where interaction between social agents take place, instead of exploring the intricate relationship between systemic variables at the macrosocial level. This means that an imagined experience of living in the world where the VDI is a fixed feature and, more specifically, the subjects' imagined confrontation with mortality and loss by engaging (or not engaging) with the VDI were the focus of these images of the future, with other systemic variables addressed only where relevant for understanding how the VDI might configure social practices focused on death and mourning.

This is linked to the second difference, which is that the social practices of Human-VDI interaction are not considered exclusive in the envisioned social world of 2040. Although it is certainly possible that one of the ideal types of the images of the future described in this chapter would be the only configuration of social practices in terms of how Human-VDI interaction occurs in 2040, it is also possible that all four practices occur simultaneously in the social world. However, these images *are* exclusive in the sense that subjects' acknowledgement of death and their relationship to it, as well as the process of mourning they are involved in, cannot coexist for the same subjects. In other words, a subject who is using the VDI for successfully navigating his or her mourning journey could not equally undertake mourning practices characteristic of the Concealment or Autonomy images at the same time, as these dynamics of processing a loss are in conflict with each other.

This interpretation of what the images of the future actually constitute for social practices of Human-VDI interaction raise the relevance of discussing the following questions. First, which approaches to confronting mortality and undergoing mourning could become hegemonic in the envisioned future of 2040, and which of them could become marginal? Second, how do the different ideal types address the ethics of mourning and therefore relate to the hegemonic and marginal futures? Although any answer to these questions cannot be but tentative and subject to change, the layered analysis and the narratives of the interviewees offer some indications of what the hegemonic futures could be.

The four ideal types – Ambivalence, Restoration, Concealment and Autonomy – conflict over the appropriate approaches of confronting death and the loss of others. Some, like those driving the social practices of the Ambivalence and Concealment images, favour the routinisation of interaction activities that include the VDI as a mechanism for coping with the death of others, and potentially even extending oneself in virtual form after death. Others, like the discourse of the Restoration image, prefer establishing limits on the circumstances over which Human-VDI interaction would be helpful in facing issues related to mortality and loss. Finally, there are discourses which outright reject the use of thanatechnologies for death acceptance and mourning, as in the Autonomy image. The different approaches to confronting mortality and facing the loss of others have deeper discursive foundations that structure the meaning of the social practices and are in conflict with one another, as their metaphors of personhood and mortality are different. This is illustrated in Figure 7. To consider how some images might become hegemonic, it is helpful to identify the dominant themes in the images of the future and how they structure the interviewees' worldviews and perspectives of the future.
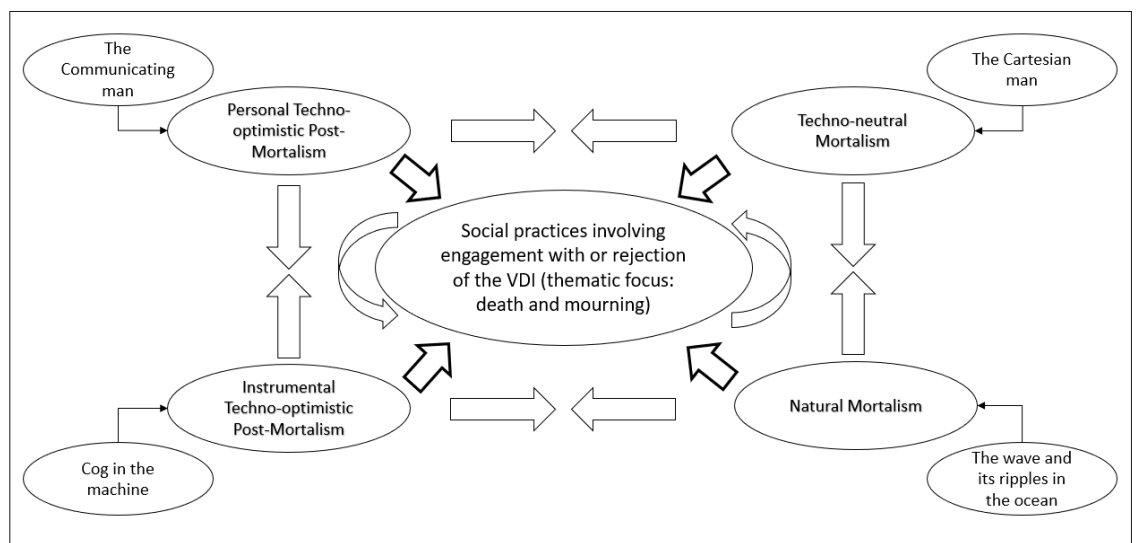
Figure 7: Conflicting discourses and metaphors constitutive of social practices involving engagement with or rejection of the VDI

The social world of 2040, at least as envisioned by most of the interviewees, is one where advanced electronic technologies continue evolving at an exponential pace, with greater integration into social dynamics given that most of the generations who came of age in or were born into digitalised environments would by then be in high-level positions that allowed them to make decisions with larger social repercussions. This, in turn, complicates matters in terms of the human reliance on advanced electronic technology, with the majority of people normalising patterns of behaviour that would be considered futuristic from the perspectives of the past and the current present of 2020. The viewpoints most interviewees offered on technology ranged from techno-optimism to technological neutralism, with very few raising concerns on how, instead of using or benefitting from new technological developments, single persons, social groups or even whole populations could become subordinated to electronic systems that are embedded in the social world.[26] In this sense, technological determinism was a palpable feature in many images of the future. This might imply that technocentric visions are positioned to take a hegemonic space, not only as images of the future in the current present but also as the social imaginaries that drive the design and emergence of future dynamics, while naturalist visions – or even those that do not reject technology outright but instead encourage restraint – are likely to become increasingly marginalised over the years.

Of course, technocentric visions by themselves do not necessarily imply hegemony for any specific ideal type. Considering social practices of Human-VDI interaction are, to greater or lesser extent, a feature of the social world of 2040, how prevalent they are is likely to depend on cultural attitudes on death and technology, as well as cultural belief systems over what is the best way to confront mortality and the loss of a loved one or of a member in a community. Political action, understood not only in an institutional sense but as the exercise of power, could also promote certain strategies of immortality, in this case the creation of the VDI as a form of Post-Mortalism, at the expense of alternative forms of dealing with death. Dominant discourses on the economy and sociotechnical

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[26]   Although the technocentric features of the Ambivalence, Restoration and Concealment images could be attributed to the dynamic of the interview, the discourses of technology of the interviewees and their personal way of relating to technology were asked. Although more of them were hesitant on the idea of the VDI itself, all of them except two favoured advanced electronic technologies for everyday life. If discourses drive action, it can be foreseen that techno-optimistic discourses are going increase their dominance.

imaginaries (Jasanoff and Kim, 2015) are also influential in this regard. For instance, one of the interviewees described a video of his workplace where the physical environment is replete with digital technologies, and they promoted this vision as the desirable path towards the future (Juan Ignacio Alcántara Montesinos, personal interview). In this way, it can be foreseen that practices of datafication and commodification of human beings, which are visible in the present in some forms of capitalist discourses, could increase the magnitude of their reach in social relations, in turn discursively articulating themselves with techno-optimism and thanatophobic discourses to generate the emergence of particular social practices where Human-VDI interaction is socially constructed as normal.

An additional issue to consider, and this is something where insights of Critical Futures Studies (CFS) prove helpful, is how images of the future as transmitted in institutional spheres can become hegemonic as they are internalised by social groups under their influence. Because CFS remains sensitive to issues of power asymmetries and aims to identify the interests underneath specific visions of the future, they can reveal how specific futures are assimilated by subjects. Although it is beyond the scope of this study to describe how this assimilation occurs, it is important to note that corporate interests and governments' desire for increased control over their populations might frame their technocentric views as the exclusive, even "inevitable" future. This way, subjects might naturalise the idea that a world where advanced electronics are the norm, an expected feature of their daily lives. By continuously affirming messages where human beings can be reduced to data, corporations, media and governments can attempt to fix some elements of the future in the discursive reality of subjects, thereby driving the emergence of these elements. In consequence, futures that could have been considered contingent upon systemic pressures and social action – in this case, those related to the integration of a VDI into social life – might end up being proclaimed as unavoidable and determined.

The ideal types explored in this chapter can be considered to enhance or constrain the ethics of mourning (Glynos, 2014), which relates to hegemonic configurations of social relations as well. The Concealment image limits any attempt at identifying the radical contingency of discourse and fantasy life, expecting continuity and carrying on activities as if a death event did not carry sufficient weight to be acknowledged in organisational life. The Ambivalence image possesses a duality: under some circumstances, when the VDI is meant as a substitute of the dead, the identificatory, emotional and material supports the living had with the original (now deceased) individual are not consciously recognised, and complicated mourning may ensue; conversely, if these supports and the

magnitude of the loss are addressed, then the Ambivalence image fosters the ethics of mourning. Both the Restoration and the Autonomy images cultivate the ethics of mourning as well, with the former using the VDI to deal with the loss of others and to guide the living to invest in new life projects, and the latter dismissing this form of thanatechnology in favour of more human-oriented approaches to confronting mortality and experiencing mourning. In this sense, it is the Autonomy image which situates human agency at its centre and advances it more than any other image, for it is subjects' creativity, rituals and internal cognitive processes that allow them to accept mortality and the deaths of others.

According to Butler (2006) and Glynos (2014), mourning has the potential to envision different alternatives of relating to one another, and for it to be successful, identifying and challenging structures which refuse to admit the deaths of others as important in a network of social relations is necessary. In this sense, the Concealment image could be said to pose risks for human well-being, as it overlooks the effects of death and orients subjects to remain invested in a fantasy, pathologically attached to people (even if it is in an instrumental manner) that would no longer be around. For this reason, the Concealment image is the most compatible with maintaining power asymmetries, as possibilities for change and orientation to new life projects are foreclosed. The Restoration and Autonomy image, in contrast, orient subjects to envision new possibilities for living in the world after the deaths of others, and to forge new personal and social commitments in the absence of the dead without necessarily forgetting their influence on the living. Therefore, the Restoration and Autonomy images could be considered to empower subjects and help them reach emancipatory pathways in their personal and social lives.

The aforementioned considerations on hegemony and mourning can reveal, on a general level, two different forms of inter-discursive struggle taking place in the four ideal types. First, there is the antagonism between Post-Mortalism and Mortalism: the former rejects death, its permanence and the disruption it creates, and looks for ways to minimise the impact of death and loss on the living; the latter accepts death and views it as part of a natural cycle, and encourages confronting the magnitude of the loss of others in order to become invested in new life projects. The second struggle, related to the first, is the antagonism between technocentric visions and naturalist visions. Technocentric visions look for ways in which a specific thanatechnology, the VDI, can lead to symbolic forms of transcending death or concealing the impact of the deaths of others. Naturalist visions, in contrast, consider strategies where technology aims to achieve some form of mastery over death to be misguided, and aim to cultivate human agency in dealing with mortality.

A summary of this inter-discursive struggle is visible in Figure 8. Since societies shaped by the ideas, values and structures of modernity seem inclined to adopt both Post-Mortalism and technocentric discourses, unless there is some growing critique that poses a challenge to these discourses, futures where both Post-Mortalism and technocentrism are dominant can be expected to be realised in some form of another.
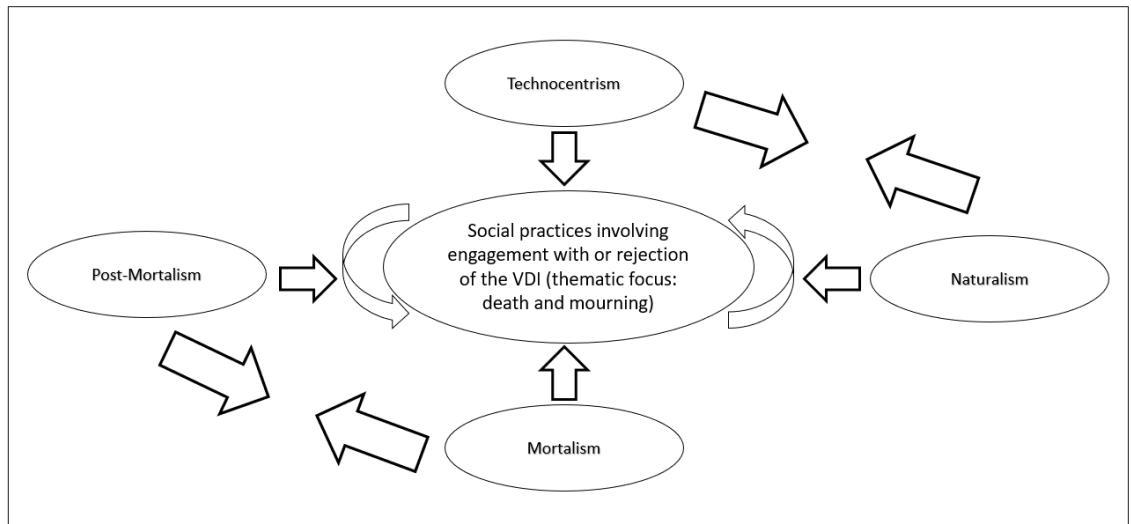
Figure 8: Inter-discursive struggle affecting the meaning of the social practices

Under these considerations, a preliminary answer is that the technocentric images of the future – Ambivalence, Restoration and Concealment – can become hegemonic and eventually drive the emergence of the social practices they portray at the expense of the more established and naturalist practices specific to the Autonomy image. This is both a result of current dominant discourses and practices which view advanced electronic technology as an inherently positive force, as well as of the social context of the interviewees. The Concealment image reinforces the status quo and can lead to restrictive continuity. Though the Ambivalence (under some circumstances) and Restoration images can still contribute to death acceptance and successful mourning, therefore facilitating change and orientation towards life, they do not enhance and cultivate human agency in the same way the Autonomy image does.

Recognising that the interviewees share similarities in their profiles, most of them being professionals in their fields and belonging to a middle-class background, it might be more accurate to think of these ideal types as those specific to this kind of profile. Additionally, the fixed nature of the social phenomena (social practices of Human-VDI interaction) in the images of the future might have influenced the features of the envisioned social world of 2040, with several alternative images not considered as important from the perspective of the interviewees when thinking about their own position regarding

Human-VDI interaction. Despite these reservations, the central place of technology for human life and reliance on a specific thanatechnology for late-modern social dynamics hints at the possibility of increased subordination of human aspects of social experience – including manners of relating to mortality and loss – to technological constructions, with autonomy and human agency facing more obstacles as time goes on.

7 CONCLUSION

7.1 Overview and assessment of research

This thesis introduced the concept of the Virtual Deceased Individual (VDI), a thanatechnology situated in the digital immortality discourse that refers to those digital immortals that are constituted only by the relational component of the deceased and do not aim to recreate them in their complexity and autonomy, but only in their role they portrayed in the lives of the living. Additionally, it set out to conceptualise social practices of Human-VDI interaction as they could be performed within images of the future in the time horizon of 2040. Then, four ideal types of these images of the future – Ambivalence, Restoration, Concealment and Autonomy – were constructed based on data gathered from long interviews with people who imagined themselves in interaction with the VDI in 2040 and the circumstances under which such interaction would take place. Finally, these images were critically examined via the Causal Layered Analysis (CLA) to reveal deeper assumptions that drive the emergence and generate the meaning of social practices of Human-VDI interaction.

After establishing the ontological features of the images of the future for this thesis and asserting the relevance of the themes of death and mourning for the field of Futures Studies, the interdisciplinary literature review of Death Studies, Interaction Studies and social practice theory outlined the theoretical underpinnings of social practices of Human-VDI interaction and led to the development of a sensitising scheme which represented a first step in their conceptualisation. Among the main arguments made by this interdisciplinary literature review is that, under some circumstances, Human-VDI interaction can indeed be considered social interaction, albeit in a more limited form than true social interaction between human beings. Similarly, the importance of death and mourning for social and cultural life was highlighted, thus enabling the comprehension of how practices of Human-VDI interaction are founded on themes of mortality even though subjects may not explicitly acknowledge this when performing them.

The overview of the VDI, its place in the discourse of digital immortality and its technical specificities as forms of digital immortals (themselves being a subset of Virtual Humans) followed. By doing so, some of the technical features of the VDI were identified. Emergent forms of Human-VDI interaction were also described and illustrated in

the form of two cases of people who have already created a VDI as made possible by current digital technologies.

A description of the methodology showed that insights from different fields, most notably Death Studies and Futures Studies, were considered for the data gathering and data analysis phases in this research. The methodology also introduced the analytical categories that offered ways to examine the narrative patterns in the empirical material to make meaningful contrasts among the ideal types of the images of the future that could be constructed based on the interview material.

Finally, the narratives of the four ideal types (Ambivalence, Restoration, Concealment and Autonomy) were detailed, and each image was then critically explored using the CLA method. An overview of the main characteristics of each image as filtered through CLA is seen in Table 3.

Table 3: Summary of the CLA layers of the ideal types of images of the future focused on Human-VDI interaction

CLA	IDEAL TYPES	AMBIVALENCE	RESTORATION	CONCEALMENT	AUTONOMY
LITANY	The VDI allows the deceased to come back into the world of the living	Human-VDI interaction as therapy or emotional counselling	Active dead leaders	Criticism against Human-VDI interaction and promotion of alternatives
SYSTEM / SOCIAL CAUSES	The social practices integrating Human-VDI interaction in everyday life in personal settings	Social practices of supervised Human-VDI interaction for therapeutic purposes or solving specific personal problems	Organisational continuity despite the death of its members	Avoidance of the VDI and the performance of alternative death acceptance and mourning practices
DISCOURSE / WORLDVIEW	Personal Techno-optimistic Post-Mortalism - Technology to overcome mortality	Techno-neutral Mortalism - Living and letting die by mourning through technology	Lasting contributions via Instrumental Techno-optimistic Post-Mortalism	Natural Mortalism and death acceptance
MYTH / METAPHOR	The communicating man's relational information	The Cartesian man's body and soul	A cog in the machine	A wave and its ripples in the ocean

The four ideal types and their critical examination through CLA have revealed that the way human beings relate to mortality and experience mourning by performing social

practices involving the VDI (or, in the case of the Autonomy image, as a critical response to the VDI) is affected both by personal perspectives on death and technology and by the broader sociocultural context where deeper meaning-creating forces are at play. By implication, a detailed exploration of these deeper forces and their influence in the most visible phenomena was needed as well.

The Ambivalence image portrays the sometimes contradictory nature of coming to terms with mortal existence and the loss of others, when the integration of a VDI in everyday life can serve as a simultaneous reminder of love and loss if death and its effects are acknowledged, or as an anchor to a previous fantasy life that subjects are unwilling to detach themselves from. The Restoration image narrows down the scope of the use of the VDI to very specific circumstances with the purpose of having a reminder of a loved one as encouragement to solve personal problems or to become aware of the emotional, material and identificatory supports the original individual embodied. In the process, users are able to invest themselves in new life-sustaining activities. The Concealment image, by highlighting the "productive" and "functional" aspect of the deceased within organisational life, hides the human interlocutors (and the institutional community as a whole) from the effects of death and appropriates the VDI as a strategy for the immortality of its members. This immortality, however, would only be for instrumental purposes, with the singularity of the individual removed. The Autonomy image would reject the VDI as a suitable form of symbolic immortality, fostering instead more human-oriented approaches that require a personal and a collective effort of working through the loss. As with the Restoration image, subjects can find new affective attachments while recognising that the deceased, despite their deaths, still have symbolic influence in the world of the living.

These images therefore suggest that the acceptance of death, living in the face of death and undergoing successful mourning require that the VDI, in its integration into social practices, facilitates the acknowledgement of the losses derived from the fact of human mortal existence. If social practices of Human-VDI interaction do not encourage such acknowledgement, subjects might experience death denial (perhaps engendering behaviours of thanatophobia) and complicated mourning, therefore reproducing them in social practices and structures.

The research project of this thesis has offered contributions to different fields, particularly for Futures Studies, by conducting research in the themes of death and mourning

that are underexplored in the field, and for Death Studies, by highlighting the sociotechnical dimension of both themes and by encouraging considerations about how human beings confront mortality and the loss of others. Nonetheless, it is important to emphasise the limitations of this research. By constructing ideal types, it becomes clear that the thesis cannot portray the multitudes of configurations of social practices that focus on Human-VDI interaction in the time horizon of 2040. Instead, it is limited to finding common patterns in the narratives of interviewees about those futures and detailing them in the abstract. As addressed previously, although the profiles are diverse, perspectives from some regions of the world, age groups and people that do not have an academic or professional background are missing from this research. Though this does not reduce the significance of the results, it is worth noting that the ideal types at the centre of this thesis might predominantly depict the visions of people (including the researcher) in urban settings, with a certain socioeconomic status, and with their worldviews considerably shaped by the structures of modernity.

7.2 Discussion of relevance

7.2.1 Restrictive and emancipatory futures of social practices of Human-VDI interaction

The four ideal types presented in this thesis of images of the future of social practices focused on Human-VDI interaction – Ambivalence, Restoration, Concealment and Autonomy – should be discussed in terms of what they reveal from a Critical Futures Studies (CFS) perspective and what they contribute to the pedagogy of death (Affifi and Christie, 2019).

The critical element of CFS resides both in the layered constitution of reality and in aspects of critique to prevailing systems and forms of social organisation. CFS aims to orient subjects towards emancipatory futures, introducing possibilities that allow people to escape constraints imposed by current structures. The ideal types in this thesis, although depicting social practices that might take place in the time horizon of 2040, showed in their diversity and contrasts futures that either embraced or rejected natural processes of existence, in this case the mortality of living beings. The Concealment image, in this regard, could be considered a concerning extrapolation of trends in technology where people, in their data-producing practices, become commodified and their instrumental value is foregrounded, with their complexity as human beings reduced to the data that can be

harnessed for productive purposes. By emphasising continuity and the instrumental contributions of individuals to an organisation, the Concealment image displays social practices that disregard the magnitude of death in people's lives and *conceal* the sense of loss within the network of social relations. Moreover, its commitment to continuity forecloses possibilities for change that are necessary in personal, social and organisational life. In this way, the Concealment image can be characterised as more restrictive for human well-being, devoid of the emotional complexity inherent in human behaviour and promoting a view of humanity wherein their value resides in their usefulness as part of a whole, therefore normalising systems that commodify human life.

The Ambivalence image is perhaps the most complex and, as its name suggests, acknowledges the different sides to facing death and loss in personal life. Recreating a dead person through digital technologies is, on the one hand, a technocentric vision that might encourage greater subordination of human agency to technological systems and artifacts, as well as a reduced recognition of the loss resulting from someone's death. On the other hand, for some, it might be one way of confronting mortality directly, integrating a constant reminder of death into their everyday lives. The performance and meaning of the social practices of Human-VDI interaction in the Ambivalence image would likely be subject to the personal traits of the human interlocutors and the context of the death event of the original individual, as well as to the sociocultural pressures influencing the adoption of this form of thanatechnology. Overall, this image offers a dualist perspective of the integration of the VDI into everyday life: it works as a simultaneous reminder of the love felt when the original person was alive and the pain felt by their permanent loss. To what extent that loss is consciously addressed by subjects or how much it only resides in the background of their minds will vary. Therefore, this image can also be restrictive to human well-being if it encourages ignoring the loss and seeing the VDI as a technological substitute of the original (now deceased) individual, or it can be emancipatory to the extent it urges the integration of loss into life and orients the human interlocutors towards engaging in life-sustaining projects and activities.

The Restoration and Autonomy images can both be characterised as predominantly emancipatory, as both direct the living towards confronting mortality and undergo mourning. The Restoration image is also characterised by a reliance on advanced digital technologies, but is not dependent on them, as it uses the VDI only under supervision and in very specific times to enable subjects to successfully mourn their deceased loved ones, or to be able to deal with specific problems where the advice of the original individual would

be beneficial. The Autonomy image, in contrast, rejects the use of this instance of thanatechnology, and demands greater agency for human beings in their processes of mourning. This takes the form of religious or community mortuary rituals which make the loss explicit for the members of the network of social relations, or of personal moments of recollection of fond memories with the deceased while contemplating living without them. Although both ideal types are emancipatory for how they enable death acceptance and orient subjects towards life, in a future where digital technologies are highly integrated into everyday life, the Autonomy image might best represent practices that foster human agency when confronting death and loss.

How do these ideal types relate to the pedagogy of loss? The Concealment ideal type is representative of a future where the themes of mortality and mourning are denied, where digital immortality and overcoming death are seen as desirable endeavours, and human beings become more alienated from death. The Ambivalence image could follow this pattern for personal life when the VDI is meant to act as a substitute of a deceased loved one, with the permanence of death obscured by the fact that the relational component of the original individual is still present. However, when considering it an external and tangible symbol of loss that becomes a part of daily life, it can be argued that the Ambivalence image possesses emancipatory potential, for radical contingency is reinforced and the emotional, material and identificatory supports of the deceased are identified. In consequence, death becomes a familiar component of everyday life, and the living could continue engaging in life projects having acknowledged the permanence of the death of their loved ones and its implications for their future. The Restoration and Autonomy images foster maturity to accept death and urge subjects to become aware of their own thoughts on mortality and their emotions on having to live without their loved ones. Both images recognise death as co-constitutive of the living experience and aim at granting greater agency to the living when facing moments where mortality is a predominant theme.

This research, then, has offered diverse and contrasting depictions of how death and mourning can be personally and socially addressed by the living. It reveals some configurations of social practices where the alienation from these themes is reinforced, and others where becoming reacquainted to mortality and cultivating the maturity to accept death and successfully mourn the deaths of others is central. Hence, this thesis itself contributes to the pedagogy of death by encouraging deep and systematic thinking on the matter,

while the ideal types provide reference points of what death-alienating and death-embracing social practices could be like.

7.2.2   Implications of the VDI as a fixed element in future societies

It is important to consider, based on the critical exploration of the four images of the future in this thesis, what consequences the widespread acceptance of the VDI as an element of the social world would have on a larger scale. Recalling Seale's (1998) idea of the Death-constituted society, where social and cultural life is a response to combat the threat of meaninglessness that death could entail, having VDIs as partially autonomous interactants in the social world would move societies towards a further symbiosis with death. In personal life, the reintroduction of communication with ancestors could orient individuals and families to remember important lessons that their ancestors, throughout their lives, learned. This way, there would be a form of continuous guidance from the past towards a future, a practice of generativity wherein the VDIs of previous generations offer interactive insights that can only be learned by life-experiences. In the process, a critical engagement with the past could take place as well: romanticised notions of it could be confronted by engaging with its remnants in the form of the information stored within the VDIs and assessed in context.

By having the deceased gain an increased presence in the world as VDIs, it could also be speculated that a new model of death would emerge. Though the "death of the other" model (Ariès, 1981) would still be a force that drives the response of Post-Mortalism, the VDI as a common element in social life could perhaps lead to the emergence of an "ambivalent death" model, where death still occurs but where the dead are still influencing the unfolding of events in the social world. Such a new death model, as with all other models by Ariès, would entail significant changes for the social practices that human beings have performed in relation to mortality and mourning, as well as new discursive and metaphoric interpretations of death and personhood. As supported by the diverse images of the future in this thesis, this new era of relating to death might manifest in different forms and drive the emergence of new social configurations according to the geographical and cultural context, some restrictive and some emancipatory in nature.

Equally important about the effects of the VDI if integrated into social life is the recognition of the complexity of human relationships and the internal lives of human beings. As was evidenced by the Ambivalence and Restoration images, people integrate those meaningful others into their sense of self, which they continue to attach to even

after those others die. If highly integrated in the personal life of a person, the VDI could serve as a constant, if somewhat painful, reminder that the original individuals who have died had very specific dreams, goals and a complex history that drove them to be what they were as autonomous beings, whereas the VDI only captures and reproduces their functionality as social agents. If careful consideration about the role of the VDI in the social world is encouraged from societies at large, then perhaps a more sophisticated understanding of the intricacies of human beings and their inner lives could emerge, and increased attention could be directed to nurturing attentive, empathetic and compassionate human behaviour.

7.3   Proposals for further research

While exploring the futures of social practices of Human-VDI interaction has arguably contributed to the research into the sociology of immortality (Jacobsen, 2017a), the results, scope and limitations of this thesis also point to a number of possibilities to explore in future research. As mentioned previously, the diversity of the ideal types might be restricted to the profiles of the interviewees and to the personal theoretical positions of the researcher. Similar research that results from interviews with other profiles (more senior subjects, interviewees from Africa and other countries not represented here, people who have experienced significant loss earlier in life) could offer meaningful insights about future practices that investigate how specific thanatechnologies might shape the way people relate to death and mourning.

Similarly, further research in Futures Studies that recognises the centrality of death and mourning is needed. This is needed for both theoretical discussions and empirical contributions. As argued in this thesis, death is a main meaning-creating force, and how different people think about death, or even their own deaths, in the future is worth exploring. Critical explorations on the possible future developments of ecological mortuary rituals, alienation from death in some forms of future sociotechnical configurations, and the way people think about personal losses in the future might yield significant insights that encourage discussion on how societies shaped by the structures of modernity handle death and facilitate or hinder mourning for its members.

Finally, it is important to consider doing further research on what effects images of the future where the central themes are death and mourning have on human action in the present. Though this thesis only implicitly depicted what the interviewees' perspectives were on thinking about death and mourning as manifested by social practices of Human-

VDI interaction, meaningful contributions could be made by critically exploring to what extent thinking about death and mourning in the future grants or diminishes human agency and overall outlook on the future.

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APPENDICES

Appendix 1. Interview questions

Introduction – Researcher background, what the interview is about, explanation of standard issues regarding interviews (they are free to not answer any question they are uncomfortable answering, they can decide to stop the interview at any moment), how long it might take, remind them that it is being recorded, and remind them of sensitive issues about data handling, etc.

Who is the interviewee – Could you describe yourself briefly? How old are you (either specific age or age-range)? What is your nationality, your educational and professional background? How would you describe your personality?

- This is to establish the profile of the interviewee. Interest is in sex, nationality, age, cultural background, education, profession, and some self-perception.

Significant life moments - Could you mention one or two significant moments in your life that you believe have contributed to shaping your personality, values, and way of thinking? How did these moments contribute to that?

- This helps detect if they have faced significant loss previously or if the kind of attachment they feel towards their loved ones. How anxious they feel about loss in general, or risk. This could provide an explanation for how they imagine the future (in personal terms but also in societal terms). By talking about themselves and reflecting about themselves before going into more specific questions, they might also get into the right mindset.

Perspectives on death – What is death for you, in your own words? How do you feel about the notion of death? How often do you think about your own mortality, or that of your loved ones? What are your beliefs in anything coming after death (afterlife, reincarnation, cycle repetition, etc.)? In what ways do you believe your life experiences and background (cultural, educational, professional) have shaped the way you think about death?

- This helps explicitly link any life experiences to how they relate to death and mortality. It also helps identify any influences from nationality and cultural background. It is not the same to examine death and mortality in Mexico as it is in Finland, for instance. But personal experiences of significant loss might also play a role, and two people from different nationalities who have experienced the death

of a loved one or another significant loss might feel similar about these issues than those who have not.

Perspectives on technology – What is technology for you, in your own words? Can you mention some examples of what you consider technology? How attached do you feel to technology? Is there any technological device that you feel attachment to? Why do you feel attached to these devices? How dependent are you on personal computers and mobile phones? Would you feel comfortable spending significant amount of time without your computer or mobile phone?

- This helps get a better sense of how they use technology *consciously*. Intentional, desired use of technology with a meaningful purpose is important to understand how they might relate to the VDI. They might use the microwave, for instance, but they do not attach to it any meaning beyond warming food. But they might use mobile phones as a way to feel connected to significant others. If this is the case, something similar could be expected when imagining their interactions with the VDI.

Exploring the content of the landscape images – Five landscape images are presented and then the interviewee is asked to imagine himself or herself in them, and to describe what they see while exploring them.

Describing the concept of the Virtual Deceased Individual to the interviewees – Three images which describe the concept and what it entails are shown in sequential order, along with a description provided by the researcher and told to the interviewee.

Image 1: Imagine this is you and the other person is a significant other for you. You choose whom. Now imagine a point in time in which you are still alive, but that person who is a significant other for you has passed away. He or she is no longer with us. Picture yourself at this moment, what your life would look like. Take some moments to imagine yourself, your life situation, the context of the world around you.

Image 2: Now imagine there is a technological device that you can routinely interact with, and has some human-like qualities. For instance, it interacts in dialogue, either in text or by audio or video, with you. Imagine it like a digital assistant like those we have today, but more technologically advanced. It may be used for a variety of different purposes, but the concept is the same – you interact with it in a human-like manner.

Image 3: Now imagine this device can be used to replicate / simulate the personality and mannerisms, in any manner you can imagine (text, audio, video, virtual reality, augmented reality, robot, etc.), to a fairly faithful degree. Let us call this the Virtual Deceased

Individual. The Virtual Deceased Individual would have all the necessary information that you associate with the original individual, and when prompted, it would answer faithfully and in a way that mimics the way the original individual would answer. Take some moments to imagine what that would look like for you.

Questions regarding the technical capabilities of the VDI - What form would the Virtual Deceased Individual take? Would it appear as an instant messaging platform? Would it be something more detailed, for instance, a virtual reality setting? You are free to imagine it in any way you like. Take some time to imagine that, and how you would relate to it.

- All of these are to get them to think about the concept of the VDI. They need to be able to imagine living in a moment in time without the presence of their loved one. They also need to imagine the technology and the form it would take.

Description of the interaction and the day activities – Now, at this moment, two minutes to imagine a day in your life in 2040 (time horizon / this future hypothetical moment in time). In this day, at some point in time, you have to interact with the VDI of the person you have chosen, in any way or form you can imagine. You are free to imagine the moment of the day, the specific circumstances, the medium of communication (text, virtual reality, voice message, etc.) that you have imagined the VDI with. Just think about your activities in that day, whatever you are doing, and at some point, interacting with the VDI. It can be as long or as short an interaction as you like. There is no limit on this. Now, have you had time to think about your day? Do you have an idea of what you would be doing in that day, and how you would interact with the VDI? If so, please describe what you imagined.

- This is where the content of the images of the future comes into play. It will tell describe something about their mental projections of the future in their lives, as well as how they imagine the technology related to the VDI would be.

Motivations about interaction and opinions on the VDI - Thank you. Now, if you could put a title to the narrative of the day you just described, what would that title be? What is your opinion on the idea of the VDI? Why did you imagine the VDI the way you did? How was the VDI created, in your narrative? Did you create it yourself? Was it a service an internet application? Under what circumstances would it be useful? In your narrative of the future, why did you choose to use the VDI? How much do you feel like it would help, in that future narrative, to come to terms with the death of a loved one? To what extent do you feel like the VDI allows for the deceased to be

present in some form, even after their passing? What problems, if any, might emerge as a result of the use of the VDI? Would this technology replace your loved one? What potential, if any, does the VDI have for transforming the way we relate to the dead?

- These are questions related to the emotional state and the way humans' approach and relate to technology. It also opens questions about how humans relate to death and mortality. It makes the interviewees think explicitly about a concept that may or may not have profound implications for microsocial and cultural practices. The answers related to these issues are the building blocks of the images of the future related to the VDI.

Conclusion questions – How has thinking about living in a future where a loved one has passed away been for you? What has thinking about the VDI made you feel? What potential, or dangers, do you see in the use of the VDI?
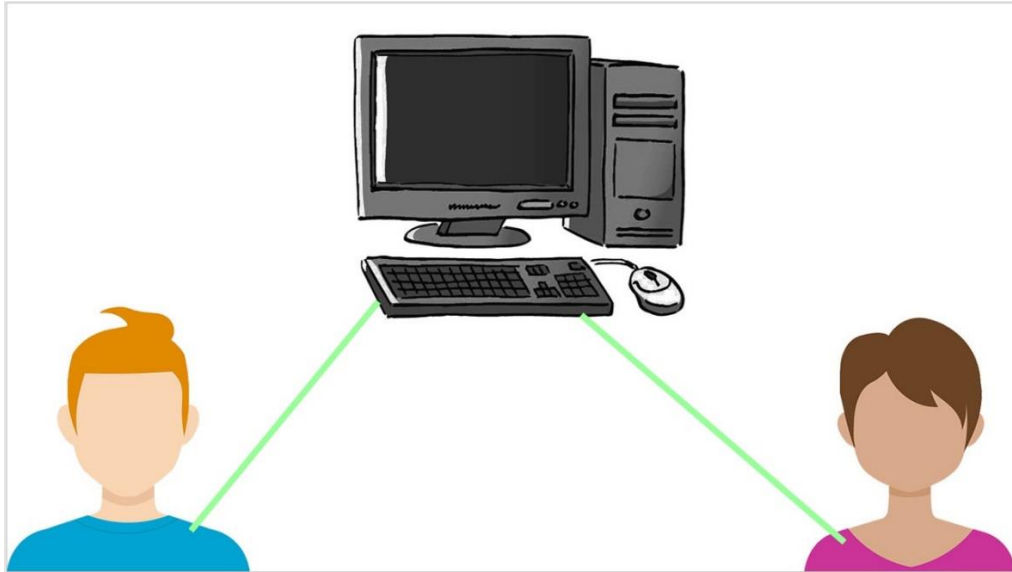
Thank you very much for your time and participation. (Standard closing procedure, reminding them they can request their data to be removed at any time, etc.)

Appendix 2. Images describing the VDI

Image 1: The interviewee and the death of a person in their network
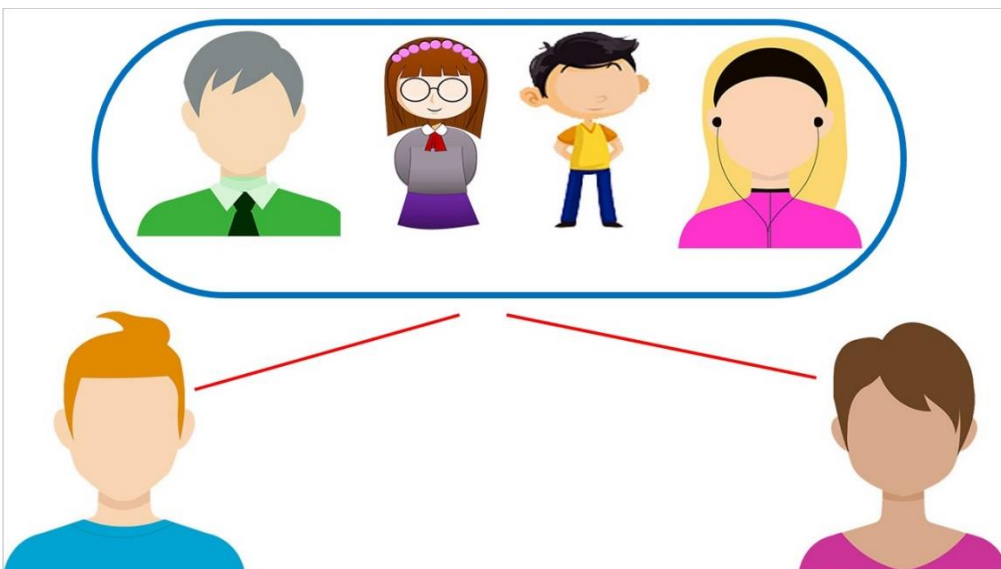
Image 2: The interviewee and a technological device with which he or she can "interact"

Image 3: The interviewee imagining the VDI