Technology, Media Literacy, and the Human Subject

A Posthuman Approach

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1. Introduction

Problematizing our Relations with Media Technologies

We are immersed in a world mediated by information and communication technologies (ICTs), both hardware (smartphones, smartwatches, home assistants) and software (algorithms, software programs, and infrastructures such as Facebook, Instagram, Twitter, Snapchat). We are transformed by these media, whether we have invited them into our lives or not. We subsequently perceive and engage with the world through these transformations. However, media literacy for the most part does not provide clear assistance in helping us become aware of these effects.

Thus far, media literacy has focused mainly on developing the skills to access, analyze, evaluate, and create media *messages*, and has not focused sufficiently on the impact of the actual technological medium, how it enables and constrains both messages and media users. Additionally, a more fully developed media literacy would situate media investigations in such a way as to allow for a deeply practical analysis without losing a holistic, theoretical perspective. In order to accomplish this, a concise transdisciplinary approach comprised of a general framework and specific instrument is proposed. This approach is based on an interdisciplinary study of postphenomenology, media ecology, philosophical posthumanism, and complexity theory.

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The framework of the approach described in this book uses six groupings of relations: technological, sociocultural, time, space, mind, and body, with a main emphasis on technological relations. How these relations, as well as their interrelational effects, participate in the constitution of the human subject is explored through an analysis of a museum selfie, which contributes to the development of a pragmatic instrument that can be used for media literacy.

The pragmatic instrument helps bring to the foreground the contributing influences that are continually constituting human subjects in everyday media environments, thus allowing people to make more informed decisions on which media they invite into their lives. The human subject is understood here as a *posthuman* subject, as opposed to the standalone, exceptional being with roots in the Enlightenment. The posthumanist approach understands the human subject as constantly *becoming* through the myriad of constituting relations in their life. While it is not possible to completely understand the complexity of all interrelations that constitute us, the more we can become aware of how we relate with the world through these transformed aspects of our selves, the greater chance we will have for reclaiming some of our agency, which arguably is the main goal of media literacy.

In this chapter I provide an overview of the current trend of an ever-increasingly media-saturated world and how media literacy currently responds. I discuss the importance of the technological medium, the technological relation, and describe the importance of better understanding the human subject. I share the overall structure of this book and briefly touch upon the various fields that will be addressed.

Situating the Research

My own personal research interest began by focusing specifically on the effect of ICTs on museum visitor experience. Investigating the mediating relations between humans and technologies led me to an approach in philosophy of technology called postphenomenology. While this helped me to understand the mediating role of technologies, it also raised unanswered questions as to exactly how the subject was being transformed in its relation with technology. This then led me to broaden my focus and attempt to more completely understand the

subject as embodied and situated in a complex network of a multiplicity of relations, one group of these relations being technological. This led me to develop an approach that reflects this interrelationality and that can be an effectively used for media literacy.

It is fairly common for people in the developed Western world to live in a media-saturated environment. However, far from being new, this trend began in earnest with Gutenberg's invention of the printing press,[1] which eventually led to an exponential increase in literacy and a democratization of information, education, and knowledge (Martin & Cochrane, 1994; Ong, 2012; Postman, 2006; Strate, 2014). The printing press paved the way for communication through mass replication and broad dissemination. Today, as we[2] enter into the second decade of the twenty-first century, there is a ubiquity of screened-communication technologies that allow us, for the most part, to communicate whenever and wherever the mood strikes. The ubiquity of ICTs such as smartphones, tablets, and laptops—sometimes referred to as *technomedia* (Han, 2008)—is the everyday environment within which we live, and this has become 'normal' and unremarkable for a large part of the world—simply part of how things are. Unless noted otherwise, the ICTs I refer to are digitally networked devices that are prevalent in much of the world today.

In the United States, 'Digital media use has increased considerably, with the average 12th grader in 2016 spending more than twice as much time online as in 2006' (Twenge et al., 2019: 329). In the European Union (EU), while television is still the most commonly used medium—84% watch it every day or almost every day and 94% watch it at least once per week—the number of people who use the internet is catching up, with 65% of EU citizens using it daily or almost daily and 77% using it at least once per week (European Commission, 2018: 4). And throughout the world, a 2017 Pew Research global survey showed that while smartphone ownership has remained steady for developed nations—at around 72%—it is increasing in developing nations, growing from approximately 25% in 2013/2014 to 42% in 2017 (Poushter et al., 2018: 4).

1 It was not the production of books (since books were already being produced), but rather the re-production that printing enabled, making it possible for a large number of people to own a copy of a certain book title.

2 Unless otherwise noted, general pronouns such as 'we' refer to the majority of people living in the contemporary developed Western world.

This environment of ubiquitous ICTs brings many benefits. With our GPS-enabled smartphones we rarely become lost. Finding a place to eat in an unfamiliar town, a place with good reviews and the cuisine of our choice, is now quite easy. Keeping in touch with a large number of friends is as simple as checking our social media feed. By allowing notifications to be sent to us, updates from our 'friends' are delivered directly to our phones, where we can simply glance down to attend to them. These ICTs enable a robust interconnection with our sociocultural world.

In this saturated media environment, the media tend to disappear into the background of our awareness.[3] They become part of the environment in which we live. This immersion, as Figure 1.1 reflects, is especially visible with the number of smartphones in use and how often people are engaged with them. As Galit Wellner (2016) describes, smartphones have a wall/window trait. They create an inclusive 'window' to a virtual world and community while also creating an alienating 'wall' to whatever and whomever is in the person's immediate surroundings. This reflects the idea that all technologies are non-neutral and have both enabling and constraining aspects to them (Ihde, 1990).

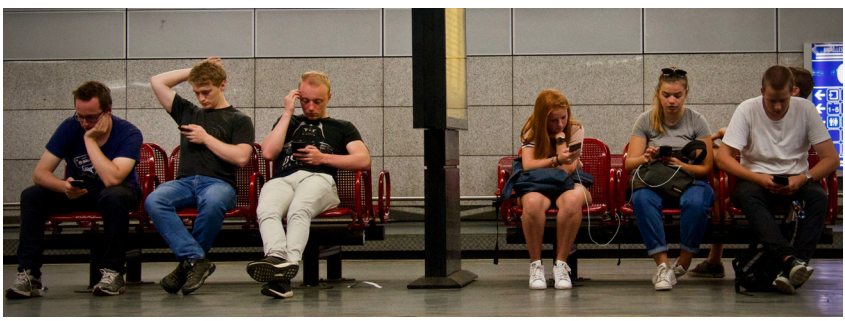

Fig. 1.1 *Waiting for the train.* Brussels-Luxembourg station, Brussels. Photo by author (2019), CC BY-NC 4.0.

While many people embrace the changes and innovations in media technologies, others are questioning, pointing out the drawbacks and costs of such changes. The Center for Humane Technology warns, 'The companies that created social media and mobile tech have benefited our

3 See Marshall McLuhan's use of figure/ground in Logan, 2011; McLuhan et al., 1977.

lives enormously. But even with the best intentions, they are under intense pressure to compete for attention, creating invisible harms for society' (Center for Humane Technology, n.d.). There is increasing concern about the amount of influence that the dominant GAFAM[4] (Google, Amazon, Facebook, Apple, and Microsoft) technology companies have (cf. Harris 2019, 2020; Hill, 2019; Twenge, 2017). Additionally, we should not only be concerned with these companies and the content of media messages, but we also should pay attention to the actual technology itself. While there have been certain fields of media studies that focus on the technology or medium (media ecology, mediatization,[5] medium theory), the field of media literacy has mostly avoided addressing the effects of the technological medium in a rigorous manner.

For all that, our daily lives are interconnected with more than media technologies. There are sociocultural relations such as normativity, power, and language. There are both positive and less than positive issues with our minds and bodies that influence how we relate with media technologies. In addition, we are always located within a specific time and place, both of which relate to media technologies (Innis, 2008). These groups of relations interrelate and inter-influence each other, contributing to the creation of the ever-changing human subject. Salman Rushdie (2006) posits, 'To understand just one life, you must swallow the world' (145). I take this to mean that everything is interconnected, and in order to really know something, we must realize how it is interconnected with everything.

To put this another way, in order to understand any one mediating technology, we must understand all the mediating interrelations that affect us as human subjects. While achieving this level of comprehension is implausible, it alludes to the complexity and challenge of fully understanding the effects of media technologies on a human subject. The more we can understand about these complex interrelations, the greater chance we will have for reclaiming some of our agency, which I believe is one of the primary goals of media literacy. Therefore, in an age of ubiquitous smartphones and other communication technologies,

4 Microsoft is not always included, making it GAFA.

5 Adolf (2011) states 'mediatization research is about the inherent, the structural role *of the media system as a whole* for the way we organize and (re)produce our social relations' (154).

implementing the approach developed in this book can enable media literacy to identify and situate the complex interrelations, such as the sociocultural (normativity, power, language) and the technological, which contribute to the continual constitution of human subjects.

Media Literacy

The field of media literacy attempts to help educate people—especially the young—in order to become more skilled and aware users of media by primarily looking at 'four components: access, analysis, evaluation, and content creation' (Livingstone, 2004: 5). Sonia Livingstone describes how these components work together as a dynamic learning process. She outlines how learning to create content helps one better understand and analyze professionally produced content, and the 'skills in analysis and evaluation open the doors to new uses of the internet, expanding access, and so forth' (5).

Media literacy is vital to our everyday engagement with ICTs *because* of their everydayness (Kim, 2015; Onge, 2018). The field of media literacy attempts to shed light on how we use, and are potentially used by, media. With media technology everywhere in our lives, it becomes ordinary; commonplace. These technologies are part of the fabric of our existence, the ordinary environment within which we exist. For example, according to a recent Nielsen report, the average adult (over eighteen years of age) in the U.S. spends around 10 1/2 hours each day involved with some kind of media[6] (Nielsen, 2019: 3). We live in this mediatized environment and now, more than ever, it is important to have a comprehensive media literacy program that helps us better understand the effects of our media-rich environment. With this in mind, I explore the current approaches in media literacy.

Four Approaches to Media Literacy

Media literacy focuses on education in order to help people, especially youth, develop the skills to create (produce) with media technologies, as well as to critically analyze and evaluate media and media messages.

6 Nielsen (2019) defines media as 'TV, TV-connected devices, radio, computers, smartphones, and tablets' (3).

Rather than creating grand sociological theories, the focus of media literacy is mostly pragmatic, concerned with helping the *user* improve their 'ability to access, analyze, evaluate and create messages across a variety of contexts' (Livingstone, 2004: 3). Douglas Kellner and Jeff Share (2005; 2007) identify four specific approaches to media literacy: media arts education, the media literacy movement, a protectionist approach, and critical media literacy. While these approaches —which I will briefly describe next—can be perceived as individual approaches, in practice they can be combined with each other, which offsets some of the drawbacks inherent in each approach when used independently.

The approach of media arts education focuses specifically on helping teach students 'to value the aesthetic qualities of media and the arts while using their creativity for self-expression through creating art and media' (Kellner & Share, 2007: 7). Here, media is a skill to be learned. The approach of the media literacy movement has ties to print literacy and focuses on the competencies needed in order to be perceived as being 'literate'. Kellner and Share (2005) state that media literacy 'attempts to teach students to read, analyze, and decode media texts in a fashion parallel to the advancement of print literacy' (372). Both of these approaches tend to perceive media in a neutral manner.

However, the protectionist approach typically perceives media technologies in a more determining manner. Some philosophers and media theorists approach media and technology as something that people, especially children, should be protected from. There are valid concerns for a protectionist approach to focus on. Jean Twenge et al. (2018) find, 'Adolescents who spent more time on screen activities were significantly more likely to have high depressive symptoms or have at least one suicide-related outcome, and those who spent more time on nonscreen activities were less likely' (9). Educating people on possible dangers and negative effects of media falls within this protectionist approach.

The approach of critical media literacy has increased the scope of media literacy by adding the critical study of how messages contain underlying stereotypes, marginalization, and exploitation. Livingstone (2004) writes, 'to focus solely on questions of skill or ability neglects the textuality and technology that mediates communication. [...] there is not only skill involved but also an interpretive relationship with a

complex, symbolically-encoded, technologically-mediated text' (8). This addition improves the ability of media literacy to explore and bring to light important issues that are embedded in media messages (Kellner & Share, 2005; Lemke, 2006). On the whole, critical media literacy continues to focus on the symbolic content of the message. While this is important, I believe that if the borders of media literacy can be expanded to include the influence of the actual technological medium as well as the broader context within which the media are used, then a space is created for media literacy to be even more inclusive and effective.

These four approaches will be discussed in more detail in Chapter 2. The approaches are representative of what is currently happening in media literacy. However, this is not meant to imply a comprehensive reflection of the entire field, which is constantly developing. I will endeavor to include a few of the voices that are encouraging the development of the field. I believe that media literacy can benefit by expanding, and the goal reflected by my research is to create an inclusive and situating approach to do just that.

Benefits of Expanding Media Literacy

Supporting the expansion of media literacy, David Morley (as cited in Krajina et al., 2014) says, 'Media questions are important, then, but they only seem to me to be really significant if they are set in a far wider frame, rather than focusing just on media technologies themselves' (684). One way to increase this frame is through domestication theory,[7] which parallels aspects of media literacy. Roger Silverstone (1994, 2006) developed domestication theory. Together with Morley, Silverstone began researching television 'in a broader framework' (Morley & Silverstone, 1990: 31) in order to understand 'the meanings of both texts and technologies, […] as emergent properties of contextualized audience practices' (32). Domestication theory focused beyond simply the text and analyzed 'a whole range of overlapping, determinate and indeterminate social and cultural practices which together define—for particular

7 From domestication theory arose the concept of *double articulation*, which 'provides an *inclusive* move from the *semiology* to the *sociology* of media use' (Silverstone et al., 1991: 219). Here, the media object (the television set being the one primarily studied) is examined as a material object embedded within a broader (domestic) context.

viewers at particular times in particular places—their relationship to the medium' (Silverstone, 1989: 108).

While domestication theory has worked fairly well theoretically, it has been criticized for the challenge of empirically applying the theory (Hartmann, 2006). Even with the inclusion of the media-as-object, domestication theory still lacks a robust way of investigating the effects of the medium. While domestication concerns itself primarily with social theory, it focuses less on educating the individual as media literacy does. What is still missing is a concentrated approach to investigating the effects of a specific medium on individuals and societies.

While domestication theory includes attention to media objects such as television sets, it often does so in an anthropological or ethnographic approach (cf. Horst, 2012; Lesage, 2013) with an emphasis on the context within which the object resides. Morley (2009) states, 'we need a new paradigm for the discipline, which attends more closely to its material as well as its symbolic dimensions' (114).

The study of media and communications can also have an interdisciplinary focus. Shaun Moores (2005) explains, 'media have to be understood in their broad social and cultural contexts' (3). He suggests that it is a common misconception that 'media studies are simply about "studying media" in isolation' (3). Contextualizing ideas from Moores and domestication theory counters a more narrowly defined approach to media literacy, and lends support to enhancing media literacy through a situating approach.

Beyond media literacy are other media-related fields researching the impact of ICTs. Some of these are areas that focus on the technological features of media, but their approach can often be more functional. Examples of this are digital literacy (Koltay, 2011; Nichols & Stornaiuolo, 2019); data literacy (Koltay, 2015); and the digital detox movement (Bauwens et al., 2019; Rauch, 2018; Ugur & Koc, 2015).

Additionally, there are disciplines that can provide insights outside of media and communications, which focus on the relation between humans and technologies; these include postphenomenology, actor-network theory (ANT), and the general field of philosophy of technology. Also, scholars like Rosi Braidotti, Katherine Hayles, and Donna Haraway offer viewpoints from within philosophical posthumanism that focus more on the human side of human-technology relations. They focus on

concepts such as de-centering the human and making sure marginalized groups are included in any definition of 'human'.

The Non-neutrality of Technological Relations

In order to investigate the influence of the technological medium I implement two approaches: a microperceptual and a macroperceptual. The microperceptual approach focuses on the embodied and embedded perspective of a human subject. The macroperceptual approach focuses on the broader sociocultural context that the particular human subject exists within. Don Ihde (1990) says, 'There is no microperception (sensory-bodily) without its location within a field of macroperception and no macroperception without its microperceptual foci' (29). Both the microperceptual and macroperceptual views are entangled and necessary in order to comprehend overall the effects of media and to fully become media literate.

While the four approaches in media literacy (cf. above) are effective in what they do, there are several concepts from other fields of study that can help create a more robust approach. In order to better understand technological objects, and our relations with them, the fields of postphenomenology and media ecology excel at analyzing technologies, covering the micro level of the embedded and embodied human subject, as well as the sociocultural macro level respectively. Both also stress relationality as a means to understand how we are constituted and transformed by the technological relations in our lives.

Technological Mediation as Relation: A Micro Approach

Relationality is one of the foundational concepts of the posthuman approach that I develop as well as being fundamental to postphenomenology's concept of technological mediation. Technological mediation describes how our technological relations are not neutral, but without succumbing to technological determinism. Jan Bergen and Peter-Paul Verbeek (2020) say, 'technological mediation aims to take technological artifacts seriously, recognizing the constitutive role they play in how we experience the world, act in it, and

how we are constituted as (moral) subjects' (1). Postphenomenology specifically analyzes the technological mediation using the formula: I-technology-world. As humans, we are never standalone beings but always in relation; these relations are non-neutral,[8] contributing to the *co-constitution* of our selves, the specific technology, and the world (cf. Ihde, 1990; Rosenberger & Verbeek, 2015; Smith, 2015; Van Den Eede, 2016; Verbeek, 2005). The term 'constitution' is used to describe the specific coming together or unique arrangement that takes place in the process of these relations.

Postphenomenology describes four types of technological relations: embodied (where we perceive the world *through* the technology, such as with eyeglasses); hermeneutic (where we *read* the technology to better understand the world, such as with a thermometer); alterity (where we interact with the technology as a *quasi-other*, such as with an ATM machine); and background (which affect us but mostly go unnoticed, such as a heating and cooling system for one's house). Postphenomenology excels at investigating the microperceptions experienced by people when they interact with the technologies in their lives. Postphenomenology also acknowledges macroperceptions, what Ihde (1990) calls cultural hermeneutics. However, the sociocultural component is not as emphasized in practice as the microperception. This is where media ecology can contribute to our understanding of technology as an environment.

Media Environments: A Macro Approach

Media ecology is a macro approach that describes media environments. This means that the approach often investigates the broader effects that media has on cultures and societies. Marshall McLuhan (1994) is the person most often associated with media ecology. McLuhan consistently attempted to get society's attention focused on the hidden influence of the medium that helped shape the media's content. His famous aphorism, 'The medium is the message' (7) was one such attempt. He often explained it through the figure/ground analogy where one's usual focus is on the figure (in this case the media's content) and the ground

8 The term non-neutral is used to indicate that a relation is not completely determining but also is not completely neutral.

(in this case the medium) goes unnoticed. While McLuhan popularized the study of media, the field of media literacy rarely works closely with his ideas.[9] Instead, media literacy was 'developed through the work of Len Masterman in England and Barry Duncan in Canada' (as cited in Jolls & Wilson, 2014: 68). Duncan (2010) credited the work of McLuhan for inspiring him in his study of media but still held that the primary focus of media literacy was to understand and study representation.

In contrast, media ecologists focus on understanding media as environments and how those environments affect society. Harold Innis (2008) writes about the differences that various mediums afford. For instance, Innis discusses the biases of media relating to time and space. He describes heavy media such as clay or stone tablets as being more permanent (able to move through time) but too cumbersome to move very well through space. Papyrus or radio is just the opposite; easy to move across space, but less permanent to move very far through time. This bias affects the type of content that can be 'carried' by the medium. For example, Innis criticizes radio as a medium that 'accentuated the importance of the ephemeral and of the superficial' (82). So, while it is important to analyze the content of media as critical media literacy does, it is also fruitful to analyze the medium itself.

Statements such as the above from Innis have contributed to the criticism that media ecology is technologically deterministic, with their focus on how media technologies influence individual and social behavior. However, before McLuhan popularized looking at the medium, media studies primarily focused on the content of media messages, heavily influenced by semiotics. As most people in media studies were already focused on the content, McLuhan worked to shed light on what was difficult to perceive, which he did by using dramatic and sweeping statements such as the already cited 'the medium is the message', or 'in all media the user is the content' (as cited in McLuhan & Zingrone, 1997: 266).

Most media ecologists have simply been trying to include the influence of the medium in the discussion and do not claim that the medium is all determining, only that it is not neutral. Lance Strate (2017: 34) states this quite clearly:

9 Ivan Kalmar (2005) suggests, 'if McLuhan's name no longer rings as it once did, it is because history has paid his ideas the compliment of making them commonplace' (227).

> The term *technological determinism*, [...] has been linked to the field of media ecology. For the most part, it is a label applied by critics, rather than a term used, let alone embraced, within the field. As there is no doctrine of technological determinism, or arguments that explicitly state such a position within our field, its use amounts to a straw man[10] argument used to dismiss media ecological scholarship, rather than subject it to serious consideration.

Which Human Subject?

While technological relations bring some agency to the technological object side of the human-technology relation, Tamar Sharon (2014) points out that disciplines such as postphenomenology focus more on 'breathing life into objects [...] than delving into the implications of having breathed life out of subjects' (9). Sharon proposes that we take a closer look at what is going on with the subject. As we focus on the effects of media on the subject, it is important to identify which human subject is being discussed. I am not referring to the ideal Enlightenment subject: autonomous and exceptional in the world, reflecting a subject-object duality. Instead, the subject is always-in-relation and is continually being constituted through a complex interrelated network of relations, what I refer to as a posthuman subject.

Rather than a *humanist* way of understanding the subject, I employ a *post-humanist* approach, using philosophical posthumanism, which is quite different from *trans*humanism. While transhumanism does focus on the entanglement of technology and the human, it does so from an 'ultra-humanist' (Onishi, 2011: 103) approach. The two fields use the term *posthuman* in two very different ways. Transhumanists use the word to describe an evolutionary shift for the human that they foresee occurring—primarily through technological means—into vastly more intelligent and efficient beings. Max More (2013) states that by 'thoughtfully, carefully, and yet boldly applying technology to ourselves, we can become something no longer accurately described as human—we can become posthuman. Becoming posthuman means exceeding the limitations that define the less desirable aspects of the "human condition"' (4).

10 Philosophical *strawmen* arguments are arguments where the person criticizing a concept first defines the concept without providing all of the context or nuances, allowing them to easily identify flaws.

Philosophical posthumanists, however, use the term posthuman as a way to distance themselves from the traditional idea of the human, based primarily on Enlightenment and modern ideas of the autonomous, standalone, and exceptional human individual. In this case, posthuman refers to a post-humanist, post-anthropocentric, and post-dualist approach to understanding the human (Ferrando, 2019). Posthumanism stresses that the subject is constituted through its relations, what Karen Barad (2007) calls *intra-action*, and will be explored more deeply in Chapter 4. The approach I develop is centered on the human subject as understood by philosophical posthumanism.

Situating Media Literacy with Intrasubjective Mediation

How can we keep everything straight? On the one hand, it is important to focus on specific technologies and how they affect the individual. On the other hand, it is important to focus on how the broader sociocultural relations—such as power, normativity, or language—affect us. There are technological and sociocultural environments all entangled and all contributing to our own constitution. Maren Hartmann (2006) points out the question that has not yet been solved: 'how to adequately research the complexity of the combination of media content and media context to paint a picture of the overall whole' (89).

One important word used throughout this book is 'situating'. The term 'situate' means, 'To put (something) in a (specified) context; to describe the circumstances surrounding (something)' (OED online, 4th definition). The approach developed is precisely dedicated to facilitating this. It creates a simple structure that can help guide the investigation into the complex interrelated processes that affect our relations with media.

The following research questions helped guide my understanding of the transforming impact of ICT technologies in our lives and also to inform the creation of the new approach developed. My research questions are as follows:

1. How can we specifically analyze and understand the interrelating micro and macro effects of media technologies on human subjects? [Chapters 3 and 4]

2. How do media relations interrelate with other relations—such as socio-cultural, time and space, and mind and body—in their constitution of the human subject? [Chapter 5]
3. How can an instrument be developed in order to tether our investigations, keeping us grounded to an overarching inclusive framework while we delve deeply into the specific relations that contribute to our constitution and enhance media literacy? [Chapters 5 and 6]

In order to help guide an investigation into the various relations, the approach developed leverages the concept of *intrasubjective mediation*, which is the idea that we are—and continue to be—mediated by the constituting aspects of all of our relations. The approach investigates both the current and continuing impact from relations, which in the case of media technology will help us to become more media literate by understanding the broader effects of media technologies. The framework serves to create a situating cartography,[11] which captures the main interrelating groups of relations that contribute to the constitution of the human subject. This supports Shaun Moores' (2016) call for a non-media-centric media literacy. By focusing on one aspect of media literacy, we can easily lose sight of others. By creating a situating instrument, we can tether our approach to the broader, encompassing framework while allowing our focus to narrow momentarily into each specific constituting relation.

Research Significance and Design

While the ubiquitous smartphone is likely the most common ICT that comes to mind for those in the Western globalized world, there are plenty of other technological devices (such as ebook readers and tablets), often networked, which make up the tapestry of our world today. Looking around at people, especially when they are in a forced pause—waiting for a doctor's visit, for a train, etc. (see Fig. 1.1)—often they are looking down at some technology rather than looking around and engaging with their immediate environment. They are immersed in technology

11 I use the term cartography as a facilitator of exploration rather than as a prescriptive map.

that virtually transports them elsewhere. Consider the following insight from Yoni Van Den Eede et al. (2017b: xxv):

> With the onset of mobile communication technology, media are no longer 'over there'; they are moving toward us, into us. Looking at the history of media, one perceives almost the evolution of an organism becoming more and more complex, diverse, and ubiquitous.

This technology can be a book, an ebook, smartphone, game console, or any of the other technologies that permeate our contemporary world. It is easy to become so distracted by the constant presence of technology in our lives that we do not recognize how many of our actions are being mediated in some way by these technologies. Instead, we tend to focus on posting and sharing, liking and commenting; simply living our mediated lives. The challenge for media literacy in this ubiquity and transparency is the fact that these mediating technologies are not registering in our awareness.

Use of Language

Though it is rather obvious to state that language[12] plays a key role in communication throughout this book, I want to take a moment to acknowledge its importance. Especially as I use words like 'human' in new ways (for instance the difference between what is referred to the human by humanists, transhumanists, or posthumanists). The specific words I use greatly affect the success, or lack thereof, of the ability to transmit ideas to the reader. Each word is a choice that has both benefits and limitations. Words are limited in their ability to faithfully represent the intended meaning behind them. In addition, words cut and separate; they are often thought of as individual carriers of meaning. Words also have historical use and cultural meanings attached. Different groups of people embody different ways of viewing the world and its relations, which affects a reader's understanding of particular words. An example of the challenge of using words is trying to describe an interconnected and interrelated *individual* when the word 'individual' has been used to

12 Semiotics, the study of words and language—sign and signifier—is mostly outside the scope of this book. However, it is quite important, so there is a place for it within the framework/instrument I develop.

imply autonomy and separation. Kenneth Gergen (2009: xxvii) describes this issue quite well:

> The very idea of individual persons is a byproduct of relational process. But how can I describe this process without using a language that inherently divides the world into bounded entities? To be more specific, by relying on common conventions of writing, I will invariably rely on nouns and pronouns, both of which designate bounded or identifiable units. The very phrase, 'I rely on you....' already defines me as separate from you. [...] Try as I may to create a sense of process that precedes the construction of entities, the conventions of language resist. They virtually insist that separate entities exist prior to relationship.

In this book I constantly struggle with words that divide and separate while I attempt to use them in ways that gather and combine. For instance, I often use the term 'subject' and refer to technological 'objects', but rather than meaning them in a dualist Cartesian split, I mean them to be constituted in relation to each other and not as standalone. Additionally, instead of using 'myself' or 'ourselves' I separate the terms from each other in order to highlight the self-subject that I am focusing on. My goal is to highlight, but not separate in any Cartesian sense.

I have also chosen to use the present tense when citing someone. I want to stress a current engagement with the concepts and words from people, even if those people are no longer living. My intention is to keep my philosophical approach as contemporary as possible, even when engaging with older philosophical ideas.

The words 'media' and 'medium' can also benefit from further explanation. While media is plural for medium, in today's contemporary Western world it is often used to refer to mass media, as in 'the media'. However, it is also used to refer to communication devices, as in technological media. For this book I will specifically use the term medium (or mediums for plural) to refer to the media technology that performs media content—examples being television, newspapers, and smartphones. I will use the term 'media' as a more general term and one primarily directed at content (unless used as 'media literacy').

I recognize that the term *posthuman* is one that can challenge some readers and may not be readily understood. However, I view this as beneficial since the comfort and ease which many find using the word *human* is exactly what the posthuman approach is trying to undermine.

By using *posthuman* I hope to bring the reader's attention to figuring out exactly what is meant. This questioning of human or posthuman is one of the main goals of the approach described in this book.

And finally, is the *approach* described best called an approach, a method, a cartography, a cartographic method, a framework, or an instrument? Each word carries the sediment of historical use and each reader will interpret these words through their own understanding. My goal is to make it as accessible as possible without either putting on academic airs or making it too specific. Deleuze's *cartography* is appropriate, and calling it a *posthuman cartography* would be fine for people in the field of posthumanism. However, there are different ways of using the term 'cartography'. One way is a prescriptive and controlled manner. This is the typical 'map', with lines of demarcation and separation, cutting a representation of reality into categories of differentiation. This is *not* the way I am using the term. Therefore, I ultimately decided to call it a 'posthuman approach' to stress its interrelational focus as well as to connect it with the various 'approaches' used in media literacy.

Designing Interdisciplinary Research and a Transdisciplinary Solution

My research is an interdisciplinary exploration of media technologies and how our relation with media contributes to the constitution of our subjectivity. Marilyn Stember (1991) defines *interdisciplinary* as bringing 'interdependent parts of knowledge into harmonious relationships through strategies such as relating part and whole or the particular and the general' (4). While the research I conducted has been interdisciplinary, the solution of the posthuman approach can be considered *transdisciplinary*. Wendy Austin et al. (2008) describes how transdisciplinary solutions can often emerge spontaneously from interdisciplinary research 'when discipline-transcending concepts, terminology, and methods evolve to create a higher level framework' (557). This reflects the process I experienced in doing this research.

The need for the original interdisciplinarity arose from my own research on museum selfies (Lewis, 2017); from this work, I realized the limitation of using only postphenomenology to investigate how my

museum experience was being affected by the mediating technology that I was using. I felt that postphenomenology was not completely able to capture the complexity of constituting relations that I was experiencing, and there were more relations affecting my experience than the technological. This limitation led to more deeply exploring the concept of the human subject in its involvement with technologies than what postphenomenology provided. I discovered that by investigating several fields of inquiry, there were useful insights from each field for the overall development of my culminating approach. The fields I investigated, all being interdisciplinary themselves, were: postphenomenology, philosophical posthumanism, complexity, media literacy, and media ecology. However, as Van Den Eede (2016: 103) notes,

> Notwithstanding much feverish talk about inter- and multi-disciplinarity, real and substantial dealings between disciplines remain hard to come by. Paradoxically, that even counts for disciplines that are in themselves eclectic and composed of elements hailing from many different domains.

My initial research question of how technology affects the human subject steered me down several different paths, finally depositing me, in a circular fashion, back to my starting point. In fact, it was my investigation as to what was happening to me while taking a museum selfie that drove me to realize that I needed a new approach that did not seem to exist. An approach that would help me understand all of the influencing relations that were acting upon one another during my experience taking museum selfies.

In order to manage the expectation of the reader, it is important to note that my research does not reflect either a typical manuscript within continental philosophy or a typical book in media and communications studies. For example, many books in continental philosophy focus on a deep analysis of the writings of a specific philosopher, and in media and communications studies, at least where I was conducting my research in Brussels, it is most common to do an empirical study. Instead, my goal is to engage contemporarily with a variety of philosophers and philosophical approaches. Using the words of other philosophers and researchers honors the fact that they wrote the words and that the words spoke to me, but I take responsibility for using them for my own context and in my own way. Through this process I create an approach that is

pragmatic and helpful in learning to understand the daily effects that media technologies have on us as human subjects.

The Layout of the Chapters

This book is divided into two parts. In Part I—Chapters 2 through 4—I develop the background concepts drawing upon media literacy, postphenomenology, media ecology, and philosophical posthumanism. However, the book does not need to be read by starting at the beginning. Some readers may want to skip the initial foundational chapters and simply get right to Part II—Chapters 5 and 6—where I develop the posthuman approach, both the overarching general frame, as well as a pragmatic instrument that shows how to implement the concepts into media literacy. Instructors who would like to use the approach without specifically framing it within media literacy can focus on Chapters 3 through 6. One option that I have used with university students is an hour lecture for each of the Chapters 3 through 6. This builds the foundation for then having the students use their specific technological relation in order to experientially engage with the instrument described in Chapter 6.

Specifically, Chapter 2 explores the various aspects of media literacy, from the five core concepts (cf. Fig. 2.1), to the four aspects outlined by Kellner and Share (2005, 2007). Additionally, I look to domestication theory, as first identified by Silverstone (2006; see also Haddon, 2007; Silverstone & Haddon, 1996), which leads to the idea of double and triple articulation of media technologies (Courtois et al., 2013; Livingstone, 2007). The concept of triple articulation emphasizes the content of the media, the medium itself, and the context that the media is used in. This facilitates the move for media literacy to go beyond the traditional four approaches and connects to the next chapter.

In Chapter 3, postphenomenology and media ecology emphasize analyzing the technological relations on micro and macro levels. I first investigate postphenomenology, which focuses on human-technology relations. This creates the foundational building block of my approach: the embodied relation. I explore various concepts that are articulated in postphenomenology, such as the non-neutrality of

technology, multistability, sedimentation, and technological mediation as constitutive.

Secondly, I investigate media ecology, where the focus is specifically on the medium. I explore the idea of media as environments within which cultures can grow. Neil Postman (1970) states that media ecology studies information environments in order to 'understand how technologies and techniques of communication control the form, quantity, speed, distribution, and direction of information; and how, in turn, such information configurations or biases affect people's perceptions, values, and attitudes' (186). However, if media literacy is often too focused on the content, then media ecology can be accused of being too often focused on the medium, to the detriment of other influencing factors. There should be a balance and a manner to include all of the influencing relations; it is this gap that I intend to eventually fill through the approach developed.

In Chapter 4, the investigation focuses on the *subject* that is being constituted through the technological relations described in chapter three. I use philosophical posthumanism, as opposed to a humanist or transhumanist approach, to situate the post-humanist subject within a non-anthropocentric and non-dualist frame. Posthumanism also approaches the human subject as complex and always changing. I investigate the concept of complexity that is used in posthumanism—and occasionally used in media ecology—and I demonstrate how this term is fundamentally different from a mechanistic or causal approach to understanding the world.

With the background and fundamental concepts having been firmly established in the first four Chapters, the new framework is presented in Chapter 5. This framework allows for a clearer understanding of all of the relating and interrelating effects of media on the human subject, situating not only the technological and cultural, but the relations of time and space, as well as mind and body. I bring all the main concepts together in order to offer a comprehensive framework for situating media literacy.

In Chapter 6, I demonstrate how the framework can be employed by applying it to analyze a museum selfie. This leads to the development of a generic instrument for self-inquiry (or one could say an autoethnographic inquiry) into moments of media use, which

can be used for enhancing media literacy. As previously mentioned, it was in trying to understand the constituting effect of museum selfies that I realized I needed a more inclusive approach in the beginning of my research. Within Chapter 6, the complex interrelationality of all of the contributing factors that occur while taking a museum selfie is demonstrated. The museum selfie is a contemporary phenomenon that captures many issues investigated in this research. I conclude by creating an exercise that can be used for teaching media literacy. This exercise can be downloaded by going to the 'Additional Resources' tab at https://doi.org/10.11647/OBP.0253#resources. This should be considered a starting point for further exploration into how this posthuman approach might be implemented for the purpose of media literacy education.

Concluding Thoughts

At the convergence of the fourth industrial revolution (Schwab, 2017) and the sixth mass extinction (Cafaro, 2015), we find our selves at a crossroads. Being media literate is but one fundamental aspect of life in a time of complex planetary existence. Being able to situate whatever we study is critical in order to maintain perspective and not fall prey to any one specific discipline or way of thinking. While I have attempted to be broad in scope for understanding media, media literacy, and communications, there are important ways of using media literacy that I only examine in a cursory manner, since a more comprehensive study is beyond the focus of a single book. Language is one such area. Signs and their ability (and inability) to transfer information, specifically looking into encoding and decoding, is a large area of research already established within media and communications; however, it is beyond the scope of this book. Ethics and normativity, both immensely important, are also only lightly touched upon because, in my opinion, the first important step before being able to ethically or morally judge is to have awareness of the situation. This book describes an approach that can help develop the awareness necessary that can then allow us to critically judge.

John Culkin (1967) concisely sums up the focus of this book with the words, 'We shape our tools and thereafter they shape us' (70). I investigate the transformative effects of the tools we use daily in our

lives, specifically ICTs. The paradigmatic example of ICTs that I will often use throughout is the smartphone. These technologies permeate our existence, especially in the Western world. 'It takes less and less deliberate action on our part to engage with media or ICTs. No longer do we need to place ourselves behind a computer to go online; we carry "the online" constantly in our pockets or on our wrists' (Van Den Eede et al., 2017b: xvii). For many of the people in the Western world, everyday life is completely entangled with media technologies, so much so that these technologies are no longer in the forefront of our attention; they have faded into the background.

It is vital that media literacy steps in and plays a role in helping us become aware of the everyday media technologies in our lives and the influences they have upon our selves and society (cf. Kim, 2015; McLuhan, 1994; Silverstone 1994; Strate, 2017). As Catherine Adams and Terrie Lynn Thompson (2016) say, it is about understanding the digital and 'making its effects and affects visible' (2). In order to have a more comprehensive understanding of media literacy, we need a more complete understanding of how human subjects are constituted through all of their relations. We need to develop a right view, an orientation that allows us to better situate, and therefore more fully understand, our technological relations in order for us to make better decisions, to judge what and how to engage with the ubiquitous technologies in our everyday lives. The posthuman approach I have developed accomplishes this by situating the complex interrelating and constituting relations of human subjects and media technologies.