Introduction: Why Digital Media Metaphors Matter

By Johan Farkas and Marcus Maloney

Digital technologies have become increasingly embedded in human experience and sense-making across the globe. To capture both the promises and pitfalls of these technologies, people often invoke a series of metaphors. In this introduction, we outline how metaphors shape not only our understanding of digital phenomena, but also the ways in which we act in relation to them. As such, digital media metaphors play a key role across everyday life, journalism, scholarship, and policymaking. This chapter outlines the theoretical backdrop for the book, its aims, and its structure. Doing so, it captures why digital media metaphors deserve careful and critical attention.

Human meaning- and sense-making are profoundly metaphorical. Simply put, it seems engrained in us as a species to comprehend one thing in terms of another. Time 'moves forward,' hierarchies 'go up,' guilt 'drags down,' and new eras are 'born.' Metaphors shape not only how we understand the world, but also how we act within it. Of course, metaphors vary across socio-linguistic contexts – both geographical and historical – leading to different understandings and worldviews at different times. This also means that the study of metaphors is inescapably linked to the study of socio-cultural practices, material relations, and technological change.

If metaphors are all around us, why are digital media metaphors worthy of special attention? Digital technologies increasingly (re-)structure human existence across the globe, impacting not only the billions of people who use them, but also those on the 'other side' of what are metaphorically called 'digital divides.' This involves everything from friendship to courtship, work to entertainment, politics to finance, diplomacy to war, food to fitness, and art to propaganda. These technologies are developed and operated by some of the most powerful corporate and state actors the human species has ever seen, using world-spanning surveillance systems to 'transform' personal information into predictive 'models' of future behaviour, whether related to shopping, crime, job performance, voting behaviour, or drone strikes. All of this (re-)produces different forms of power relations, inequalities, oppression, and injustice that call for both scrutiny and resistance. As we will outline in this introduction chapter, this involves critically attending to the ways in which metaphors for digital media – by obscuring and highlighting different aspects of the world – shape, limit or even distort our understanding of their implications.

As Professor Vincent Mosco (2017) notes, some people might write off digital media metaphors as nothing more than the "meaningless and harmless buzzword-filled chatter that results from too much attention to screens" (p. 116). Doing so, however, would be a mistake, neglecting the profound role that these metaphors play in shaping thoughts and actions in the digitally mediated capitalist world we now inhabit. As Mosco (2017) adds: "language can be confining, if not imprisoning because it locks us into one world of thought, a world that is increasingly built on the foundation of quantification and commodification" (p. 117).

Digital technologies are particularly prone to metaphorical thinking since human experience of them rests on a fundamental disconnect between their material and social realities. When using a smartphone, laptop, or tablet – or whatever tech giants will put out next – people do not generally experience them as intricate assemblages of batteries, displays units, and semiconductors connected via satellites and fibreoptic cables. Instead, they experience a world of 'platforms,' 'environments,' 'sites,' 'smart services,' 'clouds,' 'frontiers,' 'likes,' 'emails,' 'streaming,' 'communities,' 'town squares,' 'filter bubbles,' 'data mining,' 'rabbit holes,' 'information wars,' 'toxic gamers,' 'trolls,' and 'digital natives.' Spanning across infrastructures, content, and users, metaphors represent key entry-points for human understanding of the digital 'realm.' This is why digital media metaphors matter.

Metaphors for digital technologies have long been the subject of scholarly interest, going back to pioneering works such as Annette Markham's 1998 *Life Online: Researching Real Experience in Virtual Space*, which analysed metaphors of the internet as a (1) space, (2) tool, and (3) way of being. In 2001, David Trend's *Reading Digital Culture* similarly noted how integral metaphors are in shaping human interactions with digital media:

> Perhaps more than any other communication medium, the coherence of the Internet relies on a set of imaginary beliefs held together by neologisms, metaphors, and other tropes of language. How else could a jumble of coaxial cables, magnetic disks, computers, and phones become transformed in the popular mind into an adventureland catering to electronic homesteaders, netsurfers, and day-traders? […] Because of its fictional character, what is said, written, and broadcast about cyberspace assumes tremendous importance in helping to foster critical understandings of its workings or to mystify them.

(Trend, 2001, p. 295)

In this introduction, we will dive into the foundational role that metaphors play for human meaning- and sense-making, and how this structures our relationship with 'the digital.' To do so, we first engage in an analogous and orienting discussion of metaphors for the human mind. This is followed by an outline of Lakoff and Johnson's (1980) seminal book *Metaphors We Live By*. Finally, we return to our focus on digital media metaphors, drawing further connections to existing research and outlining the structure of the chapters to come.

Your Mind as a (Digital) Machine

As an entry point for this anthology's inquiry into digital media metaphors, it is worth remembering that our understanding of that most fundamental ingredient of all inquiry – the mind itself – remains firmly anchored in metaphorical expressions. Indeed, in an era given to celebrating humankind's unmatched empirical grasp of the universe and everything in it, it can be startling to consider the extent to which all knowledge, including that of fundamental cognitive processes, rests on a playful rhetorical exchange wherein we make sense of things via marriages-of-convenience with other things that are "different from, but analogous to, that which [they are] literally applicable" (Oxford English Dictionary, 2024). Famously, Freud's entire psychoanalytical framework was metaphorically informed (often explicitly) by the dominant technology of his time – the *steam engine*. The unconscious mind (or Id), Freud (1940, p. 80) posited, was "a kettle filled with boiling drives" for which the Ego acted as regulating mechanism. As Vroon (1987, p. 403) notes:

> There are many connections between Freud's ideas and […] the steam engine. An important feature of the steam engine is that movement is made possible by a combination of a diffuse driving force and a regulating force needing only limited energy. It costs little effort to release steam opening valves. In the steam engine, the energy source and the regulating mechanism are separated. In addition, the energy is diffuse and has no particular direction.

The metaphor of the steam engine did not remain mere wordplay; it informed, and still to this day informs (albeit in an attenuated manner), the actual practice of psychoanalysis and related

mental health interventions – of therapists, counsellors, and other mental health practitioners in their efforts to help us regulate our ever-boiling kettles.

Freud was certainly not the first significant thinker, nor would he be the last, to build an operative 'theory of mind' from the metaphoric materials of historical context. The 16th century anatomist, Vesalius, for example, saw both mind and body as working in a manner akin to a clock's mechanics, a frame that would later inform Descartes' philosophical notion of 'bête-machine,' or animal-as-machine (Vroon, 1987, p. 400). Fast-forward to the mid-20th century and conceptions of the mind increasingly became linked to technological innovations surrounding *electronic computing machines*. In his posthumous book *The Computer and the Brain*, mathematician and physicist John von Neumann (1958) mapped out in general terms what remains a pervasive metaphorical understanding of how minds work, invoking (empirically questionable) notions of "formal rules for the manipulation of symbols, as well as certain ideas about data structures for representing information" (Daugman, 2001, p. 31). Informed by the persistent and overarching metaphor of 'mind as a digital machine,' we now find other prevalent ideas about brains 'storing' memories, performing 'operations,' being 'hardwired' for certain behaviour, or experiencing information 'overload.' In this way, humans not only use digital media metaphors to make sense of the *digital,* but also *themselves*.

If you were to ask anyone to describe how the mind works – past and present, expert and layperson alike – it would be all but impossible to do so without recourse to the workings of some or other entirely separate and distinct entity. Moreover, the understanding of *that* entity might very well be anchored in yet another metaphor, and so on and so forth, in a process potentially leading 'turtles all the way down' to the problem of infinite regress. Furthermore, metaphorical explanations can easily become circular, forming self-referential loops where A is likened to B, and B is likened back to A. For instance, we might compare minds to digital devices, which, in turn, might be conceptualized based on our understanding of the mind. Such circular reasoning can lead to self-fulfilling prophecies, as when computer scientists aim to create 'artificial brains' in computers, with the first step in the process being to equate the brain to "a very serious computer" (Ramacher & Malsburg, 2010, p. 1)

Metaphors We Live By

In *Metaphors We Live By*, Lakoff and Johnson (1980) highlight the myriad of ways in which metaphors shape human thought and culture. Rather than being a niche phenomenon confined

to the realms of poetry or rhetorical argumentation, Lakoff and Johnson showcase how metaphors are interwoven with the very fabric of human meaning- and sense-making. As they summarize: "In all aspects of life, not just in politics or in love, we define our reality in terms of metaphors and then proceed to act on the basis of the metaphors" (p. 158).

At their most basic level, Lakoff and Johnson (1980) define metaphors as ways of "*understanding and experiencing one kind of thing in terms of another*" (p. 5, original emphasis). Building on this definition, they analyze how overarching metaphors in Western culture – such as 'argument is war,' 'time is money,' 'life is a story,' and 'mind is a machine' – shape not only how people think, but also how they behave. For example, the notions that arguments can be 'won' or time can be 'wasted' represent not mere descriptions, but key features in how people come to perceive certain statements as being true. As Lakoff and Johnson (1980) underline, such truths are contingent upon the underlying metaphorical context, since other potential metaphors – say, 'argument is a dance' or 'time is a river' – would be no more or less true in an objective sense of the word yet produce different outcomes. This, they argue, challenges the fundamental philosophical assumption that humans can divorce truths from their socio-cultural context:

> Metaphors are basically devices for understanding and have little to do with objective reality, if there is such a thing. The fact that our conceptual system is inherently metaphorical, the fact that we understand the world, think, and function in metaphorical terms, and the fact that metaphors cannot merely be understood but can be meaningful and true as well–these facts all suggest that an adequate account of meaning and truth can only be based on understanding.

> (Lakoff & Johnson, 1980, p. 184)

To study how certain statements come to be perceived as true, Lakoff and Johnson (1980) argue, it is necessary to investigate how they fit within dominant metaphorical understandings in particular socio-cultural contexts. As an example, they highlight how the statement "inflation has gone up" (p. 170) can only be accepted as true within a culture that also accepts its underlying metaphors, namely that "inflation is a substance (an ontological metaphor) and more is up (an orientational metaphor)" (p. 170, capitalization removed). Before accepting any measurement of inflation, in other words, a person also must accept that inflation is a measurable 'substance' that can move 'up' or 'down.'

A key implication of these arguments is that humans can never 'escape' metaphors and simply describe the world 'as it is.' Since metaphors represent cornerstones of human meaning- and sense-making, even statements that might not seem metaphorical at first glance are still contingent upon underlying metaphorical meanings that have just become taken for granted over time. In some cases, say with 'inflation,' the metaphorical underpinnings might be obscured, yet can never fully dissolve. If we return to our earlier example of the human mind, Lakoff and Johnson's theory reminds us that the metaphors we use to describe the mind – for example a 'hydraulic system,' 'mechanical clock,' or 'computer' – will have different implications for our thinking and behavior. At the same time, we can never understand the mind 'as it is' since the notion of a 'mind' itself builds on an underlying ontological metaphor of 'mind as a substance.'

To understand how people in specific historical periods or cultures perceive the 'mind,' we need to investigate its metaphorical roots and relations. Following from this, the study of metaphors should generally be seen, not as an exercise in 'unmasking' false realities, but rather in examining both the generative and limiting implications of how metaphorical understandings shape different worldviews and behaviors. Put differently, the aim should not be to uncover objective truths underneath metaphorical 'smokescreens,' but rather to showcase how different metaphors highlight and neglect certain aspects of the world, and in doing so, shape sociocultural understandings, values, relations, and our shared capacity to change. In relation to the latter, Lakoff and Johnson (1980) write:

> If a new metaphor enters the conceptual system that we base our actions on, it will alter that conceptual system and the perceptions and actions that the system gives rise to. Much of cultural change arises from the introduction of new metaphorical concepts and the loss of old ones.

> (Lakoff & Johnson, 1980, p. 145)

Through the acceptance of new metaphors in specific cultural contexts, new forms of thinking, acting, and understanding take hold. This is a key reason why, as we will return to in the following, digital media metaphors matter.

The Digital Media Metaphors We Live By

Drawing on Lakoff and Johnson (1980), we can see how metaphors about digital technologies both afford and constrain the ways in which scholars, policymakers, journalists, users, and non-users come to perceive and approach them. Whether we describe digital media as being made up of 'platforms,' 'sites,' 'tech giants,' 'clouds,' 'town squares,' or 'rabbit holes' has key implications for how we think and act in relation to them. As Professor Sally Wyatt already noted back in 2004, metaphors around digital media are central to discursive struggles over who gets to define the future of technological progress and human co-habitation:

> Metaphors not only help us to think about the future; they are a resource deployed by a variety of actors to shape the future […] Thus, it is important to continue to monitor the metaphors at work to understand exactly what work it is that they are doing.

> (Wyatt, 2004, pp. 257–258)

Since human existence is increasingly mediated, curated, surveilled, and commodified through digital technologies, the metaphors we use to understand this relationship are worth critically investigating. Not only do such metaphors influence day-to-day perceptions; they also play a key role in shaping moral, political, and legal questions with profound material consequences, such as: To what extent are social media 'platforms' accountable for the content they 'provide,' 'host' or 'circulate'? To what extent are 'cloud services' liable for their carbon emissions and environmental impact? To what extent are 'data miners' allowed to treat sensitive personal information as a 'natural resource'? To what extent can 'filter bubbles' or 'rabbit holes' explain societal harms?

These questions have far-reaching socio-political implications, highlighting how metaphors play a central role, not only in shaping descriptive statements, but also all the potential problems and solutions that ensue from them. In this regard, different actors often have vested interests in promoting certain metaphors over others. Nowhere is this clearer than in the case of surveillance-based tech giants, who have developed a consistent fondness for claiming benevolence through metaphors of 'communities,' 'town squares,' 'platforms,' 'marketplaces' and 'clouds,' both as a means of attracting users and, importantly, as a way of trying to evade costly legal responsibilities (Frischmann & Selinger, 2018; Gillespie, 2010). For a trillion-dollar

surveillance company like Meta, asking people to call you a 'community' is, of course, asking for more than a little metaphorical heavy lifting. The same goes for Apple or Alphabet, marketing their vast respective networks of energy devouring server farms as an ethereal 'ICloud' and 'Google Cloud.'

The significance of digital media metaphors calls for critical analysis into how and why certain metaphorical understandings come to be accepted as dominant and true in specific contexts, while others fall to the wayside. In the digital 'realm,' this requires continuous effort, as metaphors come and go with remarkable speed. As Professor Markham (2020) notes:

> The metaphors we use to frame our experiences of the internet (then and now) matter; in that they construct both the enabling and limiting features of our technologies. These frames spread through everyday terminologies and visual imageries. What we called surfing, we now call sharing. What was once cyberspace and The Net are now platforms. What we once called online or networked is now IOT [Internet of Things] and smart.

> (Markham, 2020, p. 9)

Whereas web browsers used to be imagined as 'gateways' to new and separate worlds – 'electronic frontiers,' 'information superhighways,' the 'world brain' – people today increasingly experience the digital as engrained in the fabric of everyday life. While we still might talk of online 'spaces,' 'environments,' 'sites,' and 'addresses,' this spatial vocabulary is increasingly supplemented or supplanted by notions of 'smart devices,' 'cloud services,' and the 'Internet of Things,' blurring previous lines between 'online' and 'offline'; or what also used to be (rather quaintly now) called 'cyberspace' versus 'meatspace' (Markham, 2020).

What we often do not realize is just how profoundly metaphorical digital technologies are to us. As Marianne van den Boomen (2014) notes, "even the very notion of 'zeros' and 'ones' is metaphorical, since computers do not recognize numbers, but just different voltage states" (p. 12). The same can be said for the notion of a 'computer,' which was once a job description for people – mostly women – employed to perform complex mathematical calculations by hand, for example during World War I and II (Grier, 2005). These metaphorical layers and histories are easily forgotten, along with the power relations involved in such processes of

forgetting. This is another key reason why it is important to interrogate digital media metaphors.

Aim and Structure of the Book

The overall aim of this book is to create a forum for critical reflection and discussion about the constitutive as well as constraining powers that metaphors have over collective understandings, relations, imaginations, and inequalities around digital technologies. In our view, too many scholars of digital media have tended to uncritically adopt or produce metaphorical buzzwords with damaging consequences. We thus see this book as a response to Wyatt's (2021, p. 407) "plea for critical scholars of the Internet and digital media to be simultaneously careful and imaginative in their own choice of metaphorical language."

The book is structured in three parts, spanning *infrastructure, content*, and *users*. Moving through the chapters is thus a thematic journey from the server rooms, satellites, and cables that make up the material foundations of digital services, over the algorithmically provided information that users encounter and produce within them, to, finally, the users themselves. We note that the three parts can be read independently, and in any order, and thus, readers should feel free to jump around, making mental connections as they go.

Instead of presenting a short summary of each chapter here, we will only say a few words about the metaphors tackled in each of the three parts, letting the authors speak for themselves in this shared space for critical knowledge exchange:

Part I – Infrastructures explores four metaphors related to the infrastructural 'backbone' of digital media. These are 'Cloud Computing' (by Mark Andrejevic and Zala Volcic), 'Platform' (by Anne Helmond and Fernando van der Vlist), 'Frontier' (by Howard Scott and Montaser Motia Ujvari), and 'Digital Town Square' (by Anne Kaun). This section unpacks the overlapping ways in which digital technologies – as networks, services, and spaces of economic and socio-cultural activity – are metaphorically envisioned, advertised, and contested. In doing so, the chapters critically reflect on the environmental, democratic, and colonial implications of dominant metaphorical understandings.

Part II – Content focuses on metaphors related to digital media as technologies of information production, consumption, and dissemination. The four metaphors tackled here are 'Filter

Bubble' (by Axel Bruns), 'Data as the New Oil' (by Lisa Reutter) 'Rabbit Hole' (by Becca Lewis) and 'Information Warfare' (by Valentyna Shapovalova). The chapters explore the meanings and implications of metaphoric constructs about how people engage with digital environments – particularly social media – and the ever-increasing expanses of content offered therein. Doing so, the chapters critically address both empirical and socio-political blind spots.

Part III – Users finally turns towards metaphors people use to understand themselves and each other as social beings inhabiting digital worlds. The three chapters here address the metaphors of 'Toxic' (by Marcus Maloney and Judith Fathallah) 'Digital Native' (by Sharon Greenfield), and 'Troll' (by Johan Farkas and Yiping Xia), with the respective discussions all coalescing around important questions of self, identity, and sociality, and how metaphoric constructs "enable as they disable" (Bauman, 2000, p. 21) in our understanding of humans as socially shaped and digitally mediated.

Before turning to the chapters to come, we would like to end with a short note on some of the limitations of this anthology. First, and as outlined earlier, there are so many metaphors to choose from that this is by no means envisioned as an exhaustive account of its topic. Moreover, as is the case with digital scholarship more generally, the space of human activity under examination here is marked by such a constant state of flux that it is all but inevitable that some of the widely used metaphors explored herein – much like the technologies they speak to – might very well drift from the collective imagination over time, and be superseded by others as yet unknown to us. Thus, what we offer here is a series of critical interrogations of dominant contemporary examples, all aimed at shedding broader and deeper light on how metaphors continue to shape the 'digital' as integral to 21st century human experiences.

Second, it is important to foreground that metaphors are always embedded in specific socio-linguistic cultures. Given that this book is written in English, and predominantly authored by scholars based in Europe, Australia, and the US, there are no doubt gaps that might be apparent to readers from other cultural contexts with an interest in this area of scholarship. A key example which springs to mind is the Chinese term 'human flesh search engine' (人肉搜索), used in this socio-linguistic context to make metaphoric sense of the ways in which the internet is collaboratively harnessed to locate, identify, investigate, and expose individuals based on personal information (often compared to 'doxing' in English). Within the constraints of the

anthology's English-speaking and 'Western' groundings, there is also the need to render visible the disproportionate influence enacted by intersectionally privileged Silicon Valley 'tech bro' cultures – as an extension of their broader influence on the material and economic development of the internet itself (Noble, 2018) – in determining which digital metaphors we presently find ourselves living by, and which therefore inevitably emerge as central in the discussions to follow. Limitations notwithstanding, it is ultimately our hope that this anthology ignites fresh thought and debate among our readers, re-emphasizing the need for ongoing collective and critical engagement with the metaphoric construction of our digitally mediated lives.

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