The Safekeeping of Being

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A Leadership Responsibility

By

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Abstract

Human existence is one entangled with technologies where humans attribute meaning, value and importance to technologies as they integrate them into their daily existence. Technology change frequently creates ethically potent circumstances requiring a response from leaders. This research considers how public-sector leaders might ethically guide existential technology change.

The research draws on selected ontological and phenomenological ideas in light of contemporary leadership thinking and public-sector leadership practice to develop a conceptual model. The model illustrates the uncertain, ambiguous and confused state that hinders leaders' ability to guide technology change. Its central node is ontological ambiguity, which is probed further in order to provide a foundation for leaders to guide technology change.

The primary proposition is that contemporary leadership presents a diminished and disoriented position to the mediated relation humans have with technology and that an ontological perspective can help public-sector leaders who govern existentially-mediating technologies to overcome limitations in their practice.

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Chapter 1: Introduction

This chapter provides factors motivating the research and locates the gap in the literature, enabling the formation of the research question. How the question will be answered is followed by an outline of the thesis chapters.

1.1 Motivation for the Research

On Friday 15th March 2019, a single terrorist entered two mosques in Christchurch during prayer, killing 51 and injuring 40 worshippers. During the attack the terrorist livestreamed the event on social media via a camera fixed to his helmet (Classification Office, 2019). The terrorist made extensive use of technology to plan his attack and his radicalisation was significantly affected through his use of online platforms (Royal Commission, 2020). This example graphically illustrates the mediating role of technology in influencing an individual's identity and beliefs about what could be achieved, such as radicalising others and providing them instruction and technique for carrying out similar attacks.

This vignette reveals an entanglement central to this thesis: Humans–Technology–World (H–T–W). Humans relate to technology in the world, with technologies influencing, and, at times, altering the meanings they attribute to their relationships with themselves and others, and the things that exist in their world of activities. The meanings emerging in this entanglement often have moral and ethical salience that becomes pertinent to leaders charged with aspects of their governance, as noted by Vallor (2016), among others. Furthermore, public-sector leaders are complicit in establishing meanings and practices that shape people's relationships with technologies. Thus, a public-sector leader's knowledge, skills and virtues, their ability to govern the moral mediation of technology and of morality itself through their decision-making, become especially relevant.

The scope and reach of 21st-century technology into human existence has potential to substantially alter the nature of being itself. If this premise is accepted, leaders require a perspective on the H–T–W relationship in which technology is not understood purely as a tool, or a means to an end, but rather as an integral component of what helps to create and shape the world. This perspective provides for an ontological point of departure for the argument in this thesis.

Despite volumes of literature on leadership, there has been scant attention to any ontological orientation to leadership. Among those who have taken such a stance, Heil (2011) describes the primordial nature of an organisation and provides a hermeneutic phenomenological investigation of leading in an organisation. Souba (2011) uses ontology to provide a foundation for medical ethics. McKenna and Rooney (2007) propose an idea that blends Aristotelian wisdom, psychological theories of wisdom, complexity and other theories into what is largely an epistemologically-oriented interdisciplinary concept they call ontological acuity.

Given the magnitude and complexity of technologically mediated change, public-sector leaders have an obligation to grasp the nature of the mediation that is taking place, to acknowledge the role of things in daily realities, to accept that moral mediation occurs within the human–technology relationship, and thus to apply leadership to enable or nudge an ethical trajectory for that mediation, guided by a consideration of what is essential for *the safekeeping of being*. The ‘safekeeping of being’ borrows from Heidegger, who advises humans to come into the right relations with technology to keep being safe. The safekeeping of being is thus posited as the core obligation of those public-sector leaders who are engaged in governing emerging, existentially-mediating technologies.

In the absence of studies that investigate the leadership role and influence in existential technology mediations, this research asks *how might public-sector leaders ethically guide technology-mediated existential change?* The research question is addressed by developing a conceptual model of the way leaders may ethically guide such change, based on findings drawn from a literature review and from interviews with public-sector leaders.

1.2 Research Design

A conceptual model addressing how public-sector leaders might ethically guide technology-mediated existential change was developed through an iterative research design. The first phase was a comprehensive review of selected strands in the literature on technology, ethics and leadership. This was followed by interviews with public-sector leaders in New Zealand. Interview findings were considered in light of the literature review, leading to the presentation of a conceptual model and propositions for leadership. To then situate this model in an ontological frame, its elements were pursued in a second literature study. With the aid of an extended philosophical underpinning, implications for leadership were developed to conclude the thesis argument.

1.3 Thesis Outline

Chapter 2, Research Design and Methodology, elaborates on the methods used in the thesis. It describes the initial selection of review topics, the interviews, and the approach to developing and grounding the conceptual model.

Chapter 3, Literature Review, establishes an initial positioning of technology, ethics and leadership influences in the H–T–W relationship. The review centres attention on the way technology alters perceptions and meaning and what technology reveals about humans in their daily activities, along with the implications this has for leadership. Given that the potential scope for a literature review is wide, the review initially filters and then builds from thinkers who consider the phenomena of existential technological change. Ontological and postphenomenological perspectives are important for the examination of existential change of humans in the world with things, and provide the primary orientation within a potentially very wide literature landscape.

The objective in the technology section of the review is to explore the H–T–W relationship and the mediating role of technology within that relationship across differing human spheres: identity, relationships, truth, behaviour and privacy, the manner in which mediation takes place, and how technologies alter meanings and perceptions and the influence of humans in their life-world¹.

New and disruptive technologies challenge existing moral norms. Deontic, utility and virtue ethical theories, which provide philosophical grounding for much of Western culture, are challenged by a need to consider the moral agency of non-biological entities. For this reason, the literature review of ethics considers how ethics itself is changed by technology, and examines the work of thinkers who seek to broaden the human-centred focus of moral theory, mindful of the mediating influence of technology on ethics. Thus, the objective is to show how and why ethical theories strain to account for technology mediation, and then to explore the contemporary ethical theories and reasoning which might better guide technological change.

To assist in investigating the existential nature of technology mediation for which a leader has influence, the leadership portion of the review is guided by an ontological perspective on the role of a leader in the H–T–W relation. This perspective encourages different thinking about

¹ Life-World (lifeworld) is a term used in phenomenology, popularised by Husserl, to mean the background on which all things appear as themselves and show up as meaningful.

the essential purpose of leadership with the express intent of challenging existing leadership views.

Data collected during the interviews is presented in Chapter 4. The data from public-sector leaders reveal how they understand the practical issues they are dealing with, their considerations and thoughts on existential technology change, and appreciation for the skills they have for directing that change.

Chapter 5, Conceptual Model, sets out the model and its propositions. Chapter 6: Philosophical Groundwork, then seeks to extend and deepen the underpinnings for the model as it has emerged to this point. It delves into the philosophical foundation of technology-mediated change. The review centres on Heideggerian reflections of technology, leveraging contemporary writers, and presents why and where a metaphysical account of leading change can be expanded. The chapter develops a deeper philosophical perspective of humans entwined and coping with things.

Chapter 7 provides a discussion of the findings and summarises the prominent links between the literature review and interview findings, confirms the concepts and propositions formed in Chapter 5, and presents the implications of the research findings for public-sector leaders.

Chapter 8, concludes this research presenting the value and importance of the research findings for both academics and practitioners. Limitations of the research are noted and directions given for areas of future research.

Figure 1 on the following page presents the chapters of this thesis in graphical form.

1: Introduction

2: Research Design and Methodology

3: Literature Review

Purpose: Positioning, clarifying and refining

3.1 Technology

3.2 Ethics

3.3 Leadership

3.4 Entanglement: Technology, Ethics, Leadership

4: Interviews and Reflections

Purpose: Present interview findings

4.1 Interview Findings

4.2 Literature Reflections

4.3 Emerging Concepts

5: Conceptual Model

Purpose: Develop the conceptual model

5.1 Conceptual Model and Research Question

5.2 Conceptual Model

5.3 Propositions

5.4 Research: Next Steps

6: Philosophical Groundwork

Purpose: Develop ontological foundation

6.1 Part A: Ontological Ground

6.2 Part B: Technology, Ethics, Leadership: An Ontological Perspective

6.3 Part C: Leadership: Being in the World

7: Discussion and Implications

Purpose: Answering the research question, leadership implications

7.1 Part A: Discussion

7.2 Part B: Implications for Public-sector Leadership

8: Conclusion: Contributions, Limitations and Future Directions

Purpose: Conclude the thesis

8.1 Overview of the Research

8.2 Research Findings

8.3 Contribution of the Research

8.4 Limitations of the Research

8.5 Directions for the Future

Figure 1: Chapter Presentation

Chapter 2: Research Design and Methodology

This chapter outlines the philosophical paradigm where the research is situated. The methodology is discussed and the process for conceptual model building described. Research steps taken, data collection and data analysis is outlined.

2.1 Research Paradigm

The research question has set the philosophical direction, given that the research assumes technology can bring about changes to existence. Possibilities for existence are constituted in a relationship with things (objects and technologies) and with other humans. Interpretations of what it means to exist with things makes it relevant to study the phenomenon of humans with things, and as a part of human existence, the role of technology in that phenomena.

Ontology is a branch of philosophy that studies existence, the nature of being and what it means 'to be'. Of particular importance is that being occurs, and meanings emerge out of being 'in' a world, not separate from it. This perspective directs attention towards paradigms that attempt to understand existence as an ongoing, temporal interplay of humans entangled with technologies as already and always in an H-T-W relationship. A phenomenological account therefore is not a study of independent subjects and objects but rather a study of the meanings and interpretations that arise with the co-constituted relation between them. This allows for the consideration that reality and meaning arise within a mediated relationship with things therefore to study those mediations is valuable.

2.2 Research Methodology

To assist in answering the research question, a conceptual explanatory model and set of supporting propositions has been a primary aim of this research. The model aims to embody the phenomena being studied as comprehensively yet as parsimoniously as possible. Whetten (2002) acknowledges that a conceptual model is not a theory by itself, rather a model is properly viewed as a visual prompt to help researchers highlight the main features of their explanations. A model groups together different concepts and presents their relationships with one another. The composition of a model is motivated by the research question.

Whetten (2002) describes four steps necessary to build a model as a graphical representation. These are: developing the constructs, identifying the relationships, developing the conceptual

assumptions, and any contextual assumptions. While the first two steps focus on constructing a graphical representation, the final two steps specify the context, or boundary conditions.

Jabareen (2009) notes the value of a conceptual model when bringing together different bodies of knowledge, which is relevant here given the wide scope of technology, ethics and leadership. Jabareen also notes there is a lack of qualitative systematic methods for building conceptual frameworks. He sees several features of a conceptual framework:

1. Conceptual frameworks are based on concepts alone.
2. A conceptual framework is interpretative - for understanding, not prediction.
3. The sources of data are often multi-disciplinary.

Jabareen (2009) proposes proceeding with the following phases for conceptual model building:

Phase 1: Mapping the selected data sources;

Phase 2: Reading extensively and categorizing the selected data;

Phase 3: Identifying and naming concepts;

Phase 4: Deconstructing and categorizing the concepts;

Phase 5: Integrating concepts;

Phase 6: Synthesising and resynthesising in order to make sense; and

Phase 7: Validating the conceptual framework.

Similarly, while theory-building is not targeted in this research, there are a number of structured theory building methods that provide guidance for the construction of a conceptual model. Adding depth to Jabareen's (2009) phased approach, detailed above and following Lynham's (2002) five-phased general method of theory building (refer to Figure 2 on the following page) is appropriate for the iterative nature of this research, given that the method provides continuous and iterative conversation between knowledge and experience of the phenomena in focus. Van de Ven (2007) offers an equally valid complementary method, however, the method explicitly requires practitioners to determine the reality and solution (Storberg-Walker, 2003), which was not part of the present research design.

Figure 2: Lynham's (Lynham, 2002) Five Phase General Theory Building Model

The five phases of Lynham's model are presented below:

1. Conceptual development. This phase is to develop the conceptual model. This is achieved initially through the literature review and later expanded through interviews. Although this research follows Whetten's (2002) and Jabareen's (2009) modelling building approaches, the conceptualisation stage can also include other perspectives such as Weick's (1989) disciplined imagination and Storberg-Walker and Chermack's (2007) five component approach. The latter is especially relevant to provide accuracy and precision during the early stage of theory development and model-building in this instance.

Conceptual development includes phases 1 to 6 from Jabareen (2009) presented above. Although this phase represents the bulk of the work reported here, the subsequent steps presented below were only briefly reflected on, in order to contribute to the final discussion in chapters 7 and 8.

2. Operationalisation. An explicit connection between the conceptualisation phase, and practice, is established.

3. Confirmation or disconfirmation. This phase falls within the practice component of applied theory-building. When adequately addressed, this results in a confirmed and trustworthy theory that can then be used to inform practice.

4. Application. Application of the theory enables further study, inquiry, and understanding of the theory in action. An important outcome is that it enables the theorist to use the experience and learning from the real-world application of the theory to further inform, develop, and refine

the theory. For this research, this step would provide opportunity for future undertakings and the evolution of the conceptual model into a leadership theory.

5. Continuous refinement and development of the theory. As Lynham (2002) points out, a theory is never complete, so it is necessary it be continually refined. The outcome of this phase is to ensure that a theory or model is kept current and relevant and that it continues to have utility in the practical world. Given time and scope constraints, this has not been possible for this research.

2.3 Research Process

For this research the development of a conceptual model proceeded in four steps.

Step 1: A detailed literature review was undertaken and initial concepts formed.

Step 2: A set of qualitative interviews was undertaken in order to ground the literature findings to issues that face public-sector leadership in daily practice. Initial insights and concepts emerged when the interview transcripts were coded and were able to be referenced to the literature.

Step 3: The conceptual model was prepared and propositions developed.

Step 4: The literature was used to develop philosophical depth and to assist with refinement of the model's concepts and propositions.

2.4 Data Collection and Analysis

2.4.1 Literature

There is a significant reliance on literature for this research. To assist with this process a semi-structured method was used initially to ensure that a systematic approach to the literature search was carried out. The researcher followed the three stages of effective literature reviews model provided by Levy and Ellis (2006), shown in Figure 3 below.

Figure 3: Three Stages of Effective Literature Reviews (Levy & Ellis, 2006)

Input

Much of the initial literature gathering occurred in 2019 and given the wide potential literature scope, care was taken to continuously narrow and refine the scope as influential authors became more evident. Following Levy and Ellis (2006), to ensure quality, peer-reviewed journals were identified in online databases available to Victoria University students.

As the review proceeded, Google Scholar (used for initial broad searches), EBSCO, JSTOR, ProQuest and other database searches located important authors and papers. Attention was paid to ensure that important academic journals covering technology, ethics and leadership were being included. After some time, important papers and primary authors were already in the researcher's EndNote library. While some distance from saturation, this indicated that a good depth of literature had been scanned (approximately 1100 references in total).

Processing

Given the broad scope of possible literature across domains of technology, ethics and leadership, at first it was difficult to establish a manageable yet relevant direction. Eventually it made sense to organise the literature around postphenomenological² thinkers where technology mediation theories (Verbeek, 2016) were used to build upon existential and ontological philosophies.

The constant question through the review was “how is the work presented in the article relevant to my study?”. Each paper was located, the abstract read and, at times, the conclusion to determine its suitability. Influential author's papers were also used to see how other authors were citing them. This was especially useful to find differing and competing perspectives.

² Postphenomenological analysis considers the phenomena of humans using everyday artefacts and how interpretations and meanings are mediated within the interactions.

In early 2020 New Zealand entered Covid-19 lockdown. There was a considerable time of uncertainty for the researcher for the remainder of 2020, which is relevant because it deepened the concern for a mediated role of technology (the frequent use of online conferences for example), the reliance on technological innovation as a means to counter the pandemic, and the use of technology to circulate fake news and conspiracy theories.

The EndNote library grew as the research proceeded. Some way through the analysis, key authors' documents, were imported into NVIVO and auto-coded to ascertain themes that may be interesting and, in part, to cross-reference coding used for the interviews.

Output

Output from the literature review process is presented in chapter 3. Here the literature is analysed and relevant findings are presented that contributed to the conceptual model and proposition development. In turn, the conceptual model development provided reason to return to the literature. The literature has played an important part throughout the research and is therefore evident in all chapters.

2.4.2 Qualitative Interviews

Interviews were designed to gain insight into how public-sector leaders might ethically guide technology-mediated change and, thus, assist with surfacing concepts while also grounding them, as much as possible, in practice. The questions sought to determine the approach used for the discovery and anticipation of ethical matters in their technology deployment along with the basis from which judgement and meanings were attributed ethical issues.

There were eight initial Likert-type rating scale questions (1-10) at the beginning of the interview where leaders were asked to rate their skills, ability and practice pertaining to their capacity to:

- influence moral trajectory of technology,

- predict future impact of technology,

- determine the extent to which they consider:

 - ethical impact of technology they deploy

 - technology impact on well being

- understand the ontological influence of technology, and

apply skills to assess ethical issues of future technology.

Interview questions followed. The first two questions were personal, used as ‘warm up’ questions, and the later questions were more specific about their work, as public-sector technology leaders.

Interviews were semi-structured, of one-hour duration, with eleven public-sector leaders who were in technology decision-making roles. One leader was in a policy development role although was also dealing with technology in a public-sector capacity. Thirteen interviews were conducted including two each with the first two participants. Interviews were recorded.

The interview audio files were transcribed, initially by the researcher and later by a professional transcriber. Audio files and transcripts were loaded into NVIVO. Having the audio and transcription together in NVIVO allowed the researcher to review audio for tone and, at times, for clarity.

Two additional variables were added to the transcriptions (Speaker and Question) in the raw transcripts. These were then auto-coded in NVIVO, making it very easy to see all the responses for a particular question and being able to easily isolate the researcher from responses.

NVIVO anchor codes that were initially used were expanded to better reflect the transcripts. Transcripts were also printed and read twice before coding, to gain better familiarity that a researcher may obtain when transcribing themselves.

An initial concept map was generated using codes from NVIVO, as these appeared to suggest how leaders were considering existential technology change, and their ability to influence this change given what they considered to be their role. This is shown in Figure 4 below.

Figure 4: Initial Concept Map from Leader Interviews

Other NVIVO analysis tools were used such as word count, word cloud, and cluster analysis, although these did not reveal additional insights. The concepts in the model were able to be refined as the conceptual model was further developed. Importantly, the part of the research that addresses how leaders currently consider technology–mediated change is able to be drawn out and contrasted with current practice.

2.4.3 Return to the Literature

The literature review and interview findings provided sufficient detail for the construction of the conceptual model. At that point the researcher returned to the literature, specifically that of existential philosophers such as Heidegger in order to achieve philosophical depth, to expand understanding of the mediating role of technology and to add certainty to the concepts in the model.

2.5 Ethical Consideration

HEC was approved.

Interviewees were requested to sign a consent form with interview details held in confidence. Only the researcher and supervisor were able to access interview transcripts.

Transcription services employed were required to sign a confidentiality form.

2.6 Chapter Summary

This chapter has positioned the research within a paradigm of postphenomenology. The method for concept model building has been presented. Processes and analysis for the literature review explained as are the qualitative interview procedures and how NVIVO was used to locate and explore concepts.

Chapter 3: Literature Review

This chapter presents a review of literature following a technology, ethics, leadership sequence. The entangled relationship that occurs when technology, ethics and leadership converge and overlap is then discussed.

3.1 Technology

The scope of technology literature is wide. To narrow that scope, the literature centres on phenomenology and postphenomenology in order to explore the mediating role things play in everyday existence.

3.1.1 Technological Mediation

The human-experienced reality is increasingly digitally mediated (Introna, 2007). In such a reality, the world is experienced through devices (H–T–W), less through direct human–world interaction (H–W) and, as a consequence, experiences themselves and the meaning of those experiences change. Albert Borgmann's (1984, 2014) critique of this digital reality, what he calls the 'device paradigm',³ claims that while technology may unburden humanity of certain tasks, it may also alter human enrichment, connectedness and intimacy associated with being gathered into a practice.⁴ Amplifying Borgmann's concern, Heikkerö (2005) suggests that a life dominated by digital devices becomes devoid of nobility and dignity as a person is not called upon to engage in practices that issue a demand or struggle to bring themselves into a full, non-diminished H–T–W relationship.

An example of device influence is shown in a documentary by Winans et al. (2020), where parents provide their children a smart device for a perceived benefit of physical security. However, as the children indicate, this benefit can unknowingly introduce harmful and addictive behaviour, where the greater danger is mental and emotional. For example, bullying is no longer physically limited to the school yard. It can occur 24/7, where a potential bully may intrude into a child's bedroom, unknown to the parent. Within these digital interactions,

³ For Borgmann, in the device paradigm, devices reveal the world in particular ways and therefore influence the way humans experience and live in the world. Borgmann argues that when devices make less demands on skills and attention, humans engage less with the world and a form of 'de-skilling' occurs (Borgmann, 1984).

⁴ Borgmann describes what he calls a 'focal practice' as a way to have a fully engaged and intimate connection with an activity in the world. He believes that a focal practice will balance the disengaging consumptive practice that have become part of a technology society.

neutralising face-to-face interaction is removed while cognitive foundations for decision-making in adolescents is still developing, so children have limited capacity to understand and, when necessary, defend themselves (Hartley & Somerville, 2015). The device may do the opposite to providing security and parents may not be aware such devices have similar addictive reach as substance abuse or gambling (Gottschalk, 2019; Zuboff, 2019a), or that their children may become neurological targets⁵ for marketers and advertisers.

Like Borgmann, Power (2000) presents a view that technologies are an intrinsic part of the human-world experience and the role technology plays has influence and consequences for human values and meanings and, therefore, technology cannot be understood as separate from its actors because neither has a stable identity or form without the other.

Verbeek (2002) argues that Borgmann's project of focal practices leans towards a thesis where humans become 'alienated' from their world. The alienation thesis often leads thinkers towards an either/or choice, keeping some technologies in and others out. Verbeek suggests that Borgmann does not pay enough attention to the amplifying (frequently positive) aspects of technology.

Latour (2002, p. 247) like Verbeek, observes the binary nature that results from this formulation of the H-T-W relationship and points out that such thinking suggests the need to "...bind back the hound of technology to its cage." Both Latour and Verbeek suggest that technology has a mediating, not always alienating, role that may reduce or amplify aspects of experience.

An amplifying example is suggested by Brooks (2007), who writes that the magic of the information age is that "it provides us with cognitive servants" and "we can burden these servants and liberate ourselves." Borgmann's views would align with Brooks that technology allows humans to outsource tasks, but he might suggest the loss comes through a detachment from real things and he would not perceive this as liberation. Verbeek would acknowledge the benefits of outsourcing some human capacities and he would also seek to understand the way technology amplifies some experiences and reduces others.

The accounts of technology mediation from Ihde, Latour and Verbeek are formed from a phenomenological analysis of being-in-the-world given by Heidegger. Heidegger's phenomenological analysis of what it means to be anything at all attempts to take into account

⁵ Samuel (2019) writes of neuromarketing, where advertisers determine how the brain makes purchasing decisions and how to nudge those decisions below the level of conscious awareness, so these non-invasive neural interventions can happen without knowledge.

the role of things in the world. Rising from this thinking, technology mediation's principal idea is that technologies help to shape and give meaning to the relations between human beings and the world. Together they bring forth a world. Rather than approaching technologies as objects opposed to human subjects in an already existing objective world, or as extensions of human beings, it sees them as mediators of human–world relations.

Differing perspectives are inevitable and often authors, in seeking to make sense of this complexity and resulting uncertainty, select a single case to evaluate and explain human interaction with technology. This enables close inspection of the phenomenological shaping of the H–T–W relation. A single case evaluation will amplify some explanations and reduce others. However, meanings are framed and carried forward, not within a single H–T–W relationship, rather in much broader socio-material⁶ and temporal contexts that have pre-existing backgrounds containing meanings that contribute to and shape the moral salience of the mediations. A multiplicity of ontologies within a socio-material world is constituted in complex and subtle ways and is closer to the practical reality for those leaders charged with governance responsibilities (Weidler-Lewis et al., 2020).

Kiran (2015, p. 124) suggests that there are different dimensions of technology mediation. Each dimension has a 'two-sidedness' where mediation has differing influence. With 'two-sidedness' across these dimensions, Kiran attempts to avoid a 'positive/negative', 'in/out' binary perspective and remains open to considering the multiplicity of the mediations. Kiran's dimensions enable a postphenomenological framework and starting point to understanding how public-sector leaders might discover the mediating issues of emerging technologies.

Table 1 below, adapted from Kiran (2015), presents mediation dimensions along with the two-sidedness influence for each dimension. Examples shown in the right column are elaborated following Table 1.

Dimension of Technology Mediation	Two-sidedness	Example
Ontological		
How technologies shape the world and how they shape us, how they contribute to how we see ourselves being in the world, who we are and how technologies appear as meaningful	Revealing Concealing	Identity

⁶ A term from (Orlikowski, 2007, p. 1435) a "constitutive entanglement of the social and the material in everyday life".

Epistemological		
How technology mediates our knowing and understanding. How knowledge is structured.	Magnification Reduction	Relationships
Practical		
Technologies have a daily practical impact on how we engage with each other and the world.	Enabling Constraining	Behaviour
Ethical		
How technologies pull or push moral thinking and judgement in a certain direction.	Involving Alienating	Privacy
Political		
How technology influences democracy, distributive justice, policy making and political leadership	Inclusive Exclusive	Truth

Table 1: Summarised and adapted from Kiran (2015)

Following technology influence from these dimensions of mediation and exploring their “two-sidedness” provides a useful starting point for understanding mediation influence. Illustrative examples of technology mediations found in the literature are now presented.

3.1.2 Ontological: Identity

Schultze and Mason (2012) write that as people spend more time in virtual communities and virtual relationships, who they are, what they can do, and who they can become is inextricably entangled with the identities their virtual bodies afford. Schultze (2010) notes that bodies have inherent limitations in that they are situated, making the body present in a given place, time and social context. They are also the primary location of identity markers such as sex, race and age. We are our bodies, Schultz writes; they bring humans into being. Digital identities seek to eliminate the constraints of corporeality by masking or altering the body’s identity markers and engaging a digital presence to be ubiquitously present, in differing forms and with multiple identities.

Identity may be transformed beyond any recognition in a post-human existence. Thacker (2003), citing futurist Kurzweil (1999) writes that, as humans become an embedded part of computational technology (cognition offloaded or becoming a hybrid to cloud computing for example), humans will become software, not hardware; identity will switch to the permanence

of software and bodies will no longer appear as central to identity or being human (Bailey, 2014).

Humans do not create their identity independently of others and a world, as Matthews (2008) writes, human identity formation being sensitive to modes of self-presentation with others. With increasing digital interactions, identity construction occurs in a digitally mediated environment. Who humans can be, what they can do and markers of ‘who I am’, are being mediated at the same time, reflecting Kiran’s ontological dimension (refer to table 1 above).

3.1.3 Epistemological: Relationships

Turkle (2017a, p. 159) documents a user’s experience of being in an online relationship in the virtual world site Second Life:

“Second life gives me a better relationship than I have in real life. This is where I feel most myself...Online second life make it possible for me to stay in my marriage, with my family”

As Turkle notes, the avatar the user has never seen or spoken to in person, and that appears in a body nothing like his own, is most representative of his truest self. This user’s online marriage with another avatar has become an essential part of the user’s actual world, life satisfaction for this individual is a mediation of on-line and off-line relationships.

Mesch and Talmud (2006, p. 137) note closeness of friendship is a “function of social similarity, content and activity multiplexity, and duration of the relationships”. Noting the overall benefit of close supportive relationships on individual self-esteem and well-being, they conclude that relationships formed online are perceived as less close, have shorter duration, reduced variety of conversation, and are less supportive.

Kachouie et al. (2017) reveal that relationships formed with social assistive robots can improve elderly well-being, especially their positive emotions and relationships, or can be used for encouraging behaviours that promote well-being, as in rehabilitation therapy or to promote self-directed exercise (Prescott & Robillard, 2021).

Humans develop deep emotional attachments to robots (Prescott & Robillard, 2021; Turkle, 2007). Social robotics may simulate feelings and friendship, reduce loneliness and anxiousness (Prescott & Robillard, 2021) and be convincing in doing so. The benefits may overlook or encourage the other outcomes: “companionship without the demands of friendship, the illusion

of connection without the reciprocity of a mutual relationship” Turkle (2017b, p. 1). To highlight factors in forming relationships with robot companions, she writes:

“They have not known the arc of a life. They have not been born; they don't know pain, or mortality, or fear. Simulated thinking may be thinking, but simulated feeling is never feeling, and simulated love is never love.” (Turkle, 2017b, p. 3).

As with Turkle, Christakis (2019), noting that the meanings humans attribute to relationships offline and online are different, shows concern that such technology may mediate a crucial set of human capacities including love, friendship and cooperation.

Matthews (2008, p. 147) argues that in offline friendships the embodied is disclosed, the self is a fully extended self, it is near complete and highly nuanced, which increases the possibility that one can come under the influence, or be co-authored, by one’s friends. When there is a possibility to limit these kinds of interactions, as in online experiences, the cost is a limitation of intimacy. There is also evidence (Lomanowska & Guitton, 2016) that online relationships positively influence aspects of intimacy and online relationships may be better than no relationships at all.

Potdevin et al. (2020) show in research with embodied conversational agents that the interlocutor providing intimacy does matter and they demonstrate that virtual agents can be rated as intimate as humans (Potdevin et al., 2020, p. 10). The expectation however is that humans are assumed to display social skill and intimacy, there being no similar expectation toward virtual agents which suggests a lowering of fidelity of interaction.

Palazzolo and Bettman’s (2020) research of pornography use found that for some users, it became too much effort to form normal relationships and users found it easier to turn to internet pornography to have some of their intimacy needs met. Similar to substance abuse, online pornographic addiction is linked with patients with hypersexual behaviour (de Alarcón et al., 2019; Love et al., 2015) and erodes the physical and emotional intimacy in real relationships (Palazzolo & Bettman, 2020).

The meaning of what a relationship is, is altered in online activity. The online relationship also mediates understanding of offline relationships, reflecting Kiran’s epistemological mediation dimension (refer to table 1 above).

3.1.4 Practical: Behaviours

Zuboff (2015, p. 18) notes that technology mediation on behaviour can “take direct aim at individual autonomy, systematically replacing self-determined action with a range of hidden operations designed to shape behaviour at the source.” Kosinski et al. (2013, p. 5803) show that Facebook Likes can also be used to automatically and accurately predict a range of highly sensitive personal attributes. As these authors observe, being able to mediate behaviour opens opportunity for behavioural design.

The opaque nature of search and advertising algorithms such as Facebook or Google (Introna, 2007; Wells & Thorson, 2017) means that intentional mediation curation is hidden. Zuboff (2019a) writes that the manipulative quest to change real world behaviours must bypass user awareness as awareness creates friction and friction is expensive (it costs the advertising companies), so mediation needs to be designed to be undetectable (Zuboff, 2019a). Privacy also creates friction. To overcome friction, stealth is required and therefore deployed by design.

Behaviour analysis dives into the intimate expressions of self with algorithms trained to mine for moods, emotions and vulnerabilities to produce planned, predictable and reliable behavioural outcomes while carefully circumventing the awareness of human targets (Zuboff, 2015). In controversial research Kramer et al. (2014) shows how emotional states can be transferred to others via emotional contagion, without their awareness. This occurs without direct interaction between people (exposure to a ‘friend’ expressing an emotion is sufficient),⁷ and with a complete absence of cues. Online messages influencing of emotions affect a variety of off-line behaviours (Zuboff, 2019a) amplifying the reach of on-line mediation of human behaviour.

These technologies are designed to capture and respond to children’s everyday experiences and seamlessly, their bodies, activities and social experiences are tracked and quantified.⁸ Children have become valuable (often non-consenting) data sources (Holloway, 2019). From such behavioural information Facebook can work out when a user feels anxious (Smith, 2017; Zuboff, 2019a) and can identify the moment when a user (or voter) is most vulnerable to a specific advertising cue and nudge. Zuboff (2019b) writes that Google’s success derives from

⁷ A Tweet expressing moral outrage increases the retweet rate by 17% (Brady et al., 2017).

⁸ In October 2021 (Allyn, 2021; Cat & Reed, 2021), Frances Haugen, a Facebook whistleblower, reported that Facebook’s own research found that 13.5% of U.K. teen girls say their suicidal thoughts became more frequent. after starting on Instagram. Another leaked study found 17% of teen girls say their eating disorders got worse after using Instagram.

its ability to predict the future, specifically the future of human behaviour. She suggests that the best means to predict behaviour is to create and shape it at its source, and therefore, that human behaviour modification has become a market. González (2017, p. 12) notices that Google and Facebook have “tremendous capacity to mould the ideas, attitudes and behaviours of an audience captured by its own compulsions”.

These companies actively orchestrate outcomes by choreographing and curating technology mediation. As shown here, social media platforms are highly effective at behavioural modification of everyday human emotion and behaviour, reflecting Kiran’s practical mediation dimension (refer to table 1 above).

3.1.5 Ethical: Privacy

Floridi (2005) sees digital information technologies as re-ontologising technologies, where humans are increasingly living in a new information space,⁹ as information agents. This space alters the nature of privacy and human understanding and appreciation of it. Similarly, writing of privacy issues associated with Google Glass, Kudina and Verbeek (2019) suggests that technology mediates attention and focus-altering values constitutive for the privacy of communication. These authors note that norms of interaction coevolve with technology and this mediates the meaning that a value such as privacy acquires.

Nissenbaum (1997, 1998) describes the paradoxical issue of privacy in public. While being in public frequently assumes no privacy, surveillance via CCTV,¹⁰ Smart Phone use or wearable technology that intrudes into public spaces has additional mediating influence. Patton (2000, p. 187) notices that discourse of technology in public places frames issues as a rights-based privacy issue (e.g. a user of Google Glass or CCTV has the right to use such technology) that undermines and obscures important social and cultural significance of public places. Roessler and Mokrosinska (2013) highlight that interaction in public places is dependent on forms of civility, respect and civil inattention, and relationships based on such qualities are only possible in public if private affairs are kept private. They argue that such qualities are preconditions if stable and consistent social collaboration are to take place in public.

⁹ Floridi (2014) refers to this as the InfoSphere. The infosphere is an information environment analogous to the biosphere inhabited by inforgs (informationally embodied entity made up of information) whereby entities are a reflection of their information state.

¹⁰ In 2003 British public places were monitored by 1.5 million CCTV systems with the result that the average citizen is recorded 300 times a day (Floridi, 2005).

Where technologies (surveillance or otherwise) are present in public spaces, individuals may control their self-presentation and interactions with others, at least indirectly, and social practices become altered or distorted. In addition, the right to be left alone, or even the right to be lonely (Riley, 2002), where anonymity replaces visibility, such indifference to the other, learning to look past a face as Tonkiss (2003) writes, is one way in which differences are lived in everyday social spaces. Not being able to seek solitude or anonymity, the very privacy of a ‘private life’ (Tonkiss, 2003) in public, given the presence of technology, is a loss or distortion of solitude and anonymity, and a resulting change in indifference becomes the mediated consequences of limiting privacy in public spaces.

Privacy becomes particularly problematic, and possibly entirely transformed, in a post-human sense. Discussing brain–computer interfaces that can read thoughts directly from a person’s neurons and translate them into words, Samuel (2019) writes that brain data is the ultimate refuge of privacy and that when the processes for collecting such data on a large scale is possible, it will difficult to reverse the process.

The right to a private life in public demonstrate the two–sided mediation in Kiran’s model (refer table 1 above) and how technologies pull or push moral thinking relating to privacy, or even the right to be lonely, in a certain direction.

3.1.6 Political: Truth

Postman (1986) believes technology is blind to the quality of the content and gives a form of legitimacy to the idea of context-free information where the value of information need not be tied to any function, or truth, or value it might serve in social or political decision-making and action (Postman, 1986, p. 65). The telegraph, Postman suggests, introduced into discourse: irrelevance, impotence and incoherence, and it becomes difficult to determine information legitimacy.

Post-truth, with similar new terms such as ‘fake news’ and ‘alternative facts’, resonate with Postman as qualities that lead to misinformation and related new terms that encompass lies, bullshit, buffoonery, engineered silence and gaslighting (Keane, 2018). Postman’s useful insight is that, to understand a medium, it is necessary to understand the type of discourse the medium promotes and is mediated by (Hannan, 2018; Postman, 1986). While Postman noted that television turned public discourse to entertainment, Verbeek (2020) writes that Twitter moves political interaction to a space more suitable for “sending” than for “interacting”, and

Ott (2017) argues that microblogs like Twitter are particularly suited to ensuring that complex issues and events that require depth of understanding, instead foster simplicity, impulsivity and encourage incivility.

Wheeler (2017) points out algorithms that deliver news feeds are programmed to prioritise user attention over truth, to optimise for engagement rather than facts. Allcott and Gentzkow (2017) observe that social media technologies, such as Facebook, encourage insulation from alternative views and open possibility for the formation of “echo chambers”, allowing for factually incorrect, misleading or entirely fabricated information that previous communication technologies could not have provided (Numerato et al., 2019). Truth, argues Keane (2018), is being shaped by technology and the deception taking place is particularly difficult for humans to detect (Plotkina et al., 2020).

The use of social platforms by political leaders, bypassing completely traditional media that may have provided at least basic fact-checking, appears to have reduced political discourse to the length of a tweet, and such platforms, for some political leaders, become a space for political bullying (Lazarus & Thornton, 2020). Technology is mediating truth, reflected in Kiran’s political mediation dimension (refer table 1 above).

3.1.7 Section Summary

The examples, given above, of technology mediation emphasised varying perspectives of the H–T–W relationship that reflect different practicalities, different actors, different ontological assumptions and show that different technologies create sociomaterial contexts that are unstable, malleable, where complex meanings and values are in permanent fluidity. Where humans-with-technologies co-shape meanings, practices and experience, an ontological multiplicity is present. Ontological multiplicity refers to conditions under which different ontological assumptions and meanings confront, conflict and support one another through “world-making”. Introna (2013) and Borgmann (1984) express how technology devices do not disclose this multiplicity, or the necessary conditions for them to be what they are, rather, they hide the necessary effort for them to be available for use and do not disclose their meanings.

Beyond mediating identity, relationships and behaviours, technologies also mediate the foundation for moral decision-making when for example, qualities such as truth and trust are mediated, making it challenging for discerning and developing ethical standards and norms. Dorrestijn (2017, p. 311) writes that the delegation of morality to technology noted by Latour,

and mediated morality noted by Verbeek, should be considered the problem that ethics is about. This is an appropriate place to turn to the literature of ethics.

3.2 Ethics

The scope of ethics' literature is also wide. To narrow that scope, focus is towards theory and practice accounts of ethical concerns that frequently result from technology mediation.

3.2.1 Ethical Dilemma

Ethics is a domain of enquiry that engages in reason, judgement and action. As a branch of moral philosophy, it deals with knowing 'what is the right thing to do?', 'what is the right way to do it?', and 'what are the right reasons?'. To be concerned about what to do and how, implies that something matters, is worth caring about and is attributed a form of worth. It has some value.

Ethical enquiry often stems from a dilemma or conundrum, when whatever action to take for something that matters is unclear, where moral norms lose their self-evident character and reflexivity is necessary. For example, ethical enquiry may take as a concern if and how a technology innovation amplifies or reduces a human quality. Some technologies are ethically 'thin' (have little moral relevance), perhaps because the impact of their use has been attributed little worthiness, as in the case of a stapler. Ethically 'thick' technologies may have moral significance if their use influences something that matters. For example, lethal autonomous weapons may engage targets without human intervention.

Examples provided in the technology section highlight the mediating, multi-dimensional and, at times, conflicting role of technology in the context of what people value. Technology may also alter what matters and, thus, can be said to mediate morality. Ethically thick technologies, such as lethal autonomous weapons, alter the sovereign position of humans, with moral decisions being heavily influenced by a non-human agent, raising considerations regarding the location and apportionment of moral agency and accountability. As authors such as Byron (2010) and Vallor (2010) write, this ethical uncertainty exposes difficulty for traditional ethical theories (deontic, utility and virtue ethics) when dealing with complex technology innovation.

As articulated in the Collingridge dilemma¹¹, technologies are thrust upon society, they never arrive fully mature and rarely is there a chance to “do” ethics first (Moor, 2005).

The following two sections examine theoretical and practical responses to address technology-mediated ethical challenges.

3.2.2 Theoretical Ethical Responses

Floridi (2010) proposes that when it becomes impossible to tell the difference between human and artificial agents (when an artificial agent passes the Turing test), it may be required to attribute ethical agency to non-biological entities. He argues that in these circumstances even more recent forms of ethics such as bioethics and environmental ethics fail because they are biased against what is inanimate, lifeless, intangible or abstract (Floridi, 2010, p. 116).

Floridi (2014) argues for understanding the self as a re-ontologised informational self, based on a theory of information ethics in which the information nature of entities qualifies them as centres for moral concern. Floridi shifts the centre of moral reasoning to the patient, away from the actor or act (where traditional moral theory centres moral concern and accountability).

Bryon (2010, p. 146) critiques Floridi’s information ethics through a lens of traditional ethical theories. Byron suggests that Floridi’s information space leaves no tolerance for Kantian deontology, threatens utilitarianism and the deeply disruptive impact on ethics that technology has even leaves Floridi’s information ethics stranded.

Authors in considering the implications of technology on ethics have re-examined the subject–object distinctions in deontological and utilitarian moral perspectives. Each approach embodies one of the modernist poles (Verbeek, 2011, p. 31) whereby humans experience either a subjective judgement of the world or the objective consequences of their actions. Verbeek (2012) contrasts these orientations with virtue ethics that, he suggests, accounts for the interwoven nature of subject and object and the basis from which these contribute to a good life. A virtue ethics stance is also suggested by Vallor (2010) in order to overcome what she argues is a utilitarian bias that has become a part of studies on the social and ethical use of technology, and to provide a vantage point from which to consider the mediating influence of

¹¹ Named after David Collingridge, the dilemma is the quandary where “attempting to control a technology is difficult...because during its early stages, when it can be controlled, not enough can be known about its harmful social consequences to warrant controlling its development; but by the time these consequences are apparent, control has become costly and slow” (Genus & Stirling, 2018, p. 63).

technology use on virtues such as patience, honesty and empathy. According to virtue ethicist MacIntyre (2007) ethics requires a *telos* (a desirable end, an understanding of what matters and is worthy of concern). MacIntyre (2007) argues that a liberal, capitalist ideology has seen the destruction of teleological morality and therefore renders ethics incoherent.

Seeking to counter extreme views of ethical relativism and dogmatism, Ess (2006) develops the notion of interpretative pluralism, in which diverse moral traditions can recognise another as someone who may be connected to, but not identified with their own moral perspective. For example, there may be diverse interpretations of Good. This pluralism extends beyond a concept of tolerance or identity and tries to remain open to the paradoxical nature of the dilemma ethics deals with. Ess suggests a form of '*pros hen*',¹² a middle ground, that maintains coherency across divergent ideas. Ess's interpretative pluralism supports complementing disembodied, reasoned objectivist considerations of ethics with elements of sense making, reflection, moral imagination, embodied experience, caring and virtue.

Seeking new insights from which to consider ethical aspects of technology, Dorrestijn (2012) examines Foucault's work on sexuality, technology and the care of the self in light of Foucault's earlier work on discipline and power. He argues that Foucault's work on power dispelled the largely Kantian idea that freedom and autonomy were preconditions for ethics. Researching ancient Roman and Greek cultures, Dorrestijn (2012, p. 232) writes that Foucault discovered in these cultures that members did not employ the figure of a free subject called to respond to moral law. With attention to the art of living, the concern of ethics was subjectivation, that is becoming subject, or the "emergence of formation of a self, with self-reflexive experience and the competence of self-conduct" (Dorrestijn, 2012, p. 232).

One implication of the technology-mediated quality of human morality is that, ontologically, there is no external position from which judgements can be made (Verbeek, 2011). Meanings take form within interactions. Accordingly, Verbeek (2011) suggests that an ethics-guiding technology needs to be directed at the intertwining of humans and technology 'from within', providing a focus on the quality of human existence 'with' technology (Verbeek, 2006). When it is not possible to create a pure (sovereign) position outside the realm of technology, ethics itself becomes a hybrid and mediated affair.

¹² The Greek phrase *pros hen* means in relation to one or towards one.

Theoretical discussions offer intriguing, yet inconclusive responses to the challenges of the Collingridge dilemma. Are humans in need of a new ethics, do they need to build on existing ethics, recover ancient ideas, consider ethics as a hybrid, mediated affair, or something else? While such questions are being worked out, technology innovation seems to be gathering speed. Innovation, and the existential changes it brings, demands practices, tools and leadership guidance, if only to muddle through the messiness and uncertainty (van de Poel, 2016).

3.2.3 Practical Ethical Response

If ethicists and leaders are concerned about, and cannot rely upon, current ethical norms to guide them, then intelligent thoughtful reflection is essential to lead to practical responses.

Brey (2012), Palm and Hansson (2006), Stahl et al. (2017), Wright (2011), Kiran et al. (2015) and others establish categories of ethical concerns, from which relevant questions can be formed to assist project participants to bring ethical issues to the surface. Brey (2017) suggest that there are five distinct approaches to ethical reflection on emerging technologies, as shown in Table 2 below.

Method	Detail
Generic	Focus on the broad concerns and frequently rest on conceptual analysis and empirical observations, prior to any product or use
Anticipatory	Combine various kinds of foresight, forecasting and future studies
Ethical risk analysis	Focus on risks technologies impose – health, security, safety, economic and environmental
Experimental	There are no other reasonable means for gaining knowledge about the potential hazards of new technology. The controlled incremental introduction of emerging technologies so that an adaptive learning process is possible
Participatory and deliberative ethical approaches	Identify and include the public and stakeholders who ultimately will need to provide ethically informed judgements about a technology's benefit, development and use.

Table 2: Ethical Approaches to emerging Technologies, based on Brey (2017)

Including many of Brey's approaches, technology assessment (TA) tools have been developed and are typically concerned with the discovery, anticipation and avoidance of harmful impacts of new and emerging technologies. Technology assessment has historically examined quantifiable risks regarding safety, health or the environment of new technology. Recently, participatory responses have been developed, such as constructive technology assessment or technology assessment with ethical and moral issues added (Kiran et al., 2015) in order to address normative deficits in technology assessment (de Boer et al., 2018). In these forms, technology assessment becomes a practical way of doing ethics.

Van de Poel (2016), argues that there are conditions when new technologies can be introduced as social experiments. Deriving conditions for acceptable experimentation with cues from Beauchamp and Childress (2013) and international codes of ethics,¹³ van de Poel (2016) develops a principle-based perspective shown in Table 3 below.

Principle	Detail
Non-maleficence	Obligations relating to doing no harm, including obligations to minimize risks, or to take precautions against possible risks or harms from the experiment.
Beneficence	Obligations to do good, including obligations to take away existing harm or to prevent harm or risks that do not originate in the experiment to produce more good than harm, to create or increase benefit.
Respect for autonomy	Obligations to protecting and guaranteeing the autonomy, the autonomous choice, of individuals and groups.
Justice	Obligations relating to distributive justice, to special protection of vulnerable groups, to avoiding exploitation, but also to procedural justice.

Table 3: Principles for Experimentation (van de Poel, 2016, p. 676)

As Rosenberger (2017) suggests, ethical principles such as those presented in Table 3 arise from the difficulties that theorists have in dealing with technologies. However, these principles emphasise individuals, whereas technology decisions frequently relate to groups with

¹³ The Nuremburg Code, Helsinki Declaration, and Common Rule from the United States.

conflicting interests (Rosenberger, 2017, p. 10). In some circumstances, the principles will conflict.

Brey's (2012) anticipatory technology ethics takes foresight analyses as inputs and aims to identify ethical issues that may be present in projected techniques, artefacts, uses and impacts. He does this through cross-referencing the results of foresight analysis against ethical principles such as those presented above (Brey, 2017). Introna (2005) further extends Brey's framework with what he calls 'disclosive ethics' to expose the biases of the designers of information systems.

Kiran et al. (2015) argue that the TA has come to rely on checklists that narrow the assessment to a pre-defined list of ethical issues. They suggest that attention is needed to consider ethics that emerge 'within' a socio-material environment and to acknowledge that human values and norms are not static and are mediated within human-technology relationships. They reconceptualise technology assessments as forms of 'accompaniment', given it is not possible to step out of the mediations. Assessments, they argue, should start from 'within'. They argue that as accompaniment, the design and appropriation of technology is open to situatedness, alternative life-worlds and changing moral norms (Kiran et al., 2015, p. 16) and are able to account for how human beings are shaped by technologies and the moral responsibility people have to actively shape their lives in accompaniment with technologies. As Verbeek (2015, p. 224) puts it, an ethics of 'accompaniment' rather than 'assessment' should be seen as a form of 'governing' the impact technology can have on one's existence and on society.

3.2.4 Section Summary

Ethical theories and practical responses such as TA are important for reasoning about a moral dilemma. They may also be problematic where and when the H-T-W relationships mediate the meanings of ethics itself.

The aim of the mediation orientation to ethics is to ground decision-making with knowledge of humans in a technology-mediated existence. To define what is the right thing to do and what matters, what is worth caring about and is attributed a form of worth is difficult without knowledge of how that mediation is occurring.

Mediations arise from being in a world with things where things materialise morality. This close relationship between technologies and morality, when the interactions between them have moral significance, they require leadership attention. Leadership, discussed next, must

therefore consider not only the way humans act with technology but the way the mediation influences and directs morality.

3.3 Leadership

To refine the scope of leadership literature, this section positions the wide array of contemporary leadership themes alongside the public-sector leadership literature.

3.3.1 Introduction

Technology may be initially regarded as ethically neutral and only becomes morally significant when used. A leadership response may take the form of legislation or policy that limits or controls use; for example, removing military style assault weapons from a community. Technologies may have moral sway even before human use, by design. In such cases, a leader's response may take the form of ethical TA carried out by the designers and innovators of technology.

Regardless of where moral sway is located or what may be a governance response, leadership would be desirable to direct any moral or ethical concern. To direct such change, a skill of leadership would be to know how, where and when to intervene and would include an ability to identify how mediation is occurring and the distribution of any moral significance within a particular situation. A review of the current leadership literature is undertaken next to explore the extent contemporary private and public-sector leadership themes consider technology mediation.

3.3.2 Contemporary Leadership Themes

Contemporary leadership is often identified with establishing a vision, modelling the way and being authentic (George & Sims, 2007; Kouzes & Posner, 2007). McKenna and Rooney (2007, p. ii) claim popular leadership themes have become fragmented, implying a technocratic rational approach to management that has become a form of instrumentalism and, like science, values-free (Rooney et al., 2010, p. 163). For example, a leadership theme such as transformational leadership implies that individual realities are of different importance to organisational goals. Why else, Keeley (1995) argues, would they need transforming?

Other leadership themes, such as servant leadership (Greenleaf, 2002), focuses attention on the relationship between leaders and followers. Rather than transform or transact, such themes are

concerned with qualities such as trust, commitment and relationships, a view expressed by Ciulla (2014, p. xv) who points out that “Leadership is not a person or position. It is a complex moral relationship between people”.

Similarly, leader-member exchange focuses on the relationship between leaders and followers. Followership influence within the leader-follower relations is observed by various authors (Kellerman, 2007; Kelley, 1988; Lord, 2008) and in the important role of followers for establishing necessary conditions for effective leadership (Hogg, 2008). The follower perspective has largely been ignored in public administration literature (Vogel & Masal, 2015).

Griffen and Stacey (2005) write that the role of leader emerges and is continually iterated in processes of recognition and identity formation. The role is co-created within a group. The importance of within-group leader identity formation was made real in a research trial involving prisoners and prison guards. Reicher et al. (2005) observed that the group that was designated guards were unable to establish a shared identity. Even though the prisoners held lower position in the prison hierarchy, their sense of shared identity increased their group cohesion and together they dominated the guards. Reicher et al. (2005, p. 553) noted that leadership emerged through creating identity definitions, a “shared sense of us” and then turning these definitions into practical realities (Reicher et al., 2005, p. 556). The experiment indicated that “who are we?” (identity) is more central to leadership than “where are we going?” (strategy and vision) or “I’m in a leadership role” (hierarchy).

Considering ethical leadership, Ciulla (2014, p. xv) writes that ethics is at the heart of the relationships between leaders and followers, although she suggests that much leadership research and literature deals poorly with ethics. Ciulla (2014) suggests that studies of ethical leadership often turn out to be related to effectiveness. Levine and Boaks (2014, pp. 236, 238) argue that many accounts of ethics and leadership view values and character as central to ethical leadership. These normative accounts are typically instrumental because they are strategically useful to the leader not because they are tied to or yield human flourishing, but because they increase follower work levels and, even when ethical values might increase followers’ well-being, this, too, is valued for instrumental reasons.

Cunliffe (2009) sees leadership as a moral activity that is not tied to business ethics, or having a code of ethics, or as training members to act in ethical ways, seeing these as externalised ethics. Cunliffe also advises leading as a moral activity is not about moral intelligence or thinking ethically, rather moral activity is more closely aligned with who leaders are in relation

to others, their values and beliefs and the will and capacity to empathise with others (Cunliffe, 2009, p. 97).

Writing about ethics of justice within leadership, Rhodes (2012) suggests that, given a largely rationalistic orientation of justice within most organisations, justice becomes a device for manipulating followers to consent in the name of the collective goal or vision as it is defined by the organisational elites, an instrumental perspective of achieving organisational ends (Rhodes, 2012, p. 1314). Rhodes writes that such an instrumental perspective is naive in that it does not account for the complex ethical dilemmas faced by leaders who allow themselves to be affected by the ethical demands of others (Rhodes, 2012, p. 1326). Recognising the inherent tensions, Sandel suggests that “Justice is inescapably judgemental” (Sandel, 2009, p. 261) and, taken further, Rhodes makes the point that justice violates ethics (Rhodes, 2012).

MacIntyre’s (2007) recovery of Aristotelian virtue ethics has influenced leadership authors who emphasise the importance of leaders’ moral character (Howard et al., 2013; Moore, 2008). Virtues such as courage, honesty, justice and temperance have become aspects of leadership (Hackett & Wang, 2012), thought necessary of a leader with a virtuous character able to act wisely and make ethically sound decisions (Ladkin, 2006). Frequently cited with Aristotelian ethics are concepts of excellence (*arete*), practical wisdom (*phronesis*) and flourishing (*eudaimonia*) that are considered a part of Aristotle’s teleological ideals leading towards ‘the good life’ (Nonaka & Takeuchi, 2011; Shotter & Tsoukas, 2014). Inclusion of virtue approaches in leadership practice is not surprising, although Ladkin (2006) suggests that practical ways of developing virtuous leaders are difficult to locate.

3.3.2 Public-sector Leadership

Many contemporary themes mentioned above dominate the public-sector leadership literature (Vogel & Masal, 2015), with transformational leadership receiving particular attention (Wright et al., 2012). Leslie and Canwell (2010, p. 304) advise that public-sector leaders need to demonstrate leadership capabilities in four dimensions: developing the insights necessary for successful change within complex systems; building the cognitive skills to manage effectively in demanding environments; demonstrating the emotional intelligence to motivate their people; and actively building leadership at all levels.

These ideas resonate with two public-sector leadership literature reviews (Van Wart, 2003, 2013). Four key questions raised in the papers reviewed were: ‘Does leadership make a

difference?', 'What is the proper focus?', 'What is the best style to use?' and 'Are leaders born or made?'. A fifth was added in 2013: 'How and where is administrative leadership distinct from generic forms of organisational leadership?'. Addressing the last question, comparing public and private leadership, Hansen and Villadsen (2010, p. 271) found that public-sector leaders use more participative leadership while private managers use more directive leadership because, they argue, public managers have higher perceived levels of role complexity, role clarity and job autonomy signifying the marked differences in leadership role context. Boyne (2002) also observed differences (public organisations being more bureaucratic) while (Andersen, 2010), finds differences between private and public leadership in style and motivation approach. They also notice that there are competing views across researchers, meaning that there is a continued need for clarification of the public–private distinction.

Vogel and Masal (2015) provide a review of public-sector leadership literature that includes a factor and correspondence analysis from which they derive a map of leadership research. They detected four generic orientations to public leadership: functionalist (outcomes, efficiency and effectiveness), behavioural (including leadership themes such as transformational), biographical (ethical leadership themes) and reformist (concerned with public management reform). Each operates at different levels of abstraction and position themselves in regard to their philosophical orientation (i.e. objective vs. subjective). Figure 5 below presents the map, with black clusters that indicate recent trends in research on public leadership, whereas white clusters reflect various traditions on which current research builds.

Figure 5: Map of research on public leadership (Vogel & Masal, 2015, p. 1172)

In this map can be seen many of the same trends as found in non-public-sector leadership literature, an important difference being the reformist approach (in the upper right square) targeting new public management themes. These authors also note that, given the impressive quantity and variety of existing research, the field is still young. They suggest that laying both inside and outside their map there is opportunity to account for the particular setting of public organisations and how context shapes, and is shaped by, the interactions of leaders and followers (Vogel & Masal, 2015).

Many authors (Jensen et al., 2019; Jensen & Bro, 2018; Paarlberg & Lavigna, 2010; Van Wart, 2003; Vogel & Masal, 2015; Wright et al., 2012) note the linkages to transactional and transformational leadership themes where the desire to transform is evident. Jensen and Bro (2018) notice that the visionary component central to the conceptualisation of transformational leadership makes it particularly relevant in public and non-profit organizations given their strong service and social-oriented mission. These authors also note that this leadership theme is concerned about motivating public service employees to greater effort.

Marques (2021), in a literature review of public service motivation and leadership, also noted that transformational theory is dominating the leadership approaches within the research on public-service motivation and leadership

Jensen et al. (2019, p. 7) have suggested that the core ambition of transformational leaders is to “induce employees to transcend their own self-interest for the sake of the organization”. They argue that the “transformational leadership concept should capture leaders’ “systematic effort to transform employees to share the organizational goals because they are desirable in themselves”. Park and Rainey (2008), who compare transactional and transformational leadership, claim that transformational leadership assists follower development and has beneficial effects of public service-oriented motivation. Also noted is that a public-service leaders’ influence is not limited to inside an agency. It affects citizens’ attitudes towards a public-sector leaders’ performance (Caillier, 2020).

Ansell et al. (2021, p. 955) claim that public-sector leaders dealing with Covid-19 cannot rely on transactional or on transformational leadership that seek a particular vision for how to solve public tasks. They write that there are no conditions of certainty or knowing what the problem is, so learning to operate with uncertainty and without sufficient knowledge of cause and effect; they argue that this leaves room for research into other leadership themes.

Writing about new public management (NPM) leadership, a number of authors (Brookes, 2011; Kellis & Ran, 2015; Welbourn, 2015) have observed NPM, dominated by outcomes and process targets that has, as Brookes (2011, p. 191) claims, resulted in a leading of “counting what can be counted rather than what counts”. Easy-to-measure but relatively meaningless targets that have typified NPM have overshadowed the more difficult identification and balancing of competing values towards the creation of socially useful outcomes.

Following their literature review of public leadership, Kellis and Ran (2015) write that NPM reforms resulted in dysfunctional leadership through application of business-management principles. Noting this dysfunction, citing both Reed (2012) and Adams (2011), Kellis and Ran (2015) discuss the occurrence where well-intentioned people participate in organisational activities that cause harm, a result of circumstances where individuals become separate from the consequences of their actions. This stems from technical rationality, which they argue underlies much of traditional leadership theory and, they suggest, is particularly characteristic of NPM (Kellis & Ran, 2015).

If NPM is dead (Dunleavy et al., 2006), although not yet buried (Brookes, 2011), alternatives are emerging. Dunleavy et al. (2006) suggest that the character of post-NPM is currently being formed towards a digital-era governance framework, a transition to a more genuinely integrated, agile, and holistic digitally reliant government. Lips (2020) points out that in a digital-era with high reliance on technology, the high complexity and the low chances of success of digital programs, the role of leadership becomes essential.

Brookes and Grint (2010) consider that another approach to move beyond NPM is by reframing public leadership through emphasising its collective, cross-agency nature, while Bao et al. (2012) propose moving forward with a value-centred framework. Morgan et al. (2019) introduce a prudence, action-oriented leadership framework (Ingle et al., 2018).

VUCA (volatility, uncertainty, complexity, ambiguity) are leadership conditions found in public-sector leadership practice. Welbourn (2015, p. 2) suggests that collaborative leadership is required to create the “nimbleness and agility” needed in a VUCA world. Furthermore, Mangan and Lawrence-Pietroni (2019) note that in leadership within VUCA, styles such as hero leadership are not fit for purpose. Newman et al. (2009) believe that the most important challenge facing public administrators is not to make their work more efficient but to make it more humane and caring.

Crosby and Bryson (2018, p. 1278) in their paper entitled ‘Why leadership of public leadership research matters’, propose a broadening of research beyond the frequent methodical use of single cases, and that scholars would benefit from including public value and public values into research designs. Maak and Pless (2006) acknowledge the relational and ethical nature of the interaction with a variety of stakeholders, not only those relationships within an organization, such as leader-follower, but focusing leadership attention to include all the stakeholders that have a relationship with a leader.

3.3.4 Section Summary

Contemporary leadership perspectives are present in both private and public sector leadership literature and it is important to acknowledge the valuable guidance these provide. However, as presented above and explored below, in the practical and messy realities of everyday leadership dealing with the ambiguity of H–T–W relationship, many contemporary leadership themes appear idealistic, incomplete and unable to deal adequately with shifting technology socio-material contexts.

Visible in the contemporary leadership themes found in both public and private sectors are meanings and tools that assist in developing leadership identity and bind them to their practice. Consistent within all leadership themes is their influence through sense-giving and meaning-making, assisting to shape the H–T–W reality. In this way, leadership is an integral influence in establishing reality, and giving salience to a particular ontological orientation.

3.4 Entanglement: Technology, Ethics, Leadership

In the preceding sections, a refined literature scope of technology, ethics and leadership reveals an entanglement of humans in their world with things. Technologies mediate and play an active role in building that world which frequently reveals moral dilemmas. Things materialise morality, frequently creating ethically potent circumstances requiring a response from those leaders charged with their governance.

This entanglement is embedded in practices, notes Verbeek (2009, p. 361), who claims that if technologies help shape the moral actions of humans, technology designers are doing "ethics by other means", knowingly or not. Similarly, leaders provide interpretation, attribute meaning and legitimacy to technology mediations, so, leaders are also “doing ethics”, materialising morality through their language, decisions and action.

Leaders are influencing how the entanglement is taking shape and the form it is given. To provide adequate guidance to this shaping it becomes necessary for leaders to consider how meanings change as technology, ethics and leadership merge and overlap (represented in Figure 6 below).

Figure 6: Merging and Overlap - Technology, Ethics and Leadership

To study only the separate parts (not the entanglement), technology may be interpreted instrumentally (as a ‘tool’), where technology is always something in service to humans and where ethics is a human affair. Heidegger (1977b, p. 5) notices this distinction when he writes, “The current conception of technology, according to which it is a means and a human activity, can therefore be called the instrumental and anthropological definition of technology.” As argued above, remaining limited to these conceptions of technology misses the opportunity to fully appreciate the mediating dimensions that become visible when attention is paid to the entangled relationship that is present.

A similar conception is evident within contemporary leadership where the meanings that are part of leadership practices appear along a cartesian and anthropocentric plane. At one end of that plane, the cartesian¹⁴ end, meanings and leadership practices reveal the world as an object or resource (increasingly experienced through a technological artefact). At the other end of the plane, the anthropocentric end attempts to take account of the human–human relationships, with humans being the central element of meaning-making, and from where practices emerge. The inadequacy of these accounts as a foundation for leaders addressing existential technological-mediated change is explored in the following chapters.

For both private and public-sector it is difficult to locate leadership literature that describes the ontological backdrop leadership operates within and from which leadership emerges, how

¹⁴ The word cartesian, as used in this document, captures Descartes’ idea that meanings arise in a mind separate from the body (a mind-body dualism exists). This definition represents a dualism whereby ‘the world’ exists separate from the mind; there is a subject–object separation.

individuals relate to and engage in their world and the role of leaders in shaping the meanings that show up for them and the people they lead. As some meanings will become salient, while others are pushed or remain in the background wherever they reside, these meanings are often not morally and ethically neutral. They ‘create a world’, they provide an ontological reality and it is within that world the meaning of technology, ethics and leadership are understood.

As the three circles move and intersect, a triangle shape is formed, known as a reuleaux triangle¹⁵. As with a gestalt switch¹⁶, when perspectives change, existing meanings are reshaped (as when a triangle shape forms from three circles) where previously hidden meanings and new interpretations become available. In subsequent chapters, a leadership gestalt switch will be explored where leadership practice takes an ontological view to complement the cartesian and anthropocentric perspectives.

3.5 Chapter Summary

The literature review has introduced how technologies alter human experiences through dimensions of technology mediation. The ethical response to the frequent dilemma of these mediations and the role of contemporary private and public-sector leadership has been presented. The closing section suggests that when limited attention is paid to the entangled relationship of technology, ethics and leadership, the opportunity to fully appreciate the mediating dimensions is missed, which in turn impacts public-sector leaders as they guide existential technology change.

¹⁵ The reuleaux triangle that forms from three intersecting circles

¹⁶ A gestalt switch is illustrated in the duck-rabbit diagram (Thomson, 2011) where one image, say the duck may be seen initially, then after some time, the rabbit becomes visible. Once both are visible it is possible to switch between them. You cannot see both at the same time. This is of relevance because there is possibility, arguably a need, for a gestalt switch to reshape leadership practice for leaders guiding existential technology change.

Chapter 4: Interviews and Reflections

In this chapter the unfiltered words from public-sector leaders take centre stage and are presented as fully as possible to reveal their experiences of leading technology change. Their insights are reflected on, compared and contrasted with the literature findings presented in Chapter 3.

4.1 Interview Findings

Interviews sought to understand how public-sector leaders, as senior technology experts in their organisations, accounted for the existential and ethical matters in the technologies they govern.

The leaders were asked what the purpose of their leadership role was. Interviewees noted:

“I guess it’s about being able to articulate a vision and show a direction to give people confidence.”

“it’s making sure that my people have everything they need, including the direction to achieve the things that we as a system, and as an agency, need to achieve.”

“I think it’s around removing roadblocks so my staff do the best they can.”

“The primary task of leadership for me is to have some kind of almost epiphany-type vision that moves you so much that you feel it has to happen, and then trying to cast that vision among a team of people to recruit them to see that.”

“Task of leadership is to make positive progress.”

These technology leaders were dealing with practical issues (including Covid-19 response), seeking to reduce technology risk and deployment failure rates, with little or no time to anticipate future ethical issues in technology, as expressed by one CIO:

“Most of our focus is just getting the tech in there to answer the question today. Everyone’s got these anecdotes of how many technology projects they’ve been involved in that have failed and gone completely off the rails, so most of the focus is like, I’ve just got to get this over the line today. What’s going to happen to it tomorrow is most people don’t actually plan that far ahead.”

The instrumental perspective of technology was an underlying orientation expressed in these interview responses:

“But I think a lot of leaders just see it as a piece of tech. They see their current behaviour, and they don’t feel that that piece of tech will have an impact on the way that their group operates or the way that they behave, and it probably has a bigger impact than they realise in most circumstances. If you don’t do that, then actually the culture goes off down a path that isn’t very healthy.”

“Most of our focus is just getting the tech in there to answer the question today.”

Leaders are dealing with issues of privacy and security with some being directly involved with privacy breaches in their agencies. For these leaders, such matters enter quickly into their considerations of technology ethics. Their interventions occur at levels of function, such as how to prevent breaches, how to protect against cyber-attack and reduce cyber risk. As expressed by an interviewee when asked ‘what are current ethical concerns’, the leader indicated:

“... the only things that we really have to consider at the moment are the security implications and how people deal with those, so a lot of that, at the moment, is around awareness, people’s awareness of how the technology works, and how the technology can get subverted, so that’s the thing that I have to deal with.”

Overall, interviewees were uncertain if current ethical reasoning regarding technology-mediated change will be sufficient, as expressed in the following two responses:

“So, the mode of moral reasoning is, at the moment, our moral reasoning. When it comes to future technology concerns, we just don’t know what we don’t know about future technology. So, we can only apply the modes of moral reasoning that we have at the moment. Our modes of moral reasoning, I would say, probably haven’t really evolved much. But everything else, the world is changing at such a rate that we need to be adjusting away our most moral reasoning.

“... we know how to raise these big concerns, but perhaps we don’t know how to have these early conversations around these things to get them lined up and get the issue resolved before it does become a big ethical challenge for us.”

One leader mentioned how technology use (bioengineering their children) may have wide social impact:

“I would make this choice because it is the best for the child, if you can have better people, more capable, more intelligent, faster stronger, etc. etc., then it is good for that child. Or if you could remove disabilities, or things like that, then the outcomes for that person would be better, um, but I feel like the ethics, the sort of technology will only be available for a few people, so the wealthiest people in society, so it would create a big gap between, and increasing between the haves and the have nots.”

One public-sector leader specifically mentioned that the current leadership ‘mind-set’, with public-sector leadership, limited leaders’ understanding of the wider reach of technology in shaping society and noted that it is not a focus of leaders to actively give form to that shape other than as a tool for outcome delivery:

“There is that perception that permeates the public-sector that technology is simply an enabler for somebody else to do something.... I don’t think it’s going particularly well in government at the moment, is that technology is a thing in its own right. It has the ability to shape society and shape outcomes just on its own without actually anybody running a project. I think a lot of state sector leaders struggle with that because they’re brought up with this mind-set of business, creates this outcome that it’s after, and then technology is simply there to deliver that outcome.”

When asked about their ability to direct technology change, leaders see limitations in their knowledge, tools and decision making ability:

“...I probably operate from my own personal, philosophical basis. I probably don’t have any kind of framework that I could apply to a decision-making matrix that would make me think about those things. Sometimes you might be presented with something and it doesn’t sit well with you on a personal basis but being able to articulate that in a work context is quite difficult.”

“I don’t think it’s going to be a place where we have a good debate, the question is whether we choose, or our leaders choose, to make this an issue for debate.”

“... nobody has ever told me or asked, has you your board thought about the ethical behaviour of whatever, I don't even know what that might even look like. Until somebody does, I really don't know what that might look like and as a manager that worries me a little bit, because I should be concerned, I should be able to understand, and I simply, and I don't know how that might effect it. “

Similarly, limitations and uncertainty of approach was expressed with the difficulty in assigning moral accountability to machines and determining if there was a need to provide autonomous (non-human) agents some form of moral agency:

“... to become fully autonomous and detached from whatever basis that they were created from, and therefore are deserving of some type of legal personality, they're kind of attached with rights and responsibilities just as humans are, I don't know what that line is, I don't think it's quite yet envisaged what that line is.”

The following responses related to the use of robots in health care. Interviewees were asked to consider the concern that human capacity will diminish if you lower the frequency for learning nurturing skills by assigning those often-difficult tasks to a machine. The dilemma of two-sidedness (ontological ambiguity) is made by several interviewees.

“I guess I see that they [robot caregivers] help, but it fills me with sadness that we're reducing contact to human replacements. That's how I feel about those. I think it's sad that society's in such a place that older people perhaps don't have enough human to human contact. ... but another part of it is you being able to have more control over your health and wellbeing through the use of technology.”

“there's two sides of this conversation actually. You've got the ethical implications of the use of that sort of technology for that function, but you've also got the ethical implications of not doing it. “

“I think about my mother who had a stroke eight years ago. I know that she wouldn't want to be serviced by a robot, she wants someone who can actually have compassion, but also push her to do the rehab that she's required to do.”

“... the person being cared for could end up with less human contact, if you were to then re-orientate that so the people doing the caring would have less experience doing the caring, and therefore would be less emotionally resilient or less experienced in that, so that is possible. The other side is that, reality is that caring

is difficult, particularly in more intense and long-enduring situations, so people doing the caring are less likely to do it, or it's, you know, unpleasant and stressful, and burdensome and for high intensity maybe lifelong limiting for them, and so you know what is the type of relationship, or caring skills that they build up, well that may be so but is the net gain from it negative, instead of being positive, and so would they run away from any future type of things?"

Confusion and uncertainty leaders share about the future and what might be the right purpose of their technology deployments was raised:

"One of the things that you start to think about from that digital inclusion conversation is that the elderly, for years and years, they've grown their self-worth through their experience in the way that they communicate that with the younger generations and the way they were able to share and grow the younger generations through their experience.

The digital world effectively is cutting that off because the younger generation now is getting that learning experience from the internet, from some anonymous source that's writing some blog article. What is the self-worth conversation with the elderly and are we creating now a generation of elderly that really are just isolated and are feeling worthless in part of this?"

"In a way, the robot isn't necessarily about just a companionship, it's actually about growing their self-worth and being able to interact with society better. So, for me, that is probably the bigger ethical conversation is are we actually enabling our elderly to interact with society and continue to interact in a worthwhile way?"

"... I guess in the case of politicians, a political view or a political platform that is formed without actually understanding the social context or other. We want to impose our world view on how to fix things up or what is right on others without actually having understood the complexity of human life and systems."

In summary, this section has presented interview findings of what some public-sector technology leaders are considering within their daily work, which is following an existing narrative present within a wider socio-material aims of public-sector leadership. The depth of their concern for technology change was particularly evident when considering the influence of technology for their families.

4.2 Literature Reflections

Referencing these leadership realities and insights back to the literature is presented next, following the sequence of technology, ethics and leadership.

4.2.1 Technology

Technology is considered by public-sector leaders mostly as a tool, an enabler of particular strategies, policies and practices. The dimensions of technology mediation are in the background and the focus for leaders is, understandably, on practical matters they are dealing with for their agencies, notably security, privacy, costs and benefits of technology and the management of the risk associated with technology projects.

While one leader notices technology's "*ability to shape society and shape outcomes*", this leader also advised that public service leaders overlook this. Unsurprisingly, leaders do not consider how humans-with-technologies co-shape meanings, practices, and experiences. They do not consider ontological multiplicity or view digital information technologies as re-ontologising the information space (Floridi, 2005).

Leaders considered that robot caregivers (with elderly in this instance) altered the intensity and demands that are bound with social engagement (Vallor, 2015) and reduced opportunity for character development through outsourcing dealing with difficult circumstances. One leader also noted that robot caregivers could also be "*about growing their [elderly] self-worth and being able to interact with society better*", presenting the two-sidedness of technology influence.

A determinate 'impact' perspective is shown in the leaders' responses (albeit subtle in its presence). There is a perceived inevitability about a technology future and the leaders do not see their role as directing that future. Leaders seek technology benefits and to minimise the harmful impacts, which is often associated with receiving 'bad press' from a failed system deployment or a privacy breach.

The leaders did not question the presence of technology. A 'technological' ontological background appears as a meaning framework that is continuously reinforced by technology itself. For leaders this maintains a persistent state and holds sway over a leader's world and has become a condition that reinforces the existing normative claim of the need for more technology that these leaders expressed. That humans quickly reach for technology solutions

to issues is expressed by these leaders and demonstrates that technologies are an essential aspect of the experience of being human. To remove technology, to be naked from it as it were, would be to alter experience, and with technology as ‘second nature’ it seems inhuman to not pursue a technology response.

For these leaders, the meanings and understanding that arise from a technological ontology appear as secondary to outcomes for utility, cost/benefit or determining the balance of negative and positive outcomes. How skills and practices are changed, for example, the practices of caregiving being altered with robotic caregivers as technology mediates the relationship between caregiver and patient, was largely secondary. This influence of technology on caring skills was noted by one leader who observed that it was unclear what type of relationship (patient–caregiver) might form, and the caring skill that might develop. The manner that technology contributes to role identity through being in a co-constituted H–T–W relationship was also, unsurprisingly, not evident in the responses.

The influence technology or their leadership roles has on bringing forth a reality was not a consideration with these public-sector leaders. Some leaders were surprised by the nature of some of the questions as they had not considered their leadership influence for establishing meanings or legitimising the ontological assumptions they were making.

A post-human future, altering what it means ‘to be’, was thought to be some distance away and not something that required these leaders’ immediate attention. When asked if technology was altering the nature of being, there were differing perspectives. A consistent theme of *“I’m nervous about the future”* expressed teleological confusion. Responses were for the need to create a robust, well-informed public conversation and debate.

Few leaders disclosed the way technologies show up as meaningful in the first place (in the H–T–W relationship), nor could they articulate with clarity existential changes or question the mediating role technology has. The leaders expressed an ontological ambiguity in which technology that was once a means has now become teleologically confused.

4.2.2 Ethics

In discussing the practical responses to the ethical issues in technology-mediated change, these public-sector leaders relied mostly on their individual intuition for discovery and anticipation of ethical matters. The leaders did not use any form of structured technology ethical assessment (TA) such as those presented in the literature review. They do not employ ethicists. The

judgements they make sometimes involve conversations with stakeholders regarding cultural change introduced by technology or they use organisational values as a source of reference. Prioritisation matrix (to business strategy), cost–benefit and risk analysis were tools used to guide ethical judgements and to maximise utility. One respondent indicated about ethical discovery: *“fundamentally it’s maximising the benefits and minimising the risks”* and *“in terms of benefits, it’s being clear on what is the overall impact on net wellbeing”*.

Privacy and security were considered the practical ethical issues that matter to these leaders, and have become a conundrum that has warranted their reflection. The need for security and privacy emerges out of the information space these leaders are responsible for. Varying ethical thinness/thickness was raised with the use of data held by their agencies and they expressed both beneficial and harmful outcomes from the information use of their organisations. Ethical consideration of the self as a re-ontologised informational self (Floridi, 2011) or the role of information in self-understanding and the constructions of identities did not, unsurprisingly, feature with leaders. They see their role as providers of information, information being an important consumable and an enabling strategic resource.

Leaders were asked whether current moral reasoning was adequate for leaders to address future moral concerns. The response was:

“No. I don’t think we’re technically aware enough to be able to have a good conversation about that to be honest.”

“I don’t think they are sufficient for where we’re going in the future.”

“sometimes people don’t quite understand the ethical implications and the actual outcome and the impact it could have.”

Acknowledging a benefit of algorithm-assisted decision-making *“human decision-making is pretty imperfect, and augmenting that or informing it is much better”* although there was uncertainty of where accountability and responsibility lay when the centre of moral agency shifted to non-biological agents. Concepts of interpretative plurality (Ess, 2006) appeared only briefly from a Māori cultural perspective when discussing ethical use of land data and did not arise, as Ess considered, from a realisation of incommensurable values and beliefs.

One leader noted the changing nature of ethics as, *“society evolves ethics collectively and over time...there’s a process of evolution that occurs about what we do and don’t value”*. This was

not specifically linked to the H–T–W entanglement, whereby ethics emerges ‘from within’ the relationship with technology.

The leaders interviewed had a variety of responses to the ethical use of technology to detect, diagnose, or to engineer for specific medical or human attributes. The concept of engineering better humans sat uncomfortably for some leaders, while entirely acceptable for others. Their personal beliefs guide their perspectives. Some leaders gave accounts of the way technology contributes to the experience of expecting a child, and potentially, confronting parents with an ethical dilemma if their unborn appears at risk of a serious disability. The use of technology in this way was not perceived as technology mediating their ethical views.

The way leaders are themselves shaped by technologies and the moral responsibility they have to actively shape their lives in accompaniment with technologies was only in the background. Similarly, the ideas that the leaders might be “doing ethics” and materialising morality in language, in what they choose to value, in action, and in establishing particular ethical meanings in their leadership practice sit at the periphery of their awareness and concern.

Technology is not being considered with the perspective of its contribution to the growth of ethical skill and meaning. The technology mediations on behaviour and morality itself was not a focus providing a possible reason for the uncertainty, confusion and discomfort leaders have for the future.

4.2.3 Leadership

In keeping with the literature findings, public-sector leaders locate the meanings and purpose of their practice somewhere along a cartesian and anthropocentric plane in the way they are making sense of their leadership role. This is also reflected in the meanings they attribute to technology deployments with particular emphasis towards technology as instruments for the achievement of outcomes. The plane is graphically represented in Figure 7 below where the dots reflect differing positioning that public-sector leaders take in their practice.

Figure 7: Cartesian/Anthropocentric Leadership Plane

The influence of popular leadership themes is evident and the qualities of leadership presented in these themes have become signature markers for leadership identity. For example, Kouzes and Posner (2007) practices of exemplary leadership, such as articulating a vision and enabling others, were practices these public-sector leaders considered a part of their role.

The public-sector leaders interviewed are arguably their organisation's most senior and technology competent. These leaders are fluent in their accounts of technology impacts. The degree to which they are knowledgeable in the manner that technological mediations shape and give meaning to the reality technology helps to create, why certain realities occur and what other realities may be possible are, by their own acknowledgment, somewhat vague.

While these leaders are dealing with important matters such as information security and privacy, little emphasis is placed on the existential change and the technology mediation influence on wider society. The leaders interviewed have limited ability to articulate technology-mediation influences on well-being and, while mention was made of the New Zealand Government's 2019 Wellbeing budget (Treasury, 2019), it is noted that this does not consider the mediating impact of technology on well-being and references only how technology may be used for innovation and service delivery.

Initial insights from these leaders into how they might ethically guide technology-mediated existential change suggest they have limited ability to respond to the uncertainty and ambiguity they expressed. The leadership tools these leaders carry, reinforcing their identities as leaders and being reflective of contemporary leadership themes, indicate a limited ability to know how, where and when to intervene. An ability to identify how mediation is occurring and the distribution of any moral significance within a particular situation for a particular technology was also limited.

4.3 Emerging Concepts

Concepts become visible as leaders confirmed that:

- Technology is mostly understood as a tool for achieving organisational outcomes.
- The meanings leaders have of their roles gravitates along a cartesian and anthropocentric plane.
- Leaders acknowledge there are existential issues in new technologies.
- Leaders are unsure of the ends (telos) of where technology change will lead.
- Leaders show concern they may not have adequate reasoning ability to work through complex ethical issues embedded in H–T–W entanglements. They express ethical uncertainty.
- Technology's ontological influence is rarely a part of technology innovation or deployment conversations; it remains ambiguous.
- Leaders have limited understanding of technology mediations.

Acknowledging this uncertainty, confusion and ambiguity, leadership decisions and direction still need to be made, this being the practical reality for public-sector leaders. To provide structure and explanation, a model of the concepts that are emerging is presented in the following chapter.

4.4 Chapter Summary

The chapter has presented the insights from public-sector leader interviews. Their insights have been reviewed alongside the chapter 3 literature findings following the technology, ethics leadership sequence. An initial synthesis of the material so far considers what concepts are emerging.

Chapter 5: Conceptual Model

Building from the literature and interview findings, this chapter develops the conceptual model and presents a set of propositions.

5.1 Concepts and the Research Question

The research question asks: How might public-sector leaders ethically guide technology-mediated existential change? To assist with the answering of this question, a conceptual model is developed and used as an explanatory tool. This is presented alongside a set of propositions that are used to direct further literature investigations.

Existential change is central to the research and public-sector leaders acknowledge the magnitude of such change. An exasperated ‘I don’t know’ expresses their uncertainty of what might become the technology-mediated future. The concepts presented next attempt to capture this acknowledged complex and uncertain state.

5.2 Conceptual Model

In seeking to answer the research question a model of the concepts that emerged from the findings is presented in Figure 8 below. Each concept is explained and the arrows representing the propositions are presented.

Figure 8: High Level Conceptual Model

5.2.1 Concept A: Ethical Uncertainty

This concept relates to the uncertainty leaders express in making ethical decisions pertaining to technology-mediated change.

Concern about what the right thing to do is, to understand what has worth and what to show concern for, becomes increasingly complex as technologies themselves become ends deserving of moral agency, or whether something is of worth based upon its information state or its utility.

The public-sector leaders interviewed used no formal ethical assessment (TA) processes and none used ethicists to assist them with ethical uncertainty. The literature review also shows that existing moral theories do not adapt adequately for addressing existential technology change.

5.2.2 Concept B: Ontological Ambiguity

This concept relates to the ontological multiplicity as meanings arise and humans engage in the H–T–W relationship.

Philosophers such as Heidegger, Ihde, Latour and Verbeek contemplate the influence of technology on being, i.e. at an ontological level, however this line of inquiry is not central for leaders who may not have a philosophical background or may see it mostly irrelevant in their everyday practical contexts. This means that technology's ontological and mediating influence is rarely a part of technology innovation or deployment conversations and, despite its importance and value, as these authors show, it remains ambiguous and inconspicuous.

5.2.3 Concept C: Teleological Confusion

This concept relates to the uncertainty public-sector leaders share about the future and what the purpose of their technology deployments might be. This concept can be expressed in the question “Where to from here?” and in leaders “I don’t know” response. The sort of technology-mediated beings humans wish to become remains confusing.

Technology induced teleological confusion is highlighted by both Latour (2002) and MacIntyre (2007) as they suggest that ends may have become lost in the means, and confusion arises about what the proper ends are. MacIntyre observes, “I can only answer the question ‘What am I to do?’ if I can answer the prior question ‘Of what story or stories do I find myself a part?’”, and how is that resolved when, as Latour (2002, p. 252) writes, “we have begun to wish for something quite different from what we at first desired.”

5.2.4 Concept D: Leadership Limitations

This concept relates to the way public-sector leaders direct technology deployment guided by ontological awareness of existential change. This concept also recognises that leadership itself is mediated through the engagement with technology.

A leadership role in meaning-making and directing existential technology change is at the periphery and not a part of leadership focus. Their role in establishing a world, bringing forth a work in a Heideggerian sense, is absent. Leaders are ‘ontologised’ and are ‘ontologisers’¹⁷ although this influence is concealed in contemporary practice where leaders struggle to articulate ontological change that was identified in the literature review. For the public-sector leaders interviewed, their understanding of how they contribute to the ontologising influence of technology is limited.

Leadership practices expressed by leaders interviewed align to what is found in popular leadership literature, with transformation and servant leadership approaches being evident that reside along a cartesian-anthropocentric plane. In these themes, leadership is often seen as strategy and vision-making, transforming followers to achieving alignment to organisational vision and values, towards employee engagement and business performance. Technologies are perceived as tools that bring about an array of possibilities to assist leaders with these functions. These leadership themes take little account of the technology-mediated relationship, reducing the catchment of understanding to guide existential change.

5.3 Propositions

Each proposition links one concept to another and is represented by the arrows in Figure 8.

5.3.1 Proposition 1: Ontological ambiguity amplifies ethical uncertainty

For leaders guiding existential technology-mediated change, there is ambiguity about the ontological ground introduced through existential technology change that amplifies ethical uncertainty, knowing what the right thing to do is, is unclear and difficult to determine.

¹⁷ Used here to describe a person, typically a leader, that through their action and language establishes meaning, to bring forth a world that guide what it means to be and to act within particular context.

5.3.2 Proposition 2: Ontological ambiguity leads to teleological confusion.

For leaders guiding existential technology-mediated change, an ambiguity about the ontological ground that existential technology change occurs within, leads to teleological confusion. For example, what is ‘being a human’ when existing understanding of a human being is bioengineered? The technology ‘means’ become the ‘ends’. Support for this proposition is provided by Latour (2002, p. 252):

“If we fail to recognise how much the use of a technology, however simple, has displaced, translated, modified, or inflected the initial intention, it is simply because we have changed the end in changing the means, and because, through a slipping of the will, we have begun to wish for something quite else from what we at first desired.”

5.3.3 Proposition 3: Leadership limitations contribute to ontological ambiguity

For leaders guiding existential technology-mediated change, there exists an ontological multiplicity as humans engage in the H–T–W relationship. Ontological change remains ambiguous and, for the public-sector leaders interviewed, they are largely unsure or even unaware of the ontological assumptions they make. A form of technology vertigo is apparent for public-sector leadership. This intensifies ontological ambiguity.

Public-sector leaders interviewed expressed concern for their ability to guide existential change. They are naturally embroiled in the practical considerations of their practices, using contemporary leadership themes and tools that assist in forming their leadership practice. The leaders’ role and influence in sense-making, sense-giving and directing existential technology change sits in the background of their practices.

Leaders have opportunity to consider the existential technology-mediated change from different dimensions. This requires leaders to be able to reason about such change from different hilltops (seeing the technology landscape from differing viewpoints) and to understand why meanings become salient and give purpose to action, while others do not or remain in the background. As has been presented, contemporary leadership themes that are found in practice suggest that intelligibilities¹⁸ are restricted to a cartesian and anthropocentric

¹⁸ A term borrowed from Thomson (2011) loosely defined a clusters of meanings that provide purpose and understanding to what shows up in the world

plane and it is rare for leaders to enter into the philosophy of technology to explore contemporary thought from an ontological perspective.

Meaning and interpretation structures orientating public-sector leadership practice, that become bound and preserved in leadership tools of tactics, strategy, vision, culture, and values, assist in binding leaders to their identity and limit and restrict them within their current landscape.

Several additional propositions arise as a result of proposition 3, these are:

Proposition 3.1: Ontological insights will assist leaders governing existential technology change.

An improved ontological understanding, moving beyond a metaphysical account of H–T–W relationships, will make available new possibilities for leaders to direct technology change. This would broaden leaders’ understanding of the H–T–W relationship and may reduce ontological ambiguity.

Proposition 3.2: Leaders understanding the dimensions of technology mediation will assist leaders governing existential technology change.

An opportunity to consider technology change from the broad dimensions of technology mediation (not only an ethical dimension) would strengthen possibilities for leaders to direct technology change.

Proposition 3.3: Leadership has become a practice of enframing.¹⁹

When existential technology–mediated change is considered only from a cartesian or anthropocentric plane, leadership is open to becoming a technology of enframing.

5.4 Research: Next Steps

Each concept and proposition has exposed potential shortcomings in leadership practice in the manner leaders guide technology–mediated change. As the concepts help clarify, there is no stable ground for leaders from which any certainty for technology decision-making is possible. The propositions link to the concepts; they also point to opportunities for leadership to develop

¹⁹ Enframing is a Heidegger term that is explained in chapter 6

a deeper appreciation for the ‘existential’ aspects of technology change, which is an important component of the research question.

To satisfactorily address the research question, a return to philosophical roots is needed. Building from chapters 3, 4 and 5, the thesis now proceeds as follows:

Chapter 6 provides philosophical depth, specifically an ontological perspective relevant to the research question.

Chapter 7 provides a discussion of the research findings, enables answering the research question and reflects on the implications for public-sector leadership practice.

Chapter 8 draws the work to a conclusion.

These sections will aim to show that, while ontological depth in leadership practice is rare, there is value for leadership to include such an orientation into leadership practices.

5.5 Chapter Summary

The chapter has summarised the research findings into concepts and presented them in a model followed by an explanation of each concept. The model draws together literature and public-sector leadership practice to present the confused, ambiguous and uncertain circumstances leaders express that limit their ability to guide technology change. Several propositions linking the concepts have been explained.

Chapter 6: Philosophical Groundwork

The conceptual model reveals several concerning trends as leaders grapple with technology change. The existential nature of this change and the ethical uncertainty that exists, provide justification for further investigation.

This investigation proceeds as follows. Part A of this chapter positions thinking into ontology while part B applies an ontological filter to technology, ethics and leadership. Part C presents the value of including this perspective in leadership practice.

Although at times difficult to interpret, Heidegger's writings on technology are of particular value as he presents a controversial critique of existential aspects of modern technology. Therefore, this chapter leverages Heidegger's work alongside that of contemporary philosophers, specifically those who describe technology mediation. This is done to explore the philosophical underpinnings that are present in the conceptual model and contribute to answering the research question.

6.1 Part A: Ontological Ground

Part A provides a justification for, and positioning of, an ontological inquiry within the landscape of contemporary philosophy of technology.

6.1.1 Introduction

Public-sector leaders appreciate the magnitude of technology change and they are uncertain of their ability to ethically guide this change. When asked if he thought technology was changing the nature of being, one public-sector leader indicated, *"Yeah - I do, I really do, and I don't know if that's a good thing or a bad thing"*. However, as these leaders are also technology decision-makers, an 'I don't know' response, while honest, suggests that there are limitations within their leadership practice making it valuable to explore the source of these limitations.

The material in this chapter develops an argument that meanings and tools that leaders have adopted and taken into their practices, that also help define those practices, exhibit a diminished and deprecated understanding of the ontological structures of their 'essence' and of technology in particular. The argument will also claim that this deprecated understanding is one possible underlying source of the limitations leaders have expressed in guiding technology change.

An ontological understanding is used as a basis for this argument and to show that the knowledge of the soil, the existential ground required to address the research question, has been pushed into the background, remaining ambiguous, and largely is absent in leadership themes, domains and conversations. Its absence contributes to the teleological confusion that public-sector leaders have about the technology future.

Leaders interviewed have also expressed ethical uncertainty, therefore providing added justification for philosophy to inform practice. Strong (2000) observes that technologies often reveal the need for philosophy and such thinking does not require a higher degree of intellectual exertion (Kaufmann, 1975). Instead, thinking can be directed to a different point of origin, allowing differing meanings to emerge (alongside existing meanings and treated with equal respect). From this, a wider spectrum of interpretation is possible and different or unusual patterns of intelligibility become visible and able to be assessed for relevance.

6.1.2 Philosophy of Technology

The philosophy of technology is a relatively new branch of philosophy compared to the philosophy of science (Ihde, 2004; Mitcham, 1994). Distinct positions are evident within the philosophy of technology, which are presented in this subsection.

Mitcham (1994) conceptualises technology philosophical perspectives as they have evolved: as objects (ontological), as knowledge (epistemological), as actions (practical), and as volition which, for Mitcham, are associated with power, teleological, ethical, and aesthetical concerns (de Vries, 2016). Taking a differing view, Coeckelbergh (2019) provides a contemporary reflection on different dimensions of the philosophy of technology. He describes these as phenomenology and hermeneutics, postphenomenology and material hermeneutics and mediation theory, critical theory and feminism, and pragmatism. Coeckelbergh (2019) writes that Floridi takes an information turn and, for Floridi, a philosophy of technology becomes a philosophy of information. These philosophical perspectives acknowledge an underlying desire by authors to explore what they consider to be the essential place technology and information has in human existence, deserving of philosophical thought.

Phenomenological accounts that evolve from ontology provide suitable positioning for addressing the existential aspect of this research and are also appropriate for further investigation of the H–T–W relationship. Blattner (2006, p. 27) raises a concern that phenomenology, as a study of entities as they present themselves, is not necessarily suited to

ontology (as a study of how entities actually are). Regarding being, however, Blattner notes that being is not an object, it is a meaning structure that is latent in any experience of anything and therefore needs to be studied in the way meaning of phenomena is studied, that is, phenomenologically.

Husserl and Heidegger sought a phenomenological account of being-in-the-world and in doing so they recognised the deep entanglement of the H–T–W relationship. Heidegger's account of the essence of being (what it means to be), influenced his later writing concerning technology, so his account of technology is also rooted in his explanations and concern for, being.

Whether it is articulated from the outset or whether it remains largely hidden, leadership and ethics are also and always, built on a particular ontological way of being in a H–T–W relationship. An ontological approach seeks to understand phenomena in manner that reveals how things show up as meaningful, what brings them into presence with the meanings and purposes they have. Its task is not to resolve any conflict or discrepancy that may appear and for the purposes here, ontology is a point of origin for thinking and way of revealing and describing the entanglement of humans in their world with technology.

6.1.3 Ontological Exploration

The preceding chapters presented the H–T–W relationship as inextricably fused. Human existence is an existence with things, which can only be escaped in death. But humans are not things and things are not humans. They do not merge at an ontic level. Things mediate human acting and experiences in the world. To be, is to be in the world with things and this is also and always 'doing in the world', creating and mediating ways of doing, involving learning, skills and habits. To be and to do is to always be bound to the ontological roots of being.

Heidegger's approach towards ontological understanding was to be clear about the nature of an entity, such understanding being essential in order to deal with it appropriately, regardless of the kind of entity one is dealing with. For example, it is necessary to understand what a garden is in order to be a gardener and to be able to consider and appreciate the task of gardening in any meaningful way. The gardener does not actively grow vegetables. Vegetables grow and come into presence on their own. The gardener creates the conditions (provides water, light, soil, skills and expertise) for the ongoing activity of vegetables to be what they are. Vegetables reveal themselves. To be truthful and authentic as a gardener requires knowing

the essential nature of those entities a gardener is in the world with, enabling those entities 'to be' what they are.

Thomson (2005) noted that Heidegger rephrased the philosophical question "what is an entity", which was considered a form of asking about being, to be understood more precisely as "what is the being of entities". Consequently, the distinction between being and beings is central for Heidegger and a forgetfulness of being that occurs in Western philosophy amounts to the removal of this distinction. Heidegger has tried to 'recover' being and provide a point of entry into understanding of being from a primordial, beyond traditional metaphysical position. He considers metaphysics' inability to recognise what gives rise to itself. Rubenstein (2013) notices it is being that allows being to be and Heidegger (1962) explained that metaphysics as an inquiry into the being of beings has over time disregarded being itself (Korab-Karpowicz, n.d.) and as a result, being itself has taken on a diminished understanding (if recognised at all).

Heidegger and others that have followed, such as Idhe and Verbeek, by taking an empirical turn to understanding the H-T-W relationship, examine the phenomena of humans, with things, in the world. These thinkers conclude that there is a co-constitutive relationship with humans and what they encounter, and the manner that entities present themselves, and how they show up as meaningful (what brings them into being). They consider the seemingly obvious detail that humans are the sorts of entities humans are in so far as humans go about activities in the world. Put differently, to understand ourselves is to acquiesce in the world (Blattner, 2006). Heidegger argues that forms of comportment and practices arise out of contexts and are not abstract and created separately to experience. Any form of cognitivist or cartesian explanation of the world would never be fully 'representative' of conditions, in other words, rational judgement is never completely accurate. For example, leadership or ethical decisions considered in terms of rationality, in which judgements are made through reasoning about the validity and appropriateness of principles or rules, does not account fully for expertise that is experienced ready-to-hand.²⁰

According to Dreyfus and Wakefield (2014) an ontological view does not deny human beings have mental states that direct human minds towards objects. Rather these authors suggest that

²⁰ Heidegger uses the terms ready-to-hand and present-to-hand to explain attitudes of being in the world that are prior to (more basic than) science or a cartesian mind/world dualism. Ready-to-hand experiences occur when humans simply use equipment to carry out a task. They are paying attention to the task, not the equipment; the equipment is concealed. Present-to-hand experiences occur when humans pay attention to the equipment, when something has maybe gone wrong i.e. the equipment has broken. These experiences emerge from the prior attitude in which humans care about (show concern for) what is going on.

“ontologists assert that mental states presuppose a context in which objects can show up and make sense, so that the context both opens up and limits the kinds of objects that can be represented or can be dealt with directly” (Dreyfus & Wakefield, 2014, p. 171). That context is not a representation in the mind and thought about objectively and rationally, rather, it is embodied in social practices (tools, technologies, language, institutions and cultures). The presupposed context brings the possibilities for objects to show up not as facts or mental representations, but rather with things as already present with meaning, understanding and purpose.

This is made evident with Heidegger’s concept of ‘thrownness’ (Krentz & Malloy, 2005). He argues that humans are ‘thrown’ or thrust into an already existing world. Humans are pre-tuned to a perspective (a set of social practice or script), as a person might tune a TV or radio to a particular frequency, to orientate, to bring reality into being in some way. King (2015) writes that the world is like a projector screen, without which a movie would not be possible. Similarly, ‘to be’ (being) would not be possible if it were not already projected. ‘To be’ is discernible when humans are in the world and as they are in reception of it, it only happens while the movie is playing.

Thus, in designing technology humans are designing within the arc of a script (a pre-tuned frequency) being limited by, knowingly or not, the possibilities for action and the orientation within the H–T–W relationship. And in designing things, humans design themselves (Verbeek, 2011) within the arc of the script. To adjust or correct is also within (and therefore constrained by) an already ‘thrown’ script.

Technicity is an example of such a script. For leaders who are caught in the movement and excitement of possibility (the narrative of a technology script), technology change easily becomes the solution for the problems it creates (Saul, 1993). The comfort for technology as solutions for technology problems was reflected by the leaders interviewed.

Already existing and understood shared practices into which humans are thrown provides a background understanding of what counts as entities, as people and their meaning and significance within that context, and ultimately helps determine what counts as real. Heidegger calls this background understanding of what it means-to-be, an understanding of being (Dreyfus & Wakefield, 2014). This understanding of being, creates what Heidegger calls a clearing. The clearing is not a thing of itself. It is an illumination and each person has his or

her embodied understanding (Dreyfus & Wakefield, 2014) of what accounts for real within their orientation, in their clearing, of what is being illuminated, embodied and is present.

Once an orientation, such as technicity, becomes a dimension of the background of all experience, it may move beyond awareness (Dreyfus & Wakefield, 2014). Dreyfus and Wakefield explain how that creates difficulty for change. Once a story becomes a dimension of the background of all experience, a person is unlikely to experience anything else that could cause him or her to change a one-sided way of relating to other people and the world (Dreyfus & Wakefield, 2014, p. 172).

The meaning and orientation humans ascribe to technology, ethics and leadership occur within this transparent background, given momentum and a trajectory within the script. Identity and character also form within this backdrop, as do ethical comportments. This is the point made mentioned above by MacIntyre (2007, p. 216) when he considers, “Of what story or stories do I find myself a part?”, where an ontological perspective gives rise to a prior question, “how am I to be within the context I find myself”, which requires an engagement of humans in the context and background in which they find themselves and how the relevant dimensions or stories arise as meaningful and are illuminated (through the luminosity of the clearing).

“Pedagogical truth events” is the term used by Thomson (2015, p. 186) with reference to what is required to reveal the background. Such events occur when humans cope creatively and mindfully within the friction and tension of happenings. Thomson suggests the fidelity of such truth events requires creativity, a letting be, rather than imposing a shape or form. This ontological consideration that is prevalent in Heidegger’s concern for truth is highly relevant for the leadership considerations of this research.

Background and consideration of what it means to be (being itself) are not static. Thomson (2005) explains how Heidegger believed the nature of being had changed over a period of different ontotheological epochs. In other words, the nature of being has been transformed and, as Thomson points out, Heidegger believed it is currently being transformed within a technology-dominated epoch. In such an epoch, to understand being also requires a consideration of the essence of technology, not only of technology’s ontic properties.

That understanding can be provided through an ontological inquiry. For the purposes here, it begins to expose and make better sense of those forces and realities that give rise to meanings in metaphysics, technology, ethics and leadership. In Figure 9 below, being is represented as

soil (Rubenstein, 2013), the ground. Although often unnoticed, soil conceals itself in the ground, in its being.

Figure 9: Ontology: Soil: the ground of being – concealed in its being (Rubenstein, 2013)

Being is not immediately evident from positions of technology, ethics and leadership, and if, as Heidegger argues, metaphysics has disregarded being, being has been forgotten and, citing Rubenstein (2013), does not have the ability to account for what initially sets it in motion. The dashed line on Figure 9 represents a disconnection from (to be cut-off-from) the ontological soil that will result in a diminished appreciation of the H–T–W relationship.

Findings from interviews note the confusion, uncertainty and ambiguity faced by leaders guiding technology change. Are these circumstances a result of being cut-off-from, or from having misplaced along the path of history an ability to interpret what brings an entity into presence, or of a lack of any adequate response to Heidegger’s question, “what is the being of entities?”. Heidegger was concerned that, without understanding clearly the H–T–W relationship, this exposed the possibility for a diminished, inauthentic engagement in the world, and, in a technology epoch, to “warp, confuse, and lay waste our nature” (Heidegger, 1966). If leaders do not have any appreciation and concern for this, who has?

6.2 Part B: Technology, Ethics, Leadership: An Ontological Perspective

An ontological filter is now used to explore, in familiar order, technology, ethics and leadership.

6.2.1 Technology

To recap and extend earlier chapters, an account of the H–T–W relationship of humans being in the world with things, philosophical insights into the role of technology can be positioned as instrumental (technology as a tool), a construction (technology as a part of human anthropocentric social construction), or as a phenomenological relationship (humans and technology as co-constructed from the very beginning) (Introna, 2017).

When technology is considered with an instrumental position, things take on a cartesian perspective of subject and object, or of a disengaged knowledge, separate from the body, where the world exists ‘out-there’ and is able to be reasoned about and controlled. Often this results in seeing the world as a resource to be optimised and made efficient.

An anthropocentric position with humans at the centre is the particular way the world discloses itself as meaning ‘for us’, as disclosed for humans. Technologies are tools ‘for us’ and the questioning of technology reflects the technological impact ‘on us’. Technologies are a resource for humans where humans give everything the meaning it has. Meanings are moulded and shaped by humans and for humans.

A description of the phenomenological position is nicely shown by Weick (1999) in his research of firefighters. Weick notices that many firefighters who die in fires still have their tools (technology) in hand yet dropping their tools would enable many to reach safety zones. After many years of researching why firefighters die in fires while holding their tools, Weick makes an odd conclusion: they had no tools. Weick argues that firefighters in danger of death still see their project as fighting fires, not as survival. They see themselves, their identity, as firefighters. An important point Weick makes is that their tools are a part of and confirm that identity, which he argues is why they often refuse to drop them. Better to die as a firefighter than being in a project of survival. Even when circumstances call for an urgent adjustment, to drop tools may mean to discard an identity. In this light, identity can be seen as an ontological orientation that is being established within a particular space and time, in a place where the things in that relationship in the world play an important part in providing the possibilities for identity emergence and what it means to be in a particular practice.

A co-constitutive nature of being in the H–T–W relationships, when understood ontologically, differs sharply from an anthropocentric or subject–object position. It reveals humans as thing-mediated beings or, as is more frequently expressed, technology-mediated beings. Bailey (2014, p. 56) acknowledges this ontological influence as evident in “delimiting how we understand ourselves”, and where the potential for understanding is preconfigured by the scope of what can be disclosed to it. Thus, “technology, by delimiting and projecting understanding of our own nature, preconfigures its own appearance” (Bailey, 2014, p. 56).

The co-constitutive phenomena of being in the H–T–W relationships is expressed by Ihde (1990) when describing how technology alters perception within embedded, hermeneutic, alterity or background relations with technology. Verbeek (2005) sees these relations as expressions of mediated entanglements and that the mediated experiences humans have with technologies are not fully explored and often overlooked.

Heidegger provides such exploration in his important essay “The question concerning technology” (1977b). His desire to present a phenomenological account of modern technology is particularly valuable given his point of entry is understanding from a primordial (always in being), non-traditional, beyond metaphysical position. Ihde, Verbeek and others (Ihde et al., 2015) thought that Heidegger’s view of technology was overly pessimistic, missing possibilities for technology to enrich the H–T–W experience. Dreyfus (2004, p. 25) however points out that Heidegger’s ideas on technology were “so radical that everyone is tempted to translate it into conventional platitudes about the evils of technology”. Whether disagreeing or agreeing with Heidegger, authors are paying attention as they, too, like Heidegger, considered that instrumental or anthropocentric explanations of technology were incomplete and did not accurately describe the lived experience of being in the H–T–W relationship.

In Heidegger’s account of modern technology, technology is nothing technological, rather “Technology is a mode of revealing” (Heidegger, 1977b, p. 13). Technology is a challenging claim where “challenging gathers man into ordering the real as standing reserve” (Heidegger, 1977b, p. 19). Heidegger names standing reserve as ‘Ge-stell’, translated to ‘enframing’ (Heidegger, 1977b, p. 19). Enframing demands that nature be orderable (Heidegger, 1977b, p. 23). Heidegger provides an example when he writes “The work of the peasant does not challenge the soil of the field” (Heidegger, 1977b, p. 15), which he then contrasted with modern agriculture (technology) where the “air is now set upon to yield nitrogen, the earth to yield ore, ore to yield uranium...uranium set upon to yield atomic energy” (Heidegger, 1977b, p. 15).

“Enframing not only conceals a former way of revealing, bringing forth, but it also conceals revealing itself and, with it, that wherein unconcealment, i.e. truth, comes to pass” (Heidegger, 1977b, p. 27). Heidegger repeats similar statements to amplify his argument that:

- a) the essence of technology is nothing technological,
- b) technology is a way of understanding the world,
- c) technology is a mode of revealing,
- d) in modern times, technology reveals itself to be enframing,
- e) enframing challenges to order, where the world (how it is presented in its truth) is a stockpile of resources on standing reserve,
- f) enframing conceals all former modes of understanding the world,
- g) enframing conceals itself as a mode of revealing, and
- h) as such, enframing blocks the possibility for other ways of understanding the world.

The extent and concern of enframing (and its relevance to this research) is made evident by Bailey (2014) in a discussion of transhumanism. Bailey writes:

“extension of the reach of enframing to our bodies and even our consciousness is momentous in that it extends enframing to our own embodied identity while simultaneously altering our relation to our own finitude and mortality”. (Bailey, 2014, p. 52)

Baily is describing conditions where the human body and even consciousness become ‘standing reserve’. Bailey argues that when these aspects of humans become technologically modified, they also run the risk of becoming commodified.

The internet or other 21st century information technologies were not a part of Heidegger’s world. So using Floridi (2005) re-ontologising information states as an example to extend Heidegger’s claim of enframing a step further, humans are no longer ‘standing’ or even ‘on reserve’. As Floridi (2005, p. 189) suggests, modern information realities transform users so that they have the ontological status of informational entities. With Floridi’s help, re-ontologising the H–T–W relationship, would be reconfigured as human-information-world (H–I–W), or just information (I) where the value and agency of human or other entities are derived from their role as information entities. Enframing is also much simpler when it does not involve a body. Presumably technology (T) becomes entirely transparent hidden inside a ubiquitous black box.

As presented in the literature review discussion regarding technology mediation, identity is packaged and commoditised (Zuboff, 2019b), incorporated into a dataset, where value it has is based upon what we are, where we are and what we do (not who we are); tracked through those actions that create, change or consume data (identity being re-ontologised). While Agar (2019) makes the observation that users often see information they create, change and consume as digital ‘exhaust’, his discussion of ‘value’ or worth has a deeper point in that, ontologically, humans are revealed (and therefore open to be valued) as information organisms.

In the event that humans become entirely enframed as standing reserve (or repackaged and enframed as information agents), Heidegger suggests that humans may have reached a stage of nihilism, that humans revealed as information resources in a technology epoch are close to a final stage of evolution, and that nihilism must be an acceptable ‘price’ paid for such a state. Heidegger also indicated that arising from enframing was also a saving power, as he cited in a Holderlin poem: “But where danger is, grows the saving power also” (Heidegger, 1977b, p. 28). It is in this “extreme danger that the innermost indestructible belongingness of man within granting may come to light, provided that we, for our part, begin to pay heed to the coming to presence of technology.” (Heidegger, 1977b, p. 32). Argued in the research is need for leaders to ‘pay heed’, however, if technology conceals the meaning of existence, or enframes existence in technology, the likelihood is that it also limits and provides a shallow understanding of ethics and leadership, especially if it loses touch with its ontological ground.

6.2.2 Ethics

Ethics appear in many domains, such as ‘ethical leadership’, ‘bioethics’, ‘environmental ethics’, ‘business ethics’, ‘medical ethics’ and others. Such ethics are synonymous with “doing the right thing” within a specific domain, and seek common values and principles so that ethical meanings are easily interpreted, thus providing an ordering to reality where those that inhabit a domain can ground their behaviours and actions. Such ethical meanings do not typically begin from an ontological point but, rather, a metaphysical one.

Phenomenologists, possibly trying to avoid any reduction in their explanations of experience, pay little attention to practical ethical guidelines given the deep moral issues that they often uncover. For example, Artemenko (2016) points out that there is considerable controversy combining Heidegger and ethics, as authors (Artemenko, 2016; Benso, 1994; Elley-Brown & Pringle, 2019), who attempt to extrapolate an ethics from Heidegger’s work, explain that such an undertaking was never his intent.

Introna (2017) shows how instrumental, social constructivist, and phenomenological approaches to entities shape different ethical orientations. The instrumental perspective sees humans as separate to things, enabling their ordering, where the task of ethics is often the regulation of the impact of things on humans. Where humans are not separate from this process of ordering, where, in ordering, humans also become ordered, the fate of objects may become human fate, and instrumental ethical responses applied to humans.

From a social construction perspective, the task or focus of ethics is to bring into awareness human values, assumptions and interests that are designed into the technology and the role of humans in that task (Introna, 2017). With humans at the centre (the anthropocentric orientation), ethics becomes another ‘tool for us’ and is seen as a form of utility.

The phenomenological perspective, as an ontological one, is to disclose the way technologies and ethics show up as meaningful in the first place, to problematize and question the mediating role of technology. From this position, ethical questions are ontological; that is, “what sort of world or way of being are we becoming, as opposed to the sort of world we value and want?” (Introna, 2017, p. 14).

Introna (2017) suggests that fundamental ethical choices may only become visible from a phenomenological point of view, where the understanding of ethical issues in the H–T–W relationship is aided through an understanding of technology mediation. Introna is well-supported by Verbeek (2005, p. 216), who makes it clear that “ethical reflection cannot take place adequately if it ignores the moral valence of things”, where a phenomenological account of the H–T–W relationship is able to make visible the role technology is playing in shaping morality.

Introna (2007) also suggests that these different perspectives give rise to ethical confusion that is caused through an increasing separation in the H–T–W relationship. This grants legitimacy to an assumption that the technical and the social are ontologically different, where humans, tools and the world are separate. He suggests that a means-ends distinction forms, which hides ethical and political dimensions of technology as well as where ethics and politics of technology are often located. Introna (2007) suggests that if policy and debate are informed from this ‘split’ view, it gives rise to an ethnocentric balance of rights and values that, in turn, reduces or eliminates the exploration of other possibilities and, potentially provides room for certain stakeholders and leaders to ignore or, conveniently, not consider the full ethical reach of their innovations.

Also noting the ethical confusion and teleological ambiguity that arise, MacIntyre (2007) raises the important related point that, devoid of clear ends, or if ends are opaque (they are hidden within a technology black box), moral claims cannot be attributed. Griffin (2002, p. 193) points out that this can lead to instrumentalising (placing intentions inside the black box) and, citing Mead (1908, p. 315), believes that the “moral interpretation of our experience must be found within the experience itself”; it makes little sense to consider intentions are complete from an observation of the black box.

Similarly, how humans legitimise what is understood to be a moral or immoral act can only be fully understood by the participants within the interactions, as that is where they emerge and have meaning (in the H–T–W relationship). Further, the situatedness and embeddedness within the interactions of the actors are often temporal, ambiguous, complex (as the public-sector leaders express) and distributed. They may occur within different technology interfaces embedded in complex algorithms that even the creators and authors do not fully understand. This further complicates any ability to theorise and adds ambiguity when designers embed morality into technology. While this has been debated by many authors (Floridi & Sanders, 2004; Moor, 2005; Stahl et al., 2017), chances are that, unless specifically considered and directed by leaders, ethical outcomes will be constrained by existing practices.

Reflecting Heidegger’s concept of ‘thrownness’, ethics and moral rules are bounded within the meanings and context that is already present and is not created each time from the beginning. Similarly, in human encounters with things, humans have already chosen, or presumed, the framework of values that will count in determining moral worth (Introna, 2003). Humans position themselves within this pre-existing hierarchy of values and explain and make sense within that hierarchy. The position taken is relative to other positions within that hierarchy and creates tension (in practice, the tension is made real when it hurts and causes pain, often emotional), something to push against and resist that exacerbates the position, contributing to and reinforcing existing understanding, values and meaning within that particular ethical comportment. This resistance will tend to a direction (provide a trajectory) and, over time, some ethical positions will be favoured and become prior, others will be less evident, while still others will remain hidden.

Where this direction rests upon a limited metaphysical foundation, ethical comportments with things occur in terms of entities already showing up in certain ways (not in an original ontological manner). In a technology epoch this leans towards those practices that are already

technological (Heil, 2011) where it makes sense for ethics to be presented through rules or utility. Alternatively, Benso (1994) suggests that when ethics is considered in light of being (ontologically), ethics, as rules or utility, are seen to be limited and are a response, where the H–T–W relationship has become disoriented.

This may seem confusing, given current understanding of ethics. If ethics comes closer to ontology, what is more in frame is not human beings, but being itself. The question of ethics can then be seen alongside existing ethical meanings, where ‘what is the right thing to do’ can be complemented with ‘what is the right way to be’ or ‘how can my being be, to its fullest possibility, reflective of its essence?’. An ethical comportment, ‘what is the right thing to do’, that does not also consider, ‘what is the right way to be’, or, within the H–T–W relationship, denies that of other entities, would arguably be acting unethically.

Any starting point for an ontological ethics would be in being. Seeking guidance of this matter from Heidegger, Heil (2011) notices that Heidegger looks instead to understand ethos, the word ethics is derived from. For Heidegger, ethos is not about rules or character (its more modern meanings), rather ethos means “abode”, or dwelling place. Heidegger (1977a, p. 233) explains that “The word names the open region in which man dwells. The open region of his abode allows what pertains to man’s essence, and what in thus arriving resides in nearness to him, to appear”. Heidegger would suggest that ethos remains open to the truth of being, open to its essence.

Relating ethos to technology, a principled stance of ‘how might I use technology’ may be complemented with “how might this technology mediate who I am, how I dwell (relate in the H–T–W relationship) and how I am responding, in this context”. This is an example of Heidegger’s consideration of a free relationship with technology where humans remain open to new meanings in technicity, which reflects an ethical comportment that is significantly different to ethical stance that rests upon a metaphysical orientation of ordering and control.

There is a task for leadership to understand and disclose how ethics is embedded in the relationships with things in order to fully understand technology mediation and to ethically integrate technologies into modes of existence in the H–T–W relationship, requiring these individuals to acquire a phenomenological understanding of the role things play. If political and policy responses to technology-mediated ethical issues remain hidden, or only understood within the cartesian and anthropocentric plane, then leaders have a narrow, diminished understanding of the H–T–W that will limit their ability to ethically guide technology change.

6.2.3 Leadership

In a similar way that ontology may orientate ethics, it is also relevant for a discussion of leadership. Such a perspective provides a way to consider how leadership ‘shows up’, how it is disclosed and the ethical compartments that are embedded in a leader’s relationship with the world.

Ciulla (2014) argues that much leadership shows up as instrumental, reflective of a subject–object engagement, often an outcome of a cartesian understanding of the world where the instruments of leadership provide forms of control believed necessary for organisational coordination.

Servant leadership (a largely anthropocentric perspective) makes followers central to leadership practice. In seeing that other forms of leadership, such as transactional leadership, often involve a hierarchy, an accumulation and exercise of control applied by those in senior leadership roles, the servant leader practice places the needs of followers first and helps followers develop and perform as highly as possible (Greenleaf, 2002).

For these forms of leadership, as they are written about in contemporary literature, leadership is something that exists separately from the organisation, typically embodied in an individual. In a sense, it is an embodied tool that is ‘applied to’ and is not perceived as a manifestation of a co-constituted H–T–W relationship. Instrumental and servant leadership are also seen as action that is subsequently measured through performance. For these forms of leadership, action means causing an effect within an organisation, with the actuality of such an effect then valued according to its utility; for example, as the achievement of strategic goals, the performance, or engagement levels of the employees (Heil, 2013).

It is useful to consider, phenomenologically, the meanings that emerge from the artefacts used in contemporary leadership such as strategy setting, vision and value setting, and culture creating. While valuable, these are artefacts that the leader brings from outside as a result of their individual interpretation of the current meanings of leadership practice. Paying attention to what is revealed because of their use, demonstrates the meanings inherent in the practice. For example, leaders may impose values as guidelines for establishing standards of ethical behaviour into their organisations. Heil (2011) believes this response suggests that “nothing is inherently valuable anymore and the talk about values is a technological attempt to bring back value into a totality that itself is entirely meaningless and devoid of genuine value”, and he goes on to suggest, in Heideggerian fashion, that “The talk of values is consequently the

clearest indication of the absence of genuine value and the growing nihilism of technology within the corporate ‘world’” (Heil, 2011, p. 108). He also suggests that where leaders believe values to be important and need to be imposed, they become something that is only revealed in terms of securing and ordering (enframing). It may also be that intrinsic values are present, but the leadership is unable to reveal them, implying that current practices and tools are inadequate.

From an ontological perspective, such action, however, is not leadership. Rather, this action represents a need for ordering. Ontologically, the nature of leading is an engagement in accomplishment. ‘To accomplish means to unfold something into the fullness of its very nature, to lead it forth into this fullness’ (Heil, 2013, p. 69). Heil (2013) notices that when considered ontologically, leaders gather entities in an H–T–W relationship, bringing them forth into a world, often labelled as an organisation, where they establish meanings and purpose.

Ontologically thoughtful leadership highlights a point made by Anaïs Nin (1979) who writes, “We don't see things as they are, we see them as we are”, where a leader provides space for others, the opportunity to create and engage in the context that they see (not what the leader sees) of the situation they (not what the leader) are in. In this way meaning is being influenced, not transformed or transacted, within the specific context in very specific ways. This will be an intersubjective meaning and will be of a kind that is genuine and authentic, as a person’s way of being, and their actions are correlated directly with the way in which what they are coping with occurs and is showing up authentically for them.

The leadership practice of decision-making, understood phenomenologically, is an act of interpretation rather than choice (Tsoukas, 2018), where actors practically cope with the familiar in non-deliberate ways as the situation appears (‘ready-to-hand’). When the familiar breaks down, deliberate coping and reflecting take place and practitioners cannot rely on their non-deliberate acting, as something unusual has occurred that requires reflection. Tsoukas (2018) through citing Weick (1995), highlights that decisions are often made retrospectively and decisions reveal earlier choice, the choice that seems plausible. Tsoukas (2018, p. 22) writes, “We intend to see intentionality and we retrospectively find it or, more precisely, construct it and make it the determining factor of human actions.”

This phenomenological perspective unsettles the contemporary ideas that decisions and strategy can be made with certainty in advance and that there are always possibilities for a leader to consider what the right thing to do is and to be rewarded when circumstances turn out well. This describes a self-reinforcing need for leadership to retain the existing narratives of

leadership. Alternatively, Weick suggests that “leadership lies in large part in generating a point of reference, for both leader and follower” (Weick, 1995, p. 50) as it helps to draw attention to cues from which sensemaking can take place. This often-overlooked phenomena of leadership is also noticed by Smircich and Morgan (1982, p. 261) who write:

“The actions and utterances of leaders guide the attention of those involved in a situation in ways in which they are consciously or unconsciously designed to shape the meaning of the situation”.

The meanings are already a part of the background where leaders place some meanings prior to others. For example, justice may be considered prior to care, or technology efficiency prior to technology existential change. If such placement is not ethically neutral, then placement is also doing ethics.

Maxwell (1998, p. 11) believes that “leadership is influence, nothing more, nothing less”. However, as Goleman (2013) argues, that influence occurs through how attention is directed and patterns of meaning established. A leader’s framing (Fairhurst, 2011a, 2011b) of an event or a technology is necessarily biased towards their propensity, knowledge and ability to consider ethical and mediating factors. The resultant combination of circumstances and meaning-creation give intent and purpose to a group, through the direction of the leader. Those aspects that are most salient and context-specific for the leader (how the world is showing up and the leadership identity a leader identifies with), have significance, they are the antecedents of meaning and action.

This aspect of leadership highlights its influence on how meaning is shaped, how it is revealed in an ongoing iterative manner (Maitlis & Christianson, 2014). Particularly in circumstances of uncertainty, reason and fact give way to plausibility, accessible and consensual validity (Weick, 1999). With closer attention to the mediating realities (including technologies), accuracy increases. The actions and utterances of leaders frame and shape where to look: the context of action and, consequently, when considered within the H–T–W relationship, will help define the technology-mediated reality of those they lead.

Leadership as establishing a shared vision or modelling the way (Kouzes & Posner, 2007) have an instrumental character and are often detached from the H–T–W relationship where they are practiced. Such tools are exposed for the value that they bring: getting started. This is conveyed by Weick (1995) in his example of lost soldiers that used a map to navigate their way to safety, only to later find the map was for a different region. Having a working plausible frame, space

and room to interpret and act: an imperfect map is good enough. The implication is that in the ongoing temporality of dealing with the complexities of technology, sense-making is effective, at least as important as decision making, because it helps to suspend judgement while meaning is uncertain. Strategy and vision-making as leadership tools give way to interpretations of the H–T–W relationship.

Connecting concepts of ontology and the embodied practices of leadership, Ladkin (Ladkin, 2010; Ladkin & Taylor, 2010) draws attention to Merleau-Ponty's concepts of 'flesh'²¹ as a way to consider the embodied space between leader and follower (an anthropocentric perspective) 'in constituting the relationship', opening a space for a moral relationship that becomes significant and requires attention. Ladkin writes:

"that although the in-between space is completely dependent on the entities which constitute the relationship, that relationship has a dynamism which is more than just the combination of entities which comprise it. The interaction itself has a life of its own" (Ladkin, 2010, p. 72).

While Ladkin might be more precise in suggesting that the interaction has "a meaning of its own", she is pointing out the need for leaders to observe the dynamism (the 'life of its own'), and those meanings arise in the 'fleshiness' and embodied experience. Like many leadership authors, she does not account for the things in that relationship.

The tools carried for leadership (position, recognition, strategy setting, decision making privilege, resource control, responsibility, vision and value setting, culture creating) have become an important part of the 'ready-to-hand' identity of leadership. They help establish the conditions through which leadership identity emerges and, like the firefighters' tools, are not easily discarded, because they are not seen. These tools bind leadership to an identity, which ties to an understanding of self and what it means to be a leader within the specific context. That self is within a project that is always in the H–T–W relationship, and those tools that are tightly bound into, and form and direct, those ways of engaging and coping in the world.

In ontological terms, it would be inauthentic for leadership tools to contribute to leadership practice that considers humans as resources to be transformed and aligned to corporate values

²¹ 'Flesh' is the source of humans being in the world as well as the medium through which humans experience the world. In that sense 'flesh' has an elemental and foundational dimension out of which all experience are formed (Ladkin, 2010, p. 65).

and strategic vision. Where humans are perceived as resources and organisations as structures optimised for performance, and where ethics is perceived as values, indicates the absence of intrinsic value, then these, as structures of meanings, are revealed in terms of ordering. Supported and carried forward within the practices of leadership, these meanings are clear indicators of instruments of enframing.

Where contemporary leadership establishes itself as an instrument for transformation and the outcomes are valued according to utility, performance and engagement, this would reflect a diminished or disoriented understanding of the H–T–W relationship.

6.3 Part C: Leadership: Being in the World

Cartesian and anthropocentric perspectives also give meaning to the world. They ontologise. Yet they reveal a diminished, metaphysical account of being in the H–T–W relations where the primary concern and focus is towards beings, rather than being. If, as Heidegger suggests, metaphysics inquires about the being of beings in such a way that the question of being is disregarded, there would be no possibility for an originary ethics. If being is disregarded this would render impossible an answer to the research question, “How might public-sector leaders ethically guide technology-mediated existential change?”.

Moving beyond a metaphysical account of technology, ethics and leadership, the ontological orientation outlined above provides a different point of origin for understanding the H–T–W relationship. To graphically represent this additional perspective, the cartesian and anthropocentric plane from Figure 6 is redrawn as a reuleaux triangle to include an ontological vantage point, as shown in Figure 10 on the following page.

A reuleaux triangle is formed with three equal-sized overlapping circles, reflecting that each view has valuable and novel ways of interpreting human experience of the H–T–W relationship. Leaders may orientate to different positions on the triangle (seeing the landscape from all hilltops) for making sense and meaning.

Figure 10: Cartesian/Anthropocentric/Ontological Leadership Plane

As presented in this and previous chapters, the manner in which the world is disclosed alters the interpretations of humans with technology and the ethical meanings that are formed in a particular socio-material context. Valuable insights are gained when ontology, making room to move beyond traditional metaphysical understandings, is used as a method to investigate and make sense of the technology, ethics and leadership entanglement. For example, to include an ontological perspective into leadership practice makes possible a consideration of ethics as dwelling and technology as revealing. It also gives rise to the controversial consideration that leadership has taken on, or has become trapped in, enframing.

Close examination of lived experience means to examine how technologies mediate through co-constructive relationships with humans (refer Appendix A for an everyday example). In moving beyond a metaphysical account, truth can be considered, not solely from a human representational reality, as an epistemological manifestation of the world as the way humans ascribe and secure knowledge of entities. An ontological view allows for entities to be revealed in their own truth, to disclose themselves. A relocation, the locus of truth loosens the grip of subjectivation in a cartesian sense. When reflected back onto existing understandings, humans may obtain greater clarity of their current ground, and not be easily enframed in it. As Thomson (2005) suggests, an ‘ontological freedom’ then becomes possible, a stepping out of Plato’s cave, where entities are able to show themselves in their full phenomenological richness and complexity.

The research has shown that New Zealand public service leaders have limited understanding of the ontological influence of technologies they deploy, the ethical orientations that are

embedded in technology mediations and the role leadership has in directing moral outcomes. Using an ontological perspective from which to consider existing leadership practices also provides opportunity to raise questions that may not be visible from within a practice itself. For example, what is the meaning of leadership with these tools? What impact are these tools having on leadership? Why did this particular script show up? Is it still relevant? Should these tools be dropped?

A philosophical justification and background has been provided, however, this has not adequately addressed the ‘How’ aspect to the research question. That is the purpose of the following chapter.

6.4 Chapter summary

This chapter began with reasoning to support the need for taking an ontological account of technology, ethics and leadership. The resulting investigation shows there is benefit for an ontological exploration of the H–T–W relationship, to contrast and complement existing perspectives, thereby providing a broad and philosophically-grounded constellation of intelligibilities for leaders’ consideration.

Chapter 7: Discussion and Implications

The two parts of this chapter proceed as follows:

Part A: Discussion of the research, concepts and propositions

Part B: Outline of the implications for public-sector leaders

7.1 Part A: Discussion

In this section, a recap of the research is presented, followed by a discussion of the findings. The concepts and propositions are revisited.

7.1.1 Research Recap

Recapping the research process so far:

- A literature review uncovered an ontological multiplicity within the H–T–W relationship providing a research gap giving legitimacy to study how public-sector leaders ethically guide technology–mediated existential change.
- Interviews undertaken with public-sector leaders confirm the entanglement of humans in their world with things, where things play an active role in building that world, which reveal a moral dilemma requiring response from those leaders charged with their governance.
- A conceptual model has been developed so that the complex landscape leaders find themselves in becomes visible.
- Further philosophical understanding is gained and used to juxtapose an ontological account of the H–T–W relationship to instrumental and anthropocentric positions.
- Dilemmas of technology entanglement arise from the orientation to technology, which in turn emerge from a diminished metaphysical understanding of the H–T–W relationship.

7.1.2 Discussion

Addressing teleological confusion, ontological ambiguity, and ethical uncertainty, with limited appreciation of the H–T–W relationship in a technology ‘thrown’ epoch, with contemporary leadership practice there appears to be a very real possibility that leaders, for their opportunity to direct technology existential change, will be bound by current practice and tools and that they remain ‘happy enframers’, to use Thomson (2005) term, where technology “drives out

every other possibility of revealing” (Heidegger 1977, 309). An ontological perspective has shown that existential technology change cannot be adequately addressed at the level of autonomous subjects choosing either to use or not use them, or to take a purely human-impact response. Ethical comportments also occur within a diminished account of the H–T–W relationship and, as expressed in the interviews, point to a reason why public-sector leaders remain uncertain of their ability to guide technology change.

Leaders interviewed hold contemporary leadership tools, as ready-to-hand confirmation of their leadership identity. Public-sector leaders stand upon cartesian or anthropocentric ground as the main supporting meaning structures from which to make sense of their life-worlds. They are unlikely to bind their roots into ontological ground. Alienation from the world and from each other appears to be a logical outcome when the role of things and the manner in which they reveal meanings remain concealed. This leads to a technology-led, and leader-supported, impoverished understanding of the H–T–W relationship that is concealed by the practices themselves. Contemporary leadership themes and public-sector leadership being devoid of an ontological perspective of technology mediation limits *how public-sector leaders might ethically guide technology-mediated existential change*.

A diminished metaphysical understanding of the H–T–W relationship may appear ‘broken’ and therefore requiring fixing. This approach would amount to a cartesian response and it makes no sense to ‘fix’ this relationship any more than to consider humans naked of technology. Rather, this situation can be altered through gaining an ontological appreciation of the co-constituted nature of the H–T–W relationship. This amounts to a re-orientation so that understanding (allowing the truth of being to be revealed as Heidegger might write) of being in the H–T–W is not crowded out through cartesian and anthropocentric viewpoints. An ontology re-orientation within the relationship also re-orientates leadership and ethics and provides alternative possibilities to direct technology change. Heidegger and others might argue that any failure to arrive into a different relationship with technology is because of inadequate thinking. It is argued here that leaders are ‘creators, carriers and distributors’ of patterns of meaning and those patterns play a very important role in directing and giving meaning to the H–T–W relationship. Regardless of how precise the thinking, it will be translated into action by leaders, therefore a leader’s role is critically important in any re-orientation.

An ontological view of the landscape highlights that it is not only ‘what technology is’ or ‘what technology does’, it is also what humans do with things in their engagement in the world, with others and with things. Ontology makes it necessary, as a central concern for leadership and its technology innovations and deployments, to understand how things contribute in the H–T–W relationship and how that gathers meaning and purpose into human practices.

Practical implications are that this requires consideration for ways of coping and skilful activity, especially for leaders. This requires consideration for determining the role of a technology, not only as an artefact or tool to assist with the delivery of strategic outcomes, but as a component and expression of world building, how a technology contributes to orienting, gathering and coping in some manner.

7.1.2 Confirming the Concepts

The concepts presented in chapter 5 were: A. Ethical Uncertainty B. Ontological Ambiguity C. Teleological Confusion and D. Leadership Limitations. These research findings support the use of these concepts. The findings show that:

- to engage in a discussion of technology mediation frequently requires an encounter with a multiplicity of temporal, complex phenomena. Such phenomena encapsulate an irreducible difference between incommensurable values, beliefs and normative claims, making the purpose (*telos*) of technology confusing and difficult to determine in advance.
- engagement with technology frequently means to alter experience and perception in a given context or practice (including leadership). As such, technology configures human relations with the world. Technologies ontologise as they bring into existence possibilities for new realities that are often ambiguous.
- technologies mediate morality and the infrastructure for moral decision-making as they mediate the meaning of value frameworks themselves. Considerable ethical uncertainty is evident given the multiplicity and multi-stable nature of technology. The common ethical evaluations of technology that account for the ‘impact of technology’ to be declared as ‘good’ or ‘bad’, ‘in’ or ‘out’ are problematic.
- contemporary leadership themes are limited as they do not consider the deep union within the H–T–W relationship or the two-sidedness of technology mediation occurring across different dimensions. Leaders use few or no tools for technology assessment. Public-

sector leaders' understanding is limited by a metaphysical cartesian or an anthropocentric orientation.

- technology is frequently involved in the constitution of the subject (including the leader) where the social and the technological is a co-constituted, inseparable reality (establishing a sociomaterial contextual space).

7.1.3 Confirming Propositions

Findings from the research are now used to elaborate the propositions. Based upon the research process undertaken, confirmation or disconfirmation of the propositions cannot be complete as the propositions were not validated with public-sector leaders. However, the findings support the propositions in principle. Additional research would be necessary to validate these propositions with leaders.

Proposition 1: Ontological ambiguity amplifies ethical uncertainty

The public-sector leaders interviewed were all concerned about what the right thing to do is. They notice that what has worth and what to show concern for becomes increasingly complex as technologies become deserving of moral concern. They are uncertain if their current ethical reasoning regarding technology-mediated change will be sufficient.

Current moral theories provide limited guidance where ontological ambiguity exists. As in a post-human example, is it ethical to upload human consciousness into a machine? The literature has shown that such questions are difficult to resolve with existing moral theories. Ethical uncertainty amplified by ontological ambiguity is considered by Floridi and Sanders (2004) where moral agency may be apportioned based upon an entity's information state, potentially relocating the centre of moral agency. Verbeek (2016) suggests that in order to reduce ethical uncertainty it is necessary to understand how technologies mediate knowledge and morality, and requires study, not only of the technologies, but also the ways in which humans, and leaders in particular, give meaning to these mediations.

Proposition 2: Ontological ambiguity leads to teleological confusion.

Noted in both the literature and with public-sector leadership practice, is the manner leaders quickly reach for technology solutions for the problems it creates. The means are increasingly seen as the ends. More technology may at times be appropriate; it is how to determine its appropriateness that is being questioned in this research. It has been argued that a cartesian and anthropocentric-directed appropriateness is limited through its metaphysical grounding in

beings, rather than, as Heidegger argued, in being. With ontological ambiguity occurring through being estranged from ontological roots, no solid ground is provided from which to guide a technology-mediated future.

What is being highlighted is that humans pursue existential technology-mediated change without a clear *telos*. Verbeek and MacIntyre capture this dilemma with these questions, “What sort of technology-mediated beings do humans wish to become?” or “what is the purpose of a human being, mediated by technology, if it realises its *telos*?” For example, the public-sector leaders interviewed had very different views and concerns regarding bioengineering their children for various human qualities. They were unsure of the sort of engineered beings humans might become, the basis from which to guide such decisions and how best to address long term outcomes such as inequality that may result.

Proposition 3: Leadership limitations contribute to ontological ambiguity

Public-sector leaders see technology as tools for the achievement of organisational outcomes and are almost entirely focused on the practical dimension and, for some, the political dimension. They have to account for performance, project completion, risk reduction and outcomes. The public-sector leaders interviewed are well-attuned to the security and privacy concerns of their organisations. They pay attention to these concerns.

The findings show there to be limited articulation, by public-sector leaders, of technology mediation or the underlying ontological ground from which mediation is derived. Public-sector leaders are not trained ontologists or skilled in the philosophy of technology, they do not employ ethicists, they are practical individuals. This naturally limits their ability to articulate with clarity the ontological ground and to address the ontological ambiguity that the findings have presented.

Public-sector leaders observe technology initiated existential change taking place yet are unsure what to do or how best to respond. When they do consider existential change, their foundational knowledge structures form along, and arguably are limited by, the cartesian and anthropocentric plane. As influencers of technology change, it is appropriate for leaders to be familiar with what and how mediation is taking place and to skilfully direct such mediation. Phrased slightly differently, technology mediation without leadership becomes blind, technology leadership without knowledge of the multiplicity of technology mediation becomes empty.

Proposition 3.1: Ontological insights will assist leaders governing existential technology change.

The findings provide support for adding an ontological vantage point, as presented in the reuleaux triangle in Figure 10, in order to broaden existing understandings for leaders addressing technology change. With a focus on the phenomena of humans in H-T-W relationships, this vantage point pays particular attention to the mediating role of technology in that relationship.

Proposition 3.2: Leaders understanding the dimensions of technology mediation will assist leaders governing existential technology change.

The public-sector leaders interviewed had no clear knowledge of the dimensions of technology mediation. The findings support a need for leaders to have such knowledge to strengthen their ability to direct technology change.

Proposition 3.3: Leadership has become a practice of enframing.

Enframing is a mode of revealing that ‘frames’ the world as a resource for ordering and control. Do leaders and contemporary leadership themes, or the outcomes that result from their practices (the world as ordered and controlled), demonstrate the practice of leadership as enframing?

If, as Heidegger suggests, humans are currently in a technological epoch, with a technological understanding of being that reveals the world as resource for optimisation, then a practice such as leadership, that forms from that understanding, would inherit its characteristics. The need for ordering appears in the tools of leadership such as strategy setting, resource control and vision and value setting that require managerial control to achieve efficiency and effectiveness. The research shows support for this proposition.

7.2 Part B: Implications for Public-Sector Leadership

The following outlines the implications for public-sector leaders.

7.2.1 Implications for Public-Sector Leaders

The research question implies that there is scope for public-sector leaders to ethically guide existential change mediated by technology. This research has concluded that public-sector leaders have limited ontological appreciation of the H-T-W relationship and this constrains

the range of possibilities to ethically guide technology-mediated existential change. These limitations are embedded in ready-to-hand practices that have become a part of leader identity.

An examination of these practices disclose that the underlying essential meanings public-sector leaders ascribe to technology is not as a mode of revealing, as Heidegger (1977b) suggests. Rather, technologies are instruments to be used for the efficient and effective achievement of strategic outcomes. In a Heideggerian sense, leaders are responding to the claim of enframing and are therefore challenged to value and order resources for their utility. To act primarily within a domain of utility enframes the world as resources, including humans, to be always on reserve and available to be optimised.

There is room to consider that, with humans as technology-mediated beings, human performance should be technologically enhanced and optimised. This would legitimise a desire to bioengineer human qualities for maximum efficiency and effectiveness. Such enhancement may appear as a logical, desirable and most authentic outcome of being 'technology-mediated'. The technology-enframed world would then come close to a true, authentic H-T-W relationship.

This view would come about when there is a diminished appreciation of the H-T-W relationship, for example, where there is only a cartesian or anthropocentric view. Heidegger suggests that any instrumental or even an anthropological definition of technology is untenable and cannot be rounded out by being referred back to a metaphysical explanation (Heidegger, 1977b). Referring back to metaphysics would centre explanations on beings and in this way the cartesian and anthropocentric plane reinforces and supports itself, exacerbating these positions. Heidegger argues that other modes of revealing of what it means to be in the H-T-W relationship are concealed or driven out, and warns this is a supreme danger. Heidegger believed that once open to understanding technology as nothing technological "we find ourselves unexpectedly taking into a freeing claim" (Heidegger, 1977b, p. 26). However, while Heidegger's freeing claim (discussed more below) suggests that through a loosening of the grip of existing intelligibilities' alternative meanings have room to appear (to come forward from the background), it does not prepare for, or move towards, alternative intelligibilities.

In a similar manner that Heidegger (1977b) considered human orientation to technology, this research has observed these same orientations embedded in leadership where meanings of this practices are located along a cartesian and anthropocentric plane. These have become familiar and stabilised, are preserved and carried forward in contemporary leadership and were evident

in the actions of public sector leaders interviewed, and how they perceive their roles. No ontological viewpoint is present to reside alongside existing cartesian and anthropocentric orientated perspectives. Consequently, as Heidegger has shown with technology, leadership practice has a diminished account of the H–T–W relation and cannot be referred back to the metaphysical.

A loosening of the grip of existing leadership intelligibilities opens for leaders’ opportunities to engage in their practice ontologically, not as a form of utility, as transformational leaders or even as servants. This, in turn, provides a possibility for leaders to encounter the H–T–W relationship in a new way and thereby reduce the limitations in their practices and provide alternatives for guiding technology change.

A benefit proposed through the findings of this research arises from considering leadership of technology change from an ontological perspective, to stand on a different hilltop, so that ‘taking a freeing claim’ becomes a possibility that is unlikely through a cartesian or anthropocentric perspective. Figures 7 and 10 have been combined and shown in Figure 11 below. The purpose is to graphically present the opportunity leaders have to add ontological insights to the existing cartesian and anthropocentric meanings.

Figure 11: Including Ontological Perspective

The implication for leadership practice is that this requires an ontological literacy from which to develop phenomenological interpretations of the H–T–W relationship. Gaining such literacy is graphically represented (in Figure 11 above) by a movement of the dots.

It has also been argued here that leaders are sense-givers and, knowingly or not, ontologisers. As ontologisers, leaders establish a world where things become intelligible, where equipment, goals and roles make sense and what it makes sense to do, what has worth appears and is given legitimacy. This influence, to ontologies, is nicely expressed by Weick (1995, p. 10) citing Thayer (1988, pp. 250, 254) where a leader is one who alters or guides the manner in which followers “mind” the world by giving it a compelling “face”, as Spinoza et al. (1997) suggest, this is disclosing a world. The important implication is that public-sector leaders do not identify themselves as influencing in this manner.

A further implication is that a leader may acknowledge a benefit to standing on an ontological hilltop yet it remains insufficient to simply gaze at the view. At this point Weick (1996) might suggest that this is the time to drop tools and get closer to the ready-to-hand meanings (Weick, 1999), to close the gap between understanding and experience. What dropping tools might look like is described next.

7.2.2 Re-orientating Leadership Practice

A phenomenological perspective shows that H–T–W is a co-constitutive relationship that brings a world into appearance. As revealed in interviews, of the current H–T–W relationship, leadership emphasis is placed on the H or usually the T, little on the dashes that connects them, the relationship. A diminished understanding of this relationship is not a problem for which there is a need to find a solution. It is an ontological condition, a disorientation that requires a reconsideration of the understanding of being in the H–T–W relationship.

Technology, ethics and leadership are potent when combined as has been attempted in this research. The meanings that they take is influenced and reinforced by underlying intelligibilities and will be given direction and action, given energy and momentum through leadership practice. A leader that reinforces cartesianism through their action and language will orientate their world differently (what shows up as meaningful) to one who orientates along anthropocentric lines. As described above, an ontological influenced direction being set in motion by leadership is rare, however, seeking to do so and to guide technology change,

ontology and phenomenology comprise a rich source of tools from which leaders can draw. Four insights that arise are presented next.

7.2.2.1 Re-orientating within the H-T-W relationship: Alienation Revisited

A thesis of technology alienation was briefly presented in chapter 3 and describes a condition where people feel that technologies alienate by reducing human experiences in nature and through taking up a disburdened, consumptive and digital-first engagement with reality (Borgmann, 1984). Arguably, technologies have increased the volume of communication and information yet decreased the amount and quality of ‘direct’ human contact with each other. As Turkle (2017a) writes, technologies make humans feel “alone, together”.

An ontological account of the alienation thesis reveals a paradox. To be is to be in the world with things, so to alienate from things is, arguably, to not be. Humans are already related to the world and in ready-to-hand or present-to-hand encounters in the world with things, so alienation means nothing and nothing is alien. When humans feel alienated, it is always alienated ‘in spite of’, because an alienated human is unable to recognise the deep union that is present within the H–T–W relationship (Coeckelbergh, 2013).

What alienates humans are theories, principles, practices or procedures that make humans feel as if they are detached from the world (Coeckelbergh, 2013). Put slightly differently, alienation arises given how humans have positioned themselves in their life-world, which occurs from how humans have come to think, to act and to be.

Alienation is not a separation from things or others. Rather it is an example of ontological disorientation within the H–T–W relationship. Ontological disorientation arises when there is a diminished understanding of being that causes this confused state called alienation; and a metaphysical explanation reinforces the disorientation.

Alienation is an ontic gap between humans and things, arguably a levelling out and diminishing of understanding the H–T–W relationship. Ontologically, disorientation reveals the problem of alienation to be a gap, not a gap between things and humans but between experience and the conditions of possibility with humans in their world with things. Ontological disorientation is also an inauthentic orientation where intrinsic worth and expressions of being in the H–T–W relationship is difficult to achieve.

Treatment for ‘alienation’ that remedies through a return to the technophobic, to “bind back the hound of technology to its cage”, repeating the earlier quote from Latour (2002), or to re-affirm the importance of a sovereign human position, are both problematic. These responses reinforce alienation because they build from the same patterns of meanings that established the position of alienation.

This may also lead to a consideration that alienation is a danger of technology. However, as Heidegger (1977b, p. 28) writes, “There is no demonry of technology” and that technology is not dangerous, but rather, not being in the right relationship with technology, not appreciating technology essence, is where danger lies. The leadership implications are that the alienation thesis conceals the ontological disorientation, and this leads away from gaining mastery in the relationships with things and any new possibilities that might arise from that mastery.

7.2.2.2 Considering the essential structures in the H–T–W relationship

In seeking to understand primordial structures of being precisely, Heidegger’s approach was to look for the ‘essence’ of something. The essence of being, the essence of technology and the essence of truth are some of his examples. He considered that, in their everydayness, there were certain essential structures that persisted as determinative of an entity’s being, enabling it to achieve its fullest potential and which brings the entity into presence, enabling it to show up as itself, in its truth.

Consider the following questions: If humans are thought of as a resource can a human realise its fullest possibility? Or will that possibility of ‘coming into its essence’ be diminished (or possibly enhanced)? If the humanness experience of ‘flesh’, the source of being in the world and through which the world is experienced, then to technologically alter the experience of ‘flesh’ would the possibility for a human to come into ‘its essence’ be diminished?

Heidegger considers ontological structures ‘essences’, building blocks from which the world emerges as a world in the form that it does. Thomson (2011) suggests meanings form as constellations of intelligibilities, or patterns of meaning, that provide substance to the building blocks. These meanings give seriousness to decisions, and they ascribe what matters. Leaders direct meaning-making and draw attention to what matters. Leaders choose which patterns of meaning are given attention.

Patterns of meaning that cluster into constellations become worthy of analysis in order to determine if and how the qualities that give rise to them may be technology-mediated and,

subsequently, to determine if and how leaders are able to guide such mediation. A leader seeking to guide existential technology change would require knowledge of these structures. However, these structures may not be clearly visible; they may be subtle and understated. Heidegger considered various structures.²² Care and authenticity are two of these structures (refer Appendix B) and examples of their possible technology mediation are provided now.

As noted in Chapter 3, as digital identities seek to eliminate the constraints of corporeality by masking or altering the body's identity markers and engage a digital presence, the care structure may shift as humans take on alternate forms and multiple identities. Which identity, the body or the various digital identities, is taking a stand on and cares about who it is that is being defined as they are by taking that stand?

Bailey (2014, p. 53) provides an example when considering that there may be no difference between getting liposuction, taking a weight loss pill or programming nanobots in the blood to store or burn fat. Bailey suggests these are "external" technology mediations of the self, and thus differ from what arises by developing self-discipline in a world where being in a 'flesh' that does not immediately behave the way humans desire. This example presents a technology-mediation where these ontological structures, such as authenticity and care, are open to change through policy implemented by agencies seeking to reduce hospitalisation rates and taxpayer-funded medical services, or by insurance companies to increase profits and reduce business risks.

The implication for leadership is that they can lead to the conditions where these structures of meaning are entirely removed or engineered beyond reach. Any decision to do so presumably requires an appreciation of the existential implications.

7.2.2.3 Causality as Responsibility in the H–T–W relationship

Heidegger considered that instrumentality was a characteristic of technology, not its essence. He writes, "Wherever ends are pursued and means are employed, wherever instrumentality reigns, there reigns causality" (Heidegger, 1977b, p. 6), where cause has become understood as that which brings about ends. Considering the word *cause*, through Aristotle's four causes (material, form, *telos*, *efficiens*), he shows that for the Greeks cause meant '*aition*', that something else is indebted or responsible. Being responsible and indebted is a part of the

²² Heidegger analysed many additional structures such as time, truth, spatiality, and anxiousness.

relationship with entities, of bringing something into appearance, to “...set it free in the place and so start it on its way, namely, into its complete arrival” (Heidegger, 1977b, p. 9).

The implications of an ontological perspective of causality for leadership requires being responsible and indebted to other entities in a manner that ‘sets it free’ and is much closer to a form of *poesies* than to transformation or acting as a servant. To consider an entity only as resource for optimisation would amount to an inauthentic H–T–W relationship.

7.2.2.4 Leading Towards a Free Relationship within Technology

Heidegger, suggesting that technology is nothing technological, considered the possibilities to disentangle from technology. He writes:

*“We can use technical devices, and yet with proper use also **keep ourselves so free of them**, that we may let go of them any time. We can use technical devices as they ought to be used, and also let them alone as something which does not affect our inner and real core. We can affirm the unavoidable use of technical devices, and also deny them the right to dominate us, and so to warp, confuse, and lay waste our nature.”* (emphasis added, Heidegger, 1966, p. 54).

To ‘keep ourselves free’ of technologies is to engage in a relationship with technology where a free relation is free in so far as it is understood not as a “take it or leave it” or “switch it off” freedom-from. Heidegger considered that freedom means to be able to recognise what reality one is in and what the constellation of intelligibilities are that orientate meaning and knowing within technological contingent circumstances.

The freedom being discussed here is within the H–T–W relationship. It is not freedom ‘from’ technology, rather, it is to seek freedom within the ascetics and mastery of the relationship with technology and the way it, within the H–T–W relationship, contributes form to existence, thereby providing existential guidance.

Freedom within technology occurs when technology opens human existence to the essence of technology as nothing technological, where, in the H–T–W relation, humans are gathered by things rather than by controlling them. In such a freedom, technology is revealed not as an ordering, rather it is revealed in the manner in which it is contributing to the H–T–W relationship, gathering practices and contributing to dwelling; the letting-be of what is, to bring something towards its complete arrival, towards its authentic self. This does not imply being

free of technologies, but having achieved mastery in interaction and relationship with technologies.

For a freedom ‘within’, what becomes significant is not what technology “is” but rather what kind of skills and activities are promoted and supported by specific technologies where leaders are responsible to bring that skill and activity into appearance. In addition, it is whether or not the skills, activities and life-world will lead to more enriched engagement in the H–T–W relationship, towards less disorientation and misunderstanding of the meaning of that relationship.

An additional form of freedom arises when the meaning of the H–T–W relationship is more clearly understood. This is a ‘freedom-for’ leaders to establish organisations not simply for outcome and strategy realisation, but also to ‘set up a world’ that reveals humans not as resources but leads them toward openness-for-being, to their fullest possibilities.

The implication for leadership is significant. Gaining mastery in interaction and relationship with technologies, being aware of the skills and activities promoted and supported by specific technologies, leaders being able to bring that skill and activity into appearance, to guide technology mediations so that freedom occurs in the H–T–W relation are examples of leadership skills that are different to contemporary leadership themes and those practiced by the public-sector leaders interviewed.

7.3 Chapter Summary

Through a discussion of the research and an interpretation of its significance, this chapter presents an answer to the research question. The findings show that public-sector leaders responsible for leading technology change would benefit from taking an ontological perspective. The concepts and propositions are presented in light of the findings. How this might appear is shown in the reuleaux triangle. Some implications for public-sector leaders have been presented.

Chapter 8: Conclusion: Contributions, Limitations and Future Directions

In this final chapter, the research is drawn to a close. The research process is presented from the identification of a research gap through to a summary of the main findings. Contributions of the research (academic and practitioner value) are identified and discussed. The limitations of the research are examined and future research opportunities offered.

8.1 Overview of the Research

This section presents an overview of the research process.

8.1.1 Research Gap

It is difficult to ignore the magnitude and complexity of technology-mediated change. Leaders who frequently initiate technology change have a responsibility to grasp the existential nature of the change, to direct it and not to leave ethical outcomes to chance, or to the market. There do not appear to have been studies that investigate the leadership role and influence in these mediations or in the manner leaders influence their meanings. It is this gap that this research effort has focused on. The research question became “How might public-sector leaders ethically guide technology-mediated existential change?”

8.1.2 Research Design

A qualitative approach was adopted for this research. Building from the literature, public-sector leaders were interviewed with the purpose to understand their views and practices regarding technology change.

Acknowledging the ethical uncertainty introduced by technology-mediated change and leadership limitations to guide such change, gave reason to review recent ontological and postphenomenological writing of technology in order to provide a deeper philosophical understanding of the H–T–W relationship. Using an ontological orientation enabled the existential concerns of technology change, an important part of the research question, to be explored and understood.

8.1.3 Conceptual Model

Analysis of the data gathered from the literature and the interviews provided the basis for the formation of a conceptual model and set of propositions that link the concepts in the model. Important considerations presented in the model are ethical uncertainty, ontological ambiguity, teleological confusion and leadership limitations.

The conceptual model reflects the current complex and frequently ambiguous situation and limitations for public-sector leaders in their leading of technology change.

8.2 Research Findings

Ambiguous, confusion, uncertainty were words that are reflective of the technology-mediated world within which leaders find themselves. An “I don’t know” response reflects the uncertainty of public-sector leaders as they consider what a technology-mediated future may be like, for themselves, their organisation and their families. They acknowledge the existential nature of change that is taking place. There appears no easy way forward, as leaders’ ability to make sense of these complex circumstances when attempting to ethically guide this change was, noted by the leaders themselves, ‘limited’.

Contemporary leadership themes such as transformational and servant leadership and familiar tools of leadership such as strategy, vision and values setting are evident within the practices of the leaders interviewed. For public-sector leaders these themes and tools have become central to their ready-to-hand practices and they bind to and reinforce a leader’s identity. The findings from public-sector leaders interviewed has shown that these leaders tend to derive the meanings and purpose of their practice from a point of understanding along a cartesian and anthropocentric plane.

A dive into the philosophical literature enabled the exploration of technology, ethics and leadership to be considered from an ontological orientation. Revealing the deep union of humans in the world with technologies highlights the co-constituted nature of this union and that the meaning and purpose arises out of this relationship, rather than separate or outside of it. A phenomenological exploration reveals the world, and those technologies that are a part of it, very differently to a cartesian and anthropocentric perspective.

The research findings show that public-sector leaders that were interviewed have limited appreciation of the deep union (ontological understanding) within the H-T-W relationship or

the two-sidedness of technology mediation that occurs across different mediation dimensions. The findings show leaders do not directly address the mediating role of technology and pay little attention to the ontological assumptions that underpin the judgements they make. Leaders' awareness of how they give meaning and shape to technology and the interplay between mediations and human appropriations is also limited. It is argued that without such knowledge leaders cannot adequately guide such change.

Similarly, transformational and servant leadership, as examples of contemporary leadership themes found in public-sector leadership practice, take no account of the union of humans with technology and the role leaders play in that relationship. This limits the possibility for these themes to assist leaders guiding technology-mediated existential change. Similarly, the ethical component of ethical leadership remains directed towards what the right thing to do is. Counterintuitively, ethical leadership is not ethical, from an original ethics standpoint.

This, in turn, suggests that humans are unlikely to arrive at a 'free' relationship with technology while the meanings of 'being in' and 'creating a world' remain framed within a cartesian and anthropocentric orientation. This may lead to a technology-led and leadership-amplified impoverishment of appreciation of the H-T-W relationship. A diminished understanding of this relationship is not a problem for which there is a need to find a solution. It is an ontological condition, a disorientation. This requires a reconsideration of the understanding of being in the H-T-W relationship and the role technology has in that understanding.

The literature findings show that by moving beyond a metaphysical account of technology, ethics and leadership to establish a different point of origin for understanding the H-T-W relationship, it is possible to surface meanings that can complement and contrast with existing perspectives. Representing something akin to a gestalt switch, an ontological perspective pays particular attention to the relationships with things (the dashes in the H-T-W relationship), not as tools, rather how things contribute in the H-T-W relationship and that gather meaning and purpose into human practices. Ethically technologies are then able to be evaluated not only as artefacts and their consequences, or their impact on humans, but also in terms of the influence in the H-T-W relationship and those essential ontological structures that give rise and meaning to the relationships.

With current leadership tools and their ready-to-hand practices confirming their leader identity, technology-mediated existential change will remain informing public-sector leadership that something is not right, while they continue to view the landscape from the same

vantage point, and, as expected, see the same terrain. As demonstrated with the example of technology alienation, the same terrain will regard alienation as a separation and detachment, and the proposed solutions will not change, alienation will remain a problem to be fixed, possibly through ‘smarter’ technology, not revealing that when analysed ontologically, alienation is a form of ontological disorientation. If technology is only understood within the cartesian or anthropocentric orientation, a disorientation is inevitable, and technology existential change becomes both an unguided destiny and a fate.

The interview findings and literature examples of technology mediation on qualities such as identity, relationships and trust show that human experience is increasingly digital, and digital first. Furthermore, the depth of the reach of technology to invoke existential change was noted by leaders and it is shown that the metaphysical explanation does not account for what sets it in motion. The explanation of this change from the cartesian and anthropocentric planes will continue to reassure and reinforce the same patterns.

The danger is noted by Heidegger, suggesting that humans may have reached a stage of nihilism and of humans enframed as information resources in a technology epoch. This state is expressed by Harwell (2019) who writes “The more digital we become, the more human we become”. As digital beings, the more humans become valued as information resources, the closer they move to a near perfect state of efficiency and effectiveness. In this state, they cause no friction and are relieved of any potential for failure, with no need for ‘flesh’.

The primary proposition from this research is that contemporary leadership presents a diminished and disoriented position to the mediated relation humans have with technology and that an ontological perspective can help public-sector leaders who govern existentially-mediating technologies to overcome limitations in their practice.

8.3 Contribution of the Research

This research contributes to the existing body of knowledge that can be of both academic and practitioner value.

8.3.1 Academic Value

An ontological perspective for leadership when considering existential technology-mediated change is difficult to find in academic literature. There are rich bodies of work on technology, ethics and leadership, however, given the influence leaders have in meaning making and sense-

giving through their leadership practices and in their technology deployments, the body of work of leadership seen from an ontological perspective is small. The contribution made here is to suggest that there is value for academics to research and to understand the ontological assumptions as leaders make technology change, and to understand how these assumptions shape existence and the meanings they attribute to technology mediations.

8.3.2 Public-Sector Leadership Value

It was not an intention of this research to arrive at specific practical tools for leaders. However, findings show that leaders have insufficient knowledge to ethically guide existential technology change, a result of their disoriented understanding of the H–T–W relationship. From this perspective there would be value for public-sector leaders to:

- add ontological and phenomenological philosophical insights to leadership practice, complementing existing cartesian and anthropocentric views,
- improve ontological literacy within leadership practice, and
- include into ethical assessments of technology the dimensions of technology mediation.

8.4 Limitations of the Research

8.4.1 Limitations of the Model

The high level and philosophical nature of this research across broad areas of technology, ethics and leadership limits the model. As Jabareen (2009) notices, sources of data used in conceptual model building are often multi-disciplinary and this can place findings some distance from practice.

8.4.2 Limitations of the Research Design

The research relied heavily upon selected literature, given the extant breadth of literature on technology, ethics and leadership, and in later chapters, on ontology and postphenomenology.

A limited number of interviews were conducted, sufficient for alignment to the literature. This has allowed for the conceptual model to be developed, albeit at a high level.

The difficult nature of some of the material, notably Heidegger, is mentioned. The researcher was new to this material and has introduced bias, phrasing and terminology that require further exploration in order to reach simpler and more concise explanations. Heidegger sought to

challenge much of Western philosophical tradition, making his insights useful even where some of the examples he uses may be outdated today.

The conceptual model and propositions were not reviewed and tested with public-sector leaders.

8.5 Directions for Future Research

Within the scope of the current research are the following future research possibilities:

- Refine the conceptual model and propositions
- Test the propositions with public-sector leaders
- Develop an ontological leadership model
- Test the model using a Delphi study
- Use the model to develop a set of practices for public-sector leaders

Given the absence of an ontological perspective within leadership literature and practice, there are many opportunities for additional academic and practical contributions. Moving beyond the scope of this research, but made visible because of it, are suggestions to:

- Develop a technology assessment (TA) model for public-sector leaders that leverages the mediation dimensions
- Develop an ontological learning framework for leadership
- Create a new ontological leadership theme
- Follow Heidegger's thinking on works of art and on dwelling in order to develop an ontological basis for organisational management and leadership

8.6 The Safekeeping of Being

This thesis is a call to leaders to watch over and keep safe those qualities that enable humans' most complete potential to remain possible. 'The Safekeeping of Being', the title of this paper, borrows from Heidegger, who advises humans to come into the right relations with technology in order to keep being safe.

There will always be differing closeness to the experience of being. Some technologies will reach close to keeping it safe. Others may place it in danger. Leaders guiding technology-mediated existential change cannot afford to be distracted, as McLuhan advises:

“Our conventional response to all media, namely that it is how they are used that counts, is the numb stance of the technological idiot. For the 'content' of a medium is like the juicy piece of meat carried by the burglar to distract the watchdog of the mind.”
(McLuhan, 1964, p. 16).

Leaders have a critically important role in designing and interpreting the meaning of being and guiding the moral saliences that exist for its safekeeping. This research raises concerns as to whether leaders have the knowledge, awareness and necessary sensitivity and receptivity within the contexts that they lead to appreciate the influence they have and to influence with ontological wisdom.

Consistent within all leadership themes is that each brings forth a world of meaning, that leadership occurs as influence through sense-giving and meaning-making and assists to shape the H-T-W reality. In this way, leadership is an integral influence in establishing reality and what it means to be in a world with others and with things. Similarly, leadership provides interpretation and legitimacy to technology mediations. So, leadership is also “doing ethics”, materialising morality through language, decisions, action and technology deployments.

This research has shown technology, ethics and leadership to be a very potent entanglement. This entanglement can form into an enframing mechanism, and this research supports the proposition for this possibility. Heidegger (1977b, p. 28), in citing the Holderlin poem, “But where danger is, grows the saving power also”, suggests an important way forward. However, he does not account for leadership. This research broadens Heidegger’s views to suggest that the saving power lies within this entanglement and the responsibility to bring it forth rests with leaders.

Research findings have considered the H-T-W entangled relationship and have left an inevitable question of the ability for leaders to get it right, and the extent to which their technology interventions lessen or amplify those experiences that bind life together, and heighten the sense to those human essences and vulnerabilities that are too precious to let go, even for the sake of betterment. It is essential therefore that those in leadership must not focus on the juicy bits of meat and allow the burglar to take off with the silverware.

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Appendix A: Ontological Perspectives: Every Day Device Use

Consider a familiar scene of a couple sitting in the coffee bar using their devices, occasionally looking up and speaking to each other with the majority of time spent interacting with the device. Chances are, we have all witnessed or participated in such a scene. Who has not had an opinion of such a scene? Do people observe the background understanding of their opinions of these scene and what that might reveal about particular orientation to the terrain (the hilltop they are standing on that informs their views)? There are many ways to make sense of this but the response can reveal how a person relates in their H-T-W (Human-Technology-World) experience. For example, consider the following hypothetical responses to the above scenario:

Response A:

“This is all part of the way technology has had an impact on our lives. More device time seems to me to alienate us from each other. Many of the relationships I have are virtual nowadays and while I meet my close friends for lunch, much of the communication is via WhatsApp or txt. I’m not really able to articulate the full impact, but I am spending more time on devices, they can be a distraction at times. I notice that my device has become an extension of me, the other day I put it down and could not remember where I put it – I got a bit anxious.”

Response B:

“There appears a loss of intimacy where partners are on their devices all the time. You seem to miss the body language with devices, even on Zoom calls, and those human-to-human expressions that you get from eye contact or even a handshake and just how somebody is interacting with you. Devices reduce some of that experience. But I am able to keep in much better contact with my grandchildren and I follow their Facebook pages to keep in touch with their lives, that’s valuable, I could not do that before.”

Response C:

In the relation I have with my phone – it is playing an important role in shifting what it means to be in a relationship with my friends and to be with my family. For example, the device often influences silence, it fills a gap of silence that is sometimes awkward in conversations with others, that might occur in moment of

quiet during a conversation – there is vulnerability in that silence. Learning to deal/cope with that silence is an experience of being present - an expectation of being quiet and accepting, being in/with the vulnerability - that seems to be removed where attention is given to the device. Over time there is a reliance on the device to fill these moments so being on one's own, or being alone (quiet) with another, perhaps a hallmark of deep respect and trust, an acknowledgement of the other, is altered in some way.

This is not to say qualities such as respect and trust are not able to be developed elsewhere or even through device use, rather, that through looking closely at the phenomena of using a device in different ways, enables a broad understanding of the mediating role devices play within an everyday, having a coffee together, phenomenon.

Appendix B: Ontological Meaning Structures

Care

Heidegger (1962) described care as a primordial ontological structure. An understanding of his thinking of care is aided through an elaboration of his term Dasein. Dasein is translated as 'being there' or 'presence' and implies an embeddedness of the daily existence and coping with living in the world. Dasein is the kind of entity for which its own being can be a matter of concern, or a matter of care. Human beings can be concerned about the type of being they are and this is embedded in the daily temporality as humans grasp some possibilities that defines them as one kind of self as opposed to another. Dasein is the kind of being where an entity is taking a stand on who it is and is being defined as they are by taking that stand. In addition, the being of other entities (things and humans) is an issue because it means to be responsible and indebted to them.

For Dasein, daily being has to do with something, producing something, attending to something, making use of something, using something, accomplishing something, deciding something. All these ways of being have care, as their kind of being. Dasein is revealed in care. Heidegger's care is based on the essence of being, giving meaning to existence as a primordial structure. Heidegger writes (Heidegger, 1962, p. 238):

Care, as a primordial structural totality, lies 'before' ["vor"] every factual 'attitude' and 'situation' of Dasein, and it does so existentially a priori ; this means that it always lies in them.

Care is a primordial outlook of humans who find themselves within practices and who dwell in everyday practice encountering technological artefacts in their H-T-W relationship.

Authenticity

Heidegger's terms ownedness or authenticity in which humans live as Dasein, in accordance with their ontological structure, towards the essential nature of Dasein. Authenticity entails a shift in attention and engagement, opening towards unique capabilities and potential, a full disclosure of existential possibilities. He argues that humans have 'fallen', living inauthentic and fail to achieve existential possibilities that become levelled (diminished) in everyday activities of idle talk (gossip), curiosity (deepening the preoccupation of idle talk) and ambiguity (a loss of distinction between genuine understanding and gossip). Within fallenness

achieving the essence of Dasein is remote. Here, inauthenticity is not intended critically, rather it is presented as an existential fact. Authentic Dasein, where there is openness to the call into ones fullest possibilities also reflects care, and authentic concern about taking a stand on itself.