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INFORMATION EXPERIENCE IN THEORY AND DESIGN

TIM GORICHANAZ

INFORMATION EXPERIENCE IN THEORY AND DESIGN

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STUDIES IN INFORMATION
VOLUME 14

INFORMATION EXPERIENCE IN THEORY AND DESIGN

BY

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INVESTOR IN PEOPLE

For my parents

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I wonder how it turns out that we all lead such different lives.
– Haruki Murakami, *After Dark*, 2004

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Thank you.

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INTRODUCTION

The sound of chimes, gentle, melodic. It's my alarm clock, which means that all the strange stuff that has been happening was just a dream. This has me at once relieved and nostalgic. When I turn off the alarm, my phone wishes me good morning and shows me the day's weather. I notice a text message and another notification, but I put the phone down, not wanting to get distracted so early in the morning. I am surrounded by books. My cat Toaster is whining, so I feed him, and then I go outside for a short walk. I notice the stoplights, but do not necessarily obey them, and I am struck by just how many signs there are all around me: license plates, traffic signs, banners, notices… Back inside, I make some coffee and then settle at my computer to write.

The world is happening around us as the flow of existence, and we experience this flow from our respective perspectives on the world. This is a matter of perception through our sensory organs, as well as processing through our nervous system, with a dose of mental feedback by which we can revisit our own thoughts and perhaps think them differently. That we have this experience is one of the things we mean when we say we are conscious.

Our experience is mediated by information. In one sense, we understand this as a unique aspect of the present age. As my vignette above shows, from the first moment of waking for many of us, digital and analogue information technologies are present, guiding us through our days. But one might reply that human experience has *always* been mediated by information: before there were digital alarm clocks, the sunrise provided information about when to wake up. Others might say that our experience is *by definition* mediated; even before we know about any of our perceptions, our sense organs and nervous system have already performed significant processing and abstraction. We do not experience reality per se, but rather we interface with reality through our bodies (Hoffman, 2019). More deeply still, some even construe existence itself as fundamentally information. All this is to say that the sentence, "Our experience is mediated by information," may be more or less meaningless.

Just as in information studies we must grapple with the ambiguity and polysemy of the very word "information," I contend that it is illuminating to grapple with the concept of information experience. If information is anything to us humans, then it can be an object of experience, and so we should seek to understand what that means. Regardless of whether all of our experience is

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already informational, there are certainly things in the world that we identify as information and which are part of our experience. If the purpose of information studies is to understand how humans relate to information with the eventual goal of designing better information – whether as librarians or writers or web developers or whatever – then investigating how people experience information can help us with that goal.

In addition to information experience, the past few decades have witnessed the rise of concepts such as user experience, customer experience and student experience. In this book, I offer a statement on information experience that draws from relevant insights regarding these other "experience" concepts while also helping to disambiguate these terms.

1. DISCIPLINARY SETTING

Before going further, I want to reflect on the disciplinary setting of this work. In brief, this work draws broadly from the human-centered areas of information studies, as well as a few corners of philosophy.

The human-centered areas of information studies include the literature on information needs, seeking and use, such as that on information behavior (IB), outcomes of information, information practice, and information literacy (IL). I would note that all these terms are debated. The term "information behavior," for example, is taken by some to narrowly refer only to work done within the behaviorist paradigm, while others take it to be a capacious umbrella term that includes all aspects of needing, seeking, searching, encountering, using… information, embracing all the paradigms within this research field (Bates, 2017). In this book, I use the term in the latter, expansive sense. It is also notable that these different research areas have been, to various extents, siloed apart, even despite their conceptual synergies. In my view, working with information experience is a way to identify the shared concerns among these areas and help bring forward their shared mission.

As a case in point, consider IL and IB. While it is difficult to satisfactorily define either of these areas, IL is roughly about educating people to recognize when they need information, where to get and how to interpret the most suitable information, and so on. On the other hand, IB is about how people recognize and interpret their needs for information, where they look for and find information, and what they do with it; whereas IL is rooted in education, IB emerged out of library practice. As Shenton and Hay-Gibson (2011) write, IL explores an idealized vision of the interactions of humans with information, with a pedagogical or design intent, while IB explores what actually happens in the interactions of humans with information, with a descriptive, explanatory or perhaps predictive intent (though IB work does sometimes have an implicit intent regarding the design of better services or systems). This analysis suggests that IL and IB are two sides of the same coin: with some simplification, IB research explores what is, and IL takes those insights to create what will be.

Clearly, IL and IB are related. But for better or worse, IL and IB have proliferated rather independently, with distinct literatures, journals and conferences and appealing to different models and theories. There has been some overlap, to be sure, but it is disappointingly limited. As I mentioned above, information experience may be a way to bring these paths back together. Indeed, Bruce (1997) seems to point toward this possibility in her work on experiences of IL, suggesting that IL research has synergy with the "broader field of information needs and uses" (pp. 63–67, 175). An example of one piece of research that may prove to be transitional in this sense is the article "Informing Practice: Information Experiences of Ambulance Officers in Training and On-road Practice" by Lloyd (2009); this study is descriptive and empirical as characteristic of IB research, it is framed within the IL literature, it centers around the concept of information experience, and it was published in *Journal of Documentation*, one of the rare journals in our field where such cross-cutting discussions can be had.

To date, most of the work in information experience has been in the area of IL, with a smaller part in IB (Savolainen, 2019). By considering all the human-centered areas of information studies (this also broadly construed), I have also drawn insights from human–computer interaction (HCI), which is another field that is ripe with discussions on how humans experience computer interfaces and devices. Research in HCI spans description, experimentation, and design. While both IL and IB have traditionally been part of library and information studies (by whatever name), HCI has traditionally been housed in computer science departments, with strong ties to the tech industry. Consequently, the HCI literature is quite separate from the IL and IB literatures, with rare exceptions. As you well know, much information today is accessed through computer systems, causing the spheres of HCI and IL/IB to overlap considerably.

While we should respect the different aims of these fields and work to understand the historical contexts in which each arose, I believe that today's sociotechnical and educational climate call for a hearty dose of synthesis. This is essentially the view of the iSchool Movement, which seeks to maximize human potential at the confluence of information and technology through interdisciplinarity. Many have commented that today's biggest problems require interdisciplinarity, and I would be happy if the ideas in this book could contribute to solving even small problems. I will revisit these points in the conclusion of the book.

2. PHILOSOPHICAL FOUNDATIONS

Philosophically, much of the work to date in information experience has been rooted in phenomenography, which seeks to describe the different ways in which people experience a given thing. Phenomenography originated in the field of education (Marton, 1986); it may be unsurprising, then, that it has been widely adopted and applied in IL research (Forster, 2016).

My approach in this book is not rooted in phenomenography, but rather phenomenology. Phenomenology is the description of aspects of human lived experience (Käufer & Chemero, 2015). There are a handful of schools of

phenomenology, and I draw in particular from hermeneutic phenomenology, which is an interpretative form of phenomenology. This school was developed by Martin Heidegger in the 1920s and carried on by a number of philosophers through the present day. Scholars in information studies who engage with hermeneutic phenomenology include Rafael Capurro and Ronald Day, among others. As described by Heidegger (2010), hermeneutic phenomenology seeks to allow something that normally remains hidden to be revealed – somewhat arcanely, hermeneutic phenomenology can be described as the "letting-be-seen" of "things themselves" (Heidegger, 2010). While on one hand hermeneutic phenomenology is a philosophical discipline, it has formed the foundation of a wealth of empirical human science research, particularly following the methodological guidelines of van Manen (1990, 2014).

Whether and how phenomenography is related to phenomenology has been contested; one analysis suggests that phenomenography has roots in phenomenology, but as phenomenography is practiced today, its concerns are more narrowly focused than those of phenomenology (Cibangu & Hepworth, 2016). Bruce (1997), in one of the early examples of information research using phenomenography, frames the research approach within the hermeneutic and phenomenological traditions. One area of difference is that phenomenography seeks to provide insight into the generalized variations across subgroups of study participants, while phenomenology attempts to stay attuned to the uniqueness of each experience while plumbing the essence of that experience. Another difference is that, as implied above, phenomenography is usually conducted for the purposes of designing better educational services, while the aims of phenomenology tend to be simply descriptive. As well, in practical terms, both traditions by now have long histories and have developed many terms of art which require significant unpacking to do any illuminating comparison; even terms as seemingly innocuous as "meaning," "conception," and "phenomenon" have very specialized connotations and applications.

Still, one central shared point bears mentioning: both phenomenology and phenomenography take a first-person perspective, as opposed to a third-person perspective. In the information field (indeed, in social science research generally), most research took a third-person perspective until about the mid-1980s (Gorichanaz, 2018a). Just as we see different things from the vantage of the sidewalk compared to looking out a fourth-story window, adopting different research perspectives allows researchers to apprehend different objects. From the third-person perspective, only those phenomena that can be observed from the outside are accounted for. People's behaviors may be visible, but there is no access to their motivations, feelings, etc. From the first-person perspective, on the other hand, researchers seek to understand other people's experiences as they live them. First-person perspectives allow a researcher to approach the deeply felt, ineffable elements of experience.

In my view, the phenomenological first-person perspective overcomes the limitations of third-person research (including systems research and even that on information practices) as well as earlier first-person research in information studies that was more narrowly focused in the cognitivist paradigm (Gorichanaz,

2018a). Moreover, it helps information studies to overcome what Suominen (2007) has called *userism*, the idea that information systems are resources to be exploited by particular users. Another way to understand this is with respect to the research concept of unit of analysis: while most information research takes either individuals or groups as its unit of analysis, the very notion of unit of analysis does not apply straightforwardly to phenomenological research; rather, we might consider the experience or one's lifeworld to be the "unit of analysis" (Gorichanaz, Latham, & Wood, 2018).

Besides phenomenology, in this work I draw on relevant discussions from a few other philosophical areas. Chief among these is Luciano Floridi's philosophy of information, which intends to be an expansive philosophical system covering ontology, ethics, epistemology, and politics (Gorichanaz et al., 2020).

3. A BRIEF HISTORY OF INFORMATION EXPERIENCE

Consideration of the first-person aspects of people's dealings with information emerged in the mid-twentieth century. An early precedent is Robert Taylor's work on question formulation, which introduced concepts such as a person's felt "visceral need" for information (Taylor, 1968).[1] Even at that time, however, and for the following decade or so, most research in information studies (by whatever name, as usual) took a third-person or "system" perspective. By the late 1970s, methods for studying human activities from other fields were brought to bear on questions of information studies, resulting in an alternative, human-centered paradigm (Dervin & Nilan, 1986), which went on to proliferate (Case & Given, 2016). However, that work did not necessarily look at experience as such, or conceptualize experience in any way.

Questions of experience came to the fore beginning in the 1970s and were burgeoning by the 1990s. One example is the emergence of the experience economy, wherein a consumer's felt sensations and memories are the main product, was perhaps first observed by Toffler and Toffler (1970) in *Future Shock* though it would not become a household term until 1998 with the publication of the article "Welcome to the Experience Economy" (Pine & Gilmore, 1998). To give another example, the theory of experiential learning, a new angle on the age-old "learning by doing," was developed in the 1980s based on, among others, the experience-based and pedagogical philosophy of John Dewey (Kolb, 1984). At this time also, Don Norman was publishing his pioneering work on user-centered design, which led to his coining of the term "user experience" (UX) in 1993. The term, and its eponymous office at Apple Computer, recognized that consumer electronics were by now far more than just digital interfaces (Norman, Miller, & Henderson, 1995). As Norman says in a video interview, a product's UX encompasses everything from when a person discovers the product, sees it in a

[1]While this line of thinking was later developed into cognitivist and behavioral notions, such as the anomalous state of knowledge, I'm struck by the aptness of the term "visceral" for today's embodied and relational understandings of information experience.

store, buys it, brings it home, unboxes it, sets it up, uses it over time, tells other about it, and so on (Norman, 2016).

Bruce (1997) presented the first experiential research on IL, based on her dissertation research conducted since the early 1990s. She uses the term "experiences of information literacy" as shorthand for a number of phenomena: experiences of successfully or unsuccessfully needing, finding and/or using information, as well as experiences of undergoing IL instruction, both from the learner's perspective and from the teacher's. In this study, Bruce developed a relational theory of IL, which came to be an influential counterpoint to the behaviorist paradigm that dominated IL at the time. While she did not use the term "information experience" in this work, the book has been often cited as originating the concept, e.g., by Lloyd (2009).

The first use of the term "information experience" in the sense we are investigating here seems to be a report on information services for career development among school counselors from 1988, drawing on experiential learning theory. Late in the report, we find a single use of the phrase "career guidance information experience" (Waidley, 1988, p. 11). A few years later, the term appears again, and again only in passing, in an IEEE editorial. Discussing the industrial revolution and the consequent rise of the twentieth century mass media, Wheeler (1995, p. 58) writes, "The result was a shared information experience which became a unifying force in society."

Observing the advent of the experience economy, Senese (1997) published a trade article titled "The Information Experience," which seems to be the first use of the term more than just in passing. In this article, Senese foretells the importance of information experience in the digital age. For her, the concept emphasizes: the personalized nature of digital information as opposed to the mass media of the prior generation; adaptive challenges when information professionals no longer "own" the information, such as having to shift from providing answers to helping people frame questions.

In the following years, "information experience" appeared many times in the literature, though usually without any conceptualization. For example, Hepworth (2004) uses the term as part of a study of the IB of informal carers in an attempt to synthesize models of IB. Information experience appears to be a central concept in the study, but Hepworth does not define it in any way.

Concurrently, information experience was being explored in the UX practitioner literature. In this context, information experience is about strategy, making sure information is organized and presented in such a way that people can understand it and act upon it appropriately. It explores how matching people with the right information in the right way can produce satisfaction, efficacy, etc. For the most part, this conceptualization of information experience is constrained to textual information (Lior, 2013). However, this time period also saw the birth of the Information Experience Design master's program at the Royal College of Art, in London, UK, which admitted its first students in Fall 2012. This program takes a multimedia and multisensory approach to information experience, allying UX with the arts and sociotechnical design. A few years later, the Pratt Institute School of Information, in New York City, inaugurated a similar degree program.

The next major milestone was the 2014 publication of *Information Experience*, a volume edited by Christine Bruce, Kate Davis, Hilary Hughes, Helen Partridge, and Ian Stoodley. As befitting a phenomenographic approach, the editors sought to provide a variety of ways of understanding and exploring information experience. At the time of this writing, the book has been cited over 50 times, and it seems to have stimulated research interest in the area. In a survey of the work done on information experience to date, Savolainen (2019) reviews 43 relevant studies, even with a constrained search (he excluded, for example, publications on document experience). Savolainen concludes from his review that "the construct of information experience has remained quite vague" (p. 1). He presents a few open questions for the research area, such as whether all cases of dealing with information should be considered "experiences" (p. 9). All in all, even despite Savolainen's initial skepticism, he shows that there is a bright and intriguing future for information experience, and much work to do.

4. CONCEPTUALIZING INFORMATION EXPERIENCE

Whereas Bruce et al. (2014) offered a variegated look at information experience, in this work I take a different approach. Rather than giving a sample of a number of ways to think about information experience, I offer a deep view of a single way. It will be the rare person who agrees with everything I say in this book; but there is value in articulating a particular perspective as it helps those with other perspectives see more clearly where they stand and how they differ. To begin with, we must better understand what is meant by "experience."

4.1 Experience

The word "experience" broadly has two senses: on one hand, it can refer to a slice carved out from a person's first-person perspective of the flow of existence, while on the other hand the word can refer to an accumulation of the flow of existence. Savolainen (2019) points out that the German language uses two different words for these senses: *Erlebnis* and *Erfahrung*, respectively. To see the difference, consider these two sentences:

(1) *I had a strange experience today.* This sentence carves out a particular experience from the flow of existence. Of all the things that happened to me today, I would call this particular set of things "an" experience.
(2) *I have 12 years of experience working in libraries.* Over time, I have built up a set of skills and intuitions when it comes to librarianship, through my time and activities spent in libraries.

In information experience, we are concerned primarily with the first sense of the term "experience," though the two are related: experiences add up over time.

The issue of perspective is eminently relevant when discussing experience. Human consciousness is always directed – it is not consciousness *tout court*, but

rather always consciousness of something. In phenomenology, this is the concept of intentionality (Käufer & Chemero, 2015). In this way, we can only experience that which we attend to (of course, we do not always choose what to attend to, as some things call our attention on their own). In information experience, this highlights that information is not an objective thing – at least not an entirely objective thing – but rather it is what a person attends to, what a person experiences as informative.

It is interesting to note that not everything we experience ends up being identified as "an" experience. As long as we are not in a dreamless sleep, we spend the whole day (or at least much of it) experiencing things; yet it does not make sense to ask how many experiences a person had yesterday. There is experience, and then there are experiences. While it may seem that identifying experiences as subjective, this is not entirely the case. We cannot simply will whatever we want to be an experience; it has to have some heft on its own. We experience some things as meaningful and salient, and others not. Oftentimes, we only realize an experience was meaningful after the fact. According to Dewey (1934), experiences that we identify from the flow of existence have a narrative structure, with a beginning, middle, and end. Having a narrative structure, they involve some measure of tension and culmination. Though we pick experiences out as objects of particular interest from our ongoing experience, discrete experiences are linked to our broader experience, and their meanings build up and deepen in complexity over time. Jackson (1998) suggests that researchers can use these concepts as analytical tools to understand experiences more deeply.

Though experience has not been much conceptualized in library and information studies, as Savolainen (2019) finds, it has seen much discussion in HCI. The classic statement is McCarthy and Wright's 2004 *Technology as Experience*, which was more fully developed into their experience-centered design framework (Wright & McCarthy, 2010). McCarthy and Wright draw their ideas from Dewey's philosophy, and they emphasize the inseparability of knowing, doing, thinking, and feeling. In their design framework, they offer tools for thinking about the composition of experience in terms of narrative, as well as the sensual, emotional, and spatiotemporal aspects of experience.

Other writers have continued to conceptualize UX, emphasizing that UX encompasses not only instrumental needs but also the subjective and dynamic perceptions of the user (Hassenzahl & Tractinsky, 2006). Writing about product experience, Desmet and Hekkert (2007) articulate three dimensions of experience: esthetic experience, experience of meaning, and emotional experience. All in all, this work shows that experience is multidimensional and dynamic. When it comes to design, it emphasizes that designing for particular kinds of experiences requires a human-centered approach and attention to more than just the designed interface.

4.2 Two Senses of Information Experience

In the second chapter of *Information Experience*, Partridge and Yates (2014) offer the insight that information experience is both a research object and a research domain. Understanding this distinction is a vital part of conceptualizing

information experience. In this section, I discuss this idea, though I prefer slightly different terms, perhaps an artifact of my phenomenological orientation: phenomenon and research domain. As a phenomenon, an information experience is a person's in-the moment engagement with information; as a research approach, information experience is a way of investigating any aspect of the information–communication chain, which spans the gamut of activities relating to information, from creation to understanding (Robinson, 2009).

Information Experience as a Phenomenon

Information experience in the first sense is a person's experience with some information, such as a document. Other terms we might use for this include reading, engagement, interaction, encountering, beholding, etc.

Sometimes this is referred to as "information use." But this term has notoriously been used imprecisely (Fidel, 2012; Kari, 2007). As a solution, Kari (2007) proposed the concept of outcomes of information. For Kari, an outcome of information is anything that ensues from an individual's contact with some information. Outcomes of information include functionally using information, socially communicating information, cognitively processing information, and autonomously being affected by information. Outcomes of information constitute only one possible type of outcome of information *seeking*; for seeking, after all, might result in no information being found. According to Kari (2007), other possible outcomes of information seeking include:

- Relevance judgments
- Internalizing, processing, and engaging with information-as-thing
- Outcomes of information
- Using sources in other ways.

While Kari goes on to focus mostly on outcomes of information, information experience focuses on engaging with information-as-thing as well as the connection of such engagement to other links in the information–communication chain. That is, while information experience begins by looking at the information encounter, it recognizes that such encounters do not stand in isolation: people's reasons for seeking information play upon their in-the-moment experience of information, and their expected outcomes of information also figure into their interpretations. So information experience goes beyond identifying information sources that people use, to examining how people are informed by information – and not just "informed," but formed and transformed, terms I borrow from Vamanu and Guzik (2015).

In his review article, Savolainen (2019) proposes that there are two aspects to information experience: experiencing sensory information and experiencing cognitive–affective information, where "experiencing" means both receiving and interpreting the information. Roughly, sensory information comes from outside a person (e.g., seeing that a trash can is overflowing), while cognitive–affective information comes from within (e.g., remembering that there is another trash can

across the street). Savolainen notes, however, that in many lived experiences these two aspects of information may be intertwined.

Information Experience as a Research Approach

The second understanding of information experience is as a research approach. In this sense, information experience is a metatheory. Metatheories can be distinguished from methodologies, theories, and other concepts; briefly, a metatheory is a set of principles that underlies a study or theory and guides inquiry into a phenomenon (Bates, 2005b).

As a research approach, information experience engages with the interpretivist paradigm (Partridge & Yates, 2014). Interpretivist research is characterized by "an interest in the meanings and experiences of human being" (Williamson & Johanson, 2018, p. 9). This paradigm maintains that much of the social world is constructed by humans rather than naturally occurring, and as such it is sensitive to contextual factors; and interpretivist research favors naturalistic settings, inductive reasoning, and qualitative data.

Information experience is grounded in and influenced by phenomenology, meaning that it attends to concrete, lived-through moments of experience rather than people's explanations, rationalizations, or opinions. A key concept in information experience research is the lifeworld (Gorichanaz et al., 2018). The lifeworld is our world as we live it in ongoing experience, where perceptions are taken as real in themselves rather than subject to scrutiny. Experiences in the lifeworld are multimodal and embodied, and there is no subject–object distinction (such a distinction arises in pos-thoc rationalizations).

While as a phenomenon, information experience examines human–information interactions at the moment of their unfolding, as a research approach information experience offers a toolkit or lens for examining other aspects of IB and IL. It is through this lens that we can examine "information seeking experiences" (one of the terms Savolainen used in his literature review, discussed above) as well as "information literacy experiences."

4.3 Maxims of Information Experience

To conclude this section, I would like to articulate three maxims of information experience. These maxims are meant to guide fellow researchers using the approach or investigating the phenomenon of information experience.

Do not assume what is or is not informative: In her paper "Bringing out the Everyday in Everyday Information Behavior," Ocepek (2018a) criticizes much research in everyday IB for defining "information" too narrowly. Because of its origin in researching library services, IB research has assumed that only certain kinds of things in the world can be informative, such as books and articles. But even when the field opened itself to studying nonlibrary and nonwork contexts, these assumptions remained as a vestige. As Ocepek writes,

> Instead of overly relying on traditional information sources and ways of knowing, [researchers] can look to narrative, lived experience, and other non-traditional forms of information as valuable resources and means for understanding everyday life. (Ocepek, 2018a, p. 404)

In her own empirical work, Ocepek has examined the information experience of grocery shopping, showing how, for instance, touching a piece of fruit can be informative (Ocepek, 2018b). When researchers assume from the start what kinds of things in the world are and are not informative, they may miss out on the ways people actually become informed.

Think of information as a process: In one of the most influential papers ever published in the *Journal of the Association for Information Science & Technology*, Buckland (1991) wrote that information can be construed in three ways: as knowledge, or mental content; as a thing, or a physical object; and as a process. Buckland points out that information systems can only deal with information in the "thing" sense, and this insight grounded his future work in document theory (Buckland, 1997) – documents being the paragon information-as-thing. Besides the "thing" sense, researchers have focused most heavily on the "knowledge" sense of information. To be sure, there are great insights to be had from such focuses, including for information experience. But more attention should be paid to information as a process, hence this maxim. If the field wants to better understand how people actually become informed and what happens when a person encounters a piece of information, whether thing or knowledge, then we must attend to information as process.

Step back to see as much of the picture as possible: Researchers seem to thrive on thinly sliced questions and narrow methods. These, of course, are hallmarks of the scientific method, and they have helped us understand, little by little, so much about the world. Such questions and methods afford incremental discoveries and innovations, but they are not so good for helping researchers spot new opportunities and directions, or for responding in a changing world. These methods must be balanced by other approaches, ones that aid us in cultivating curiosity and discovering new possibilities. The philosopher Thomas Nagel wrote,

> Every theoretical field faces a contest between extravagance and repression, imagination and rigor, expansiveness and precision. Fleeing from the excesses of the one, it is easy to fall into the excesses of the other. (Nagel, 1979, p. ix)

So if our impression of information studies is that it's currently prey to the excesses of repression, rigor, and precision, we must be careful not to fall off the opposite cliff. This maxim serves as a reminder to step back every once in a while. When we are looking at a painting, for example, it is well and good to stand up close and examine the details. Only up close can we see the particularities of the artist's technique, the way the colors build up through layers of paint, the way the texture of the canvas shows through in certain places… But we must remember that there is much more that can be said of a painting than only what can be seen up close.

5. STRUCTURE OF THIS BOOK

This book includes three parts, each comprising four chapters, to present a multifaceted view of information experience. The intention is to supply readers

Table 1. Structure of this Book.

Part	Chapter	Frame	Focus	Key Concept
1: Understanding	1	Epistemology	Epistemology	Understanding
	2		Ontology	Questioning
	3		Ethics	Moral knowledge
	4		Design	Slowness
2: Self	5	Ontology	Epistemology	Self
	6		Ontology	Identity
	7		Ethics	Ontic trust
	8		Design	Self-care
3: Meaning	9	Ethics	Epistemology	Meaning
	10		Ontology	The good life
	11		Ethics	Craft
	12		Design	Poiesis

with a spectrum of concepts to conduct research with an information experience approach as well as insights into information experience as a phenomenon. This book's parts frame information experience, and the chapters offer different focuses within each frame, as shown in Table 1.

Each part of this book frames information experience in terms of a different philosophical area: first epistemology, then ontology, and finally ethics. Epistemology is the study of knowledge or understanding, posing questions such as what knowledge is, what we know and how we know we know it. Ontology is the study of being, posing questions about what exists, how we might categorize things, and what it means to exist in the first place. Ethics is the study of action, posing questions such as what we should do to live a good life, what a good society might entail, and how we can tell right from wrong. In each frame, a key concept for information experience emerges: from epistemology, understanding; from ontology, the self; and from ethics, meaning.

Through each of these frames, the chapters focus on different philosophical branches. Chapter 3, for instance, focuses on the ontological dimensions of understanding, which is broadly an epistemological concept. This structure arises because neither epistemology, nor ontology, nor ethics stand alone. Writers such as Karen Barad encapsulate this idea in terms such as "onto-ethico-epistemology" (Barad, 2007, p. 90), acknowledging that we are part of the world (*onto*) that we seek to know (*epistem*) and act in (*ethico*). And so in this book the concepts of understanding, self, and meaning are each explored in their epistemological, ontological, and ethical dimensions.

As well, each part concludes with a chapter on design. The purpose of these chapters is to offer some insight for operationalizing and applying the concepts from the previous chapters in each part for creating better information systems, drawing also from research in human-centered design, participatory design, and value-sensitive design. Unlike epistemology, ontology, and ethics, design has

never been a traditional branch of philosophy (at least not without some acrobatics of imagination). However, Floridi (2019) has made the case that philosophy is a kind of design – conceptual design – and that attention to the logic of design is urgently needed in today's world. As for information studies, HCI and IL have from the start been concerned with designing better systems and services, though other branches of the field have been less interested in design. Recently, Clarke (2018) has argued that information studies may be fruitfully construed as a design field, not unlike what Floridi has done in philosophy.

While I have tried to distill and bring forward the chief conceptual insights in the design chapters, it is likely, and hopeful, that you will find interest and inspiration throughout this work. This book is largely philosophical, but I hope approachable. Much of our field has shied away from philosophical discussions – in my view, to our detriment. Our reluctance in dealing with philosophy may stem, in part, from the idea that nothing comes of philosophy – that we cannot do anything with this idle, arcane chitchat. But "even if *we* can't do anything with it, may not philosophy in the end do something *with us*, provided that we engage ourselves with it?" (Heidegger, 2014, p. 13). You never know.

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PART I

UNDERSTANDING

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Chapter 1

INFORMATION AND UNDERSTANDING

ABSTRACT

Information studies is concerned with information, but what is information for? That question is usually answered with reference to epistemic aims, the default of which is generally assumed to be knowledge. Following recent work in epistemology, this chapter argues that, from the perspective of information experience, understanding is an epistemic aim well suited to the field. Understanding refers to the grasping of inferential and explanatory relationships among a body of information. Two forms of understanding can be distinguished: ontological and ontic. Ontological understanding is the background activity through which perception and mentation happen. Thus, ontological understanding is a matter of an agent's conscious and experiential engagement with their environment – in short, it is one's making sense of their situation. Over this background, ontic understanding is made. Ontic understanding can be defined as a coherent and self-transparent network of knowledge that has been constructed by a conscious agent through ontological understanding. All in all, the concept of understanding provides an account for how bodily experience, recorded information, and other forms of information can contribute epistemically in concert.

Keywords: Information; understanding; learning; knowledge; ontic; ontological

1.1 INTRODUCTION

In this book, I will discuss the central concepts of information experience as a research domain and, along the way, present some research on information experience as a phenomenon. I view information experience as part of the

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broader field of information studies, and so a way in to our discussion is to consider the concepts and purpose of information studies writ large.

To start with an obvious point, information studies is concerned with information. But what does this mean? Answering that question, we might attempt to define *information*. Doing so is difficult, not least because the word denotes on one hand something objective and quantifiable, and on the other hand something subjective and qualitative. Even focusing on just one of these denotations, information is quite hard to pin down, which may be surprising given its ubiquity. Information is our *medium*, to use that word in the biological sense. Or perhaps it is not so surprising, since those things closest at hand are often the most difficult to define. Saint Augustine made a similar observation about time: "What then is time? If no one asks me, I know. If I wish to explain it to one that asks, I know not" (Saint Augustine, 2002).

Another approach is to examine what information itself is *for*. That is, what does information matter? In a sense, this is the path taken by scholars such as Furner (2004), who emphasizes that information studies isn't generally concerned with information per se, but rather with the processes around information, including preservation and access. Similarly, in information behavior, information is not considered as an end in itself, but rather it is used for some purpose in the world. Understanding information, then, is a matter of understanding how information is used. This question has not traditionally been of interest to information studies, but it is becoming increasingly necessary to address. One reason for this is the growing complexity of sociotechnical systems in today's society and the attendant need for people to be able to marshal information from multiple sources to solve problems given changing constraints.

For my part, I will address the question of what information is for in terms of its *aims*, or goals, or ends. That is, what does information move us toward, as individuals and societies?

There are many levels of abstraction on which we can think about aims, and throughout this book we will consider three sorts of aims. In Part 1, we will examine epistemic aims, or those related to human knowing. As I will discuss in this chapter, I view understanding as a chief epistemic aim for information experience and information studies more generally. In Part 2, we will look at ontological aims, and specifically the self. And in Part 3, we will examine ethical aims, or those related to moving forward – and specifically, the aim of meaning.

In this chapter, I will argue that understanding is an epistemic aim well suited to information experience. Here *understanding* refers to one's grasping of inferential and explanatory relationships among a body of information. We can distinguish two forms of understanding: ontological, an ongoing background engagement of a person with their environment; and ontic, a particular network of knowledge that the person has constructed. Among other benefits, the concept of understanding provides an account for how bodily experience, recorded information, and other forms of information can contribute epistemically in concert – which is urgent given the shifting focus of information studies to encompass these other forms of information.

1.2 INFORMATION AND EPISTEMOLOGY

Egan and Shera (1952) observed that information services in their time were overly fragmented, blighted by microcosmic thinking. In a time of technological and scientific explosion, this would no longer suffice: it was "economically wasteful and intellectually frustrating… a Rube-Goldbergian mechanism so intricate and so cumbersome that it is in danger of falling of its own weight" (p. 125). Information studies, they said, was in need of macrocosmic thinking – theorizing, in other words – that would unify information services in a way analogous to an efficient national railroad system.

They proposed, as a guiding theory for information studies, the concept of social epistemology. Whereas epistemology in general tends to look at individuals' knowledge, social epistemology examines the knowledge of a society. In their words, social epistemology is "the study of those processes by which society *as a whole* seeks to achieve a perceptive or understanding relation to the total environment" (Egan & Shera, 1952, p. 132). Within this framework, many different institutions and scholarly fields play roles; their focus was on the information professions. Through the lens of social epistemology, information professionals are responsible for facilitating the flow of knowledge throughout a society, which is accomplished chiefly by organizing and providing access to documents.

A different approach to epistemology in information studies takes not the social perspective but a personal one. This seems to be the orientation underlying much information seeking research, though it has generally not been made explicit. Kelly (2019) has recently reviewed this work, discussing points of relevance in the psychological literature on personal epistemology and epistemics to human-centered information research.

Egan and Shera (1952) were the first to connect information studies and epistemology (Fallis, 2006; Furner, 2010), and that connection persists to this day (Dick, 2013). Fallis (2006, p. 508), for example, writes that "helping people to acquire knowledge is the *main* objective of libraries and other information services." While this may seem overly obvious, epistemology is not the only possible philosophical basis for the information professions, and nor has it historically been the only one. For example, the first library was proclaimed to be a "house for healing the soul" (Lutz, 1978) and the nineteenth-century public library movement appealed mostly to socialization (e.g., of immigrants) (Wiegand, 2015). Consider also how libraries provide not just factual information but also works of fiction, to say nothing of Internet access which may be used for any number of activities that are not connected to knowledge, per se. As such, ontology and ethics are surely just as important as epistemology, threads that will be picked up in Parts 2 and 3 of this book, respectively.

1.3 EPISTEMIC AIMS FOR INFORMATION

When considering the epistemic aims of information, knowledge may be the first one that comes to mind (Fallis, 2006). When we seek information, oftentimes we are really looking for knowledge. What other epistemic aims are possible? Let us

return to Egan and Shera's 1952 definition of social epistemology; they make reference not to knowledge but rather to understanding, which has seen a resurgence of late (Bawden & Robinson, 2016a, 2016b). Other recent work in information studies, particularly in information literacy, focuses on learning (e.g. Bruce, 2008). And lastly, a seldom-mentioned but intriguing epistemic aim is wisdom (Ackoff, 1989). In this section, I will give a brief overview of these various epistemic aims. While each is worthy of attention, I find understanding to be the most useful conceptual focus for work in information experience. For this reason, in the following section, I develop a theory of understanding in more detail.

1.3.1 Knowledge

Knowledge is perhaps the most discussed epistemic aim in information studies (Fallis, 2006). This is not surprising, as it's also the most discussed epistemic aim in epistemology – indeed, epistemology is often glossed as the "study of knowledge" (Greco, 2014).

Despite myriad discussion, there is no agreement on a definition of knowledge (Furner, 2010; Rowley, 2007). In information studies, knowledge is sometimes seen as any or a mix of epistemic content, capability, experience, skills, and values (Rowley, 2007). However, it is construed, scholars in information studies generally connect knowledge to information, whether seeing knowledge as a certain type or part of information (Yu, 2015), or as information that has been processed in a particular way (Bates, 2006; Floridi, 2011a). Roughly, two groupings of definitions can be identified: knowledge as true information (i.e., objective or explicit knowledge) and knowledge as individually internalized information (i.e., personal or implicit knowledge) (Furner, 2010). While information studies historically focused on explicit information, such as that recorded in documents, more recent work seems to be emphasizing implicit knowledge. Such discussions tend to see knowing and acting as inseparable (Day, 2005; Lloyd, 2011; Tsoukas, 2011); for example, one's knowing how to ride a bike is not something that can be put into words and taught verbally, but rather it is embodied and can only be exemplified.

In this context, those studying knowledge face the challenge of a lack of conceptual clarity in the field, in part due to paradigmatic entrenchment. This may result in a researcher misapprehending certain examples of knowledge and overlooking others. Still, those examining knowledge may benefit from a broad and deep literature employing each of the various conceptualizations of knowledge, in information studies and beyond.

1.3.2 Learning

Another epistemic aim invoked in information studies is that of learning. An interest in learning emerged with the information literacy movement, which can be traced back to the 1960s (Tuominen, Savolainen, & Talja, 2005). "The central thrust of the movement is to integrate library and information skills more fully with the learning process" (Tuominen et al., 2005, p. 332). Information and

learning work, within and beyond information literacy proper, has burgeoned; a recent landmark in its proliferation was the founding in 2017 of the journal *Information and Learning Sciences*, which publishes work at the intersection of information and education.

At root, learning can be described as a change in one's understanding (Limberg, 1998). But not just any change can be described as learning; rather, learning is a change consonant with a particular objective, usually identified ahead of time. Oftentimes, the learning process involves a teacher who establishes the objectives, but one may also learn on their own – this latter case has become prominent since the 1990s with the advent of "lifelong learning" (Tuominen et al., 2005). Historically learning in information studies has been conceived as a person's coming to possess a certain set of skills (e.g., being able to locate information on a topic of interest, being able to use such technology), but more recent discussions emphasize that learning is always situational and contextual (Bruce, 2008; Limberg, 1998; Tuominen et al., 2005). In other words, learning is about becoming a skilled actor in a particular domain, rather than coming to embody general principles. In information literacy, researchers and practitioners focus on the role of information in a person's building of such skills and experience (Bruce, 2008; Limberg & Sundin, 2006). And whereas earlier paradigms in learning theory focused on the cognitive or behavioral processes of learning, today researchers and teachers are coming to recognize experiential processes (Harasim, 2012), which is also coming manifest in information literacy (Bruce, 2008; Bruce, Davis, Hughes, Partridge, & Stoodley, 2014), as discussed in the introduction of this book.

Learning, then, is a specific form of knowledge construction which makes reference to learning outcomes (objects, objectives, or goals) usually established ahead of time. The research generally, but not always, refers to processes in educational settings (e.g., universities and specifically academic libraries), but it may prove useful in other contexts where there is a clear goal.

1.3.3 Understanding

A third epistemic aim for information is understanding. Sometimes when we seek information, we are looking for understanding: to understand how something works or why something happened. There have been some discussions of understanding in information studies, reaching back to Russell Ackoff's famed DIKUW pyramid (Ackoff, 1989). Recall also that Egan and Shera's definition of social epistemology made reference to understanding rather than knowledge (Egan & Shera, 1952). Ackoff described understanding as the grasping of causal relations among pieces of knowledge. In contrast, Bellinger, Castro, and Mills (2004) saw understanding not as an entity but rather as a process, e.g., the way the human mind transforms data into information. Besides these papers, the concept of understanding saw virtually no comment in information studies until the work of Bawden and Robinson (2016a, 2016b).

In philosophy, epistemologists have begun to consider understanding as well. Broadly, understanding is said to refer to the apprehension of inferential and

explanatory relationships among a body of information (or, perhaps, of knowledge or meaning, depending on how these terms are defined) (Baumberger, Beisbart, & Brun, 2017). Jonathan Kvanvig and Timothy Williamson in particular have argued that understanding is more valuable than knowledge (the traditional scholarly object of epistemology) for two reasons (Kvanvig, 2003; Williamson, 2000). First, understanding gives a way to acknowledge shades of gradation, rather than the binary of known/unknown. Second, understanding is immune to what philosophers call *epistemic luck*, the idea that if you "know" something without having a convincing justification, then you do not truly have knowledge of it; with understanding, on the other hand, justification is built in, as a conscious agent puts together various pieces of information into a coherent web (Kvanvig, 2003). Most recently, philosophers have been debating the prospect of group understanding (Boyd, 2019): can groups be said to possess understanding, or only individuals?

Drawing on this epistemological work, Bawden and Robinson (2016a, 2016b) suggest that understanding is a particularly useful epistemic aim for information studies to consider. For one, helping people understand may present an antidote to information overload. Moreover, understanding helps better account for inconsistencies and outdated information (which perhaps do not qualify as knowledge) that constitute a share of library collections – not to mention works of art and fiction (see Briesen, 2014; Elgin, 2002). Separately, I proposed that understanding may be useful to the field as a way to conceptually unify the diverse forms of knowledge in the field (pure meaning, upgraded information, embodied action), as discussed above (Gorichanaz, 2018d).

In all, understanding is just beginning to be considered in information studies, but already it is clear that it makes up for several of the shortcomings of focusing on knowledge or learning.

1.3.4 Wisdom

The final epistemic aim that has been discussed in information studies is wisdom. This aim has been of longstanding interest in philosophy (the word *philosophy*, after all, can be calqued as "love of wisdom"). As reviewed by philosopher Sharon Ryan, throughout history wisdom has been defined variously in terms of humility, accuracy, and abundance (Ryan, 2014). A recent definition defines wisdom as knowing many things, having committed to live rationally, and being sensitive to one's limitations (Ryan, 2012).

Outside philosophy, Gugerell and Riffert (2011) note growing interest in wisdom across the social and human sciences. Within information studies specifically, the first to mention wisdom was Ackoff (1989), for whom wisdom topped the epistemic pyramid (Rowley, 2006). Ackoff defined wisdom as evaluated understanding, i.e., one's ability to envision the long-term consequences of their actions. More recently, Warhurst and Black (2015) developed a seven-part conceptualization wherein wisdom comprises: knowledge itself, applying knowledge, making judgments, breadth of perspective, accepting uncertainty, working through networks of understanding, and striving to live a good life.

While many have called for more research on wisdom, Teo-Dixon and Sayers (2011) caution that the very nature of wisdom may resist tidy definition without being eviscerated.

Wisdom is an inspiring concept, particularly for those of us engaged in research. Perhaps, in the end, all humans aspire toward wisdom. But the connection between information and wisdom is not at all clear. Of all the epistemic aims discussed here, this one is the least understood and most difficult to operationalize – perhaps necessarily so.

1.4 WHY FOCUS ON UNDERSTANDING?

Of the epistemic aims surveyed above, I suggest that understanding is the most appropriate fundamental focus for work in information experience. In the subsection on understanding above, I discussed some reasons that have been put forth for the relevance of understanding to information studies. In this section, I will discuss why understanding is particularly conducive to research and thinking in the area of information experience.

The first maxim of information experience is not to assume what is or is not informative a priori. Whereas other approaches to studying information behavior may begin with canonical types of information or forms of knowledge, information experience research begins further downstream, at understanding. Looking at the understandings built in an experience and following these developments upstream can uncover forms of knowledge and information that may go unnoticed otherwise.

The second maxim of information experience is to consider information as a process, rather than something static. With respect to understanding, this warrants some discussion. In English, we use the word *understanding* in several senses, but these senses can be grouped into two categories: ontic and ontological. These terms come from the philosophical work of Heidegger (2010), for whom *ontic* relates to states of matter (e.g., kinds of beings – note the *s*), and *ontological* relates to relations (e.g., ways of being). Ontological understanding, then, is the way of being by which human perception and cognition happen. (Other animals surely have understanding capacities, but we will leave that aside for now.) We can think of ontological understanding as an ongoing background mode by which a person engages with and makes sense of their environment. Atop this background, a person builds ontic understandings. Ontic understandings are built. Ontic understanding can be defined as a coherent network of knowledge that has been constructed and self-transparently "grasped" by a conscious agent, made possible through ontological understanding. When we talk about being distracted or focused, probing or uncritical, we are characterizing ontological understanding; while when we say things like, "My understanding of the situation is…" we are describing ontic understanding. So examining cases of understanding means identifying examples of both ontic and ontological understanding; understanding is inherently processual.

The third maxim of information experience is to consider experiences as holistically as possible, taking into account contextual and naturalistic factors.

When information is integrated in a person, knowledge is formed, but this knowledge participates in a network of understanding. Thus focusing only on knowledge may miss the bigger picture. As philosopher Catherine Elgin has written about understanding the concept of lying:

> Understanding, as I construe it, is holistic. Suppose our objective is to understand the wrongness of lying. This might mean a variety of things. We might want to understand *why* lying is wrong, or *what makes* lying wrong, or *when* or *to what extent* lying is wrong. These are all legitimate and important questions. But I am after bigger game. I want to understand how lying's being wrong is woven into the fabric of human life. Satisfactory answers to all of the foregoing questions will supply part of the answer but, I suggest, only part. (Elgin, 2017, p. 83, emphasis hers)

As information behavior seeks more true-to-life and everyday approaches to studying human information phenomena, understanding may prove fortuitous.

1.5 ILLUSTRATIONS: ATHLETES AND ARTISTS

In my own research, I have studied understanding in the information experiences of ultradistance endurance athletes and visual artists. This section discusses the methodology and findings from those studies, while the next section discusses opportunities for future research regarding understanding in information experience.

1.5.1 Understanding and Running 100 Miles

The first study explored the information experiences of athletes who participated in a 100-mile footrace (Gorichanaz, 2017b).

Such events, imaginably, are grueling, and completing a 100-mile race (or any ultramarathon) requires successful information management. During a race, athletes confront any number of challenges, such as navigating the course, which generally involves difficult terrain and may not be well marked, and dealing with physiological needs, psychological issues, and medical problems – and this is to say nothing of one's training runs and peripheral activities.

In studying information experience in this domain, my research question was, "How do ultrarunners build an understanding of ultrarunning?" In other words, this study identified a form of ontic understanding (one's understanding of a sport) and set its sights on the ontological understanding that undergirded it. In this study, I used interpretative phenomenological analysis (IPA) (Smith, Flowers, & Larkin, 2009), a well-documented and much-discussed methodology for conducting and analyzing semistructured interviews with a small number of individuals to gain a holistic and true-to-life understanding of a phenomenon. IPA allows for rich descriptions of complex processes without the need for any preexisting theoretical framework. I conducted a 1-hour interview with each participant, and then inductively open-coded them in multiple rounds, looking for cross-cutting themes.

In this study, I discerned three themes that characterized how these athletes built understanding: time, struggle, and perspective. To speak first of time, the

experience of temporality played into these participants' understanding along multiple temporal arcs (Hartel, 2010), from experiences in this particular race, to those from this training season, to lifetime experiences integrated over the course of one's running career. The athletes made sense of their race experiences with respect to their seasonal and lifetime arcs. Understanding takes time – there is no shortcut. The second theme discerned in this study was struggle. Ultrarunning is often difficult and painful (granted, there are many moments of joy), and it seems that the opportunity to endure difficulties is a central draw of ultrarunning, and having overcome great difficulties is a central value. Participants in my study described building understanding through dealing with struggles on the trail. The final theme from this study was perspective, showing how understanding is built through collecting and considering multiple perspectives. Regarding this particular race, for example, runners prepared by engaging with documents in multiple formats, including YouTube videos showing the terrain and weather, written reports of people's experiences in prior years, and consultations with running friends. The mechanism by which these perspectives are adjudicated is analogy; people reason by analogy to apply certain aspects of each perspective to their own situation.

This study showed how time is the horizon of understanding, over which struggle and multiple perspectives can be sought and leveraged to build and deepen understandings. Overall, this study resulted in three provocative questions for future information system design: How can we help people slow down? How can we invite people to struggle? How can information science stimulate analogical thinking?

1.5.2 Understanding and Making Art

Next, I conducted a study of how visual artists build understanding throughout the process of art-making (Gorichanaz, 2019a, 2019c). In this particular study, I asked the research question, "What is the lived experience of self-portraiture as a form of information creation?" I recruited local artists to create self-portraits and document their process and experiences along the way. As this was a longitudinal study, I did not use IPA but rather a bespoke form of phenomenological inquiry derived from phenomenology of practice (van Manen, 2014), a methodological toolkit for examining the phenomenology of particular practices or activities that people engage with, such as caring, teaching, or art-making.

As the artists worked, I collected verbal and visual material – audio-recorded responses to self-interview prompts and then photographs of the in-progress artwork as well as the workspace, sketches, reference materials, etc. I also conducted a follow-up interview with each artist once their self-portrait was complete, in which I probed deeper into the themes that began to emerge in the in-progress materials. The empirical material for each artist constituted a lived experience example, and these examples were analyzed iteratively, first individually and then comparatively.

This study discerned a number of themes across a spectrum from being shared by all participants to being unique to each participant. Themes shared by all the

artists included the artist's seeing their work as a form of communication; engaging with memories as reference material; taking breaks and stepping back from the work from time to time; and experiencing waves of tension and relaxation (see Gorichanaz, 2019b). These themes show the character of ontological understanding in this domain. Further, I examined the sorts of ontic understandings built through creating a self-portrait. I found that these understandings fall into two groups: understandings of the self and understandings of the artistic process. Understandings of the self included comparing the past self to present self, experiencing an epiphany, dealing with mental conflicts, and understanding the difference between oneself and others. Understandings of the artistic process included developing a new artistic method, noticing the influence of the environment on one's art, and learning to let the artwork flow rather than forcing it.

Overall, this study contributed to work in everyday life information behavior by showing how phenomena that are not traditionally considered to be information sources – such as one's workplace environment and childhood memories – can in fact be informative and contribute to people's building understanding. These findings encourage us to look for other unexpectedly informative phenomena in other domains, rather than assuming a priori what is and is not informative.

1.6 FURTHER RESEARCH WITH UNDERSTANDING

Understanding is just beginning to be discussed in information studies. A better understanding of understanding may reveal ways of knowing and forms of information that have not yet been acknowledged. Consequently, a focus on understanding has the capacity to deepen research and practice in multiple areas of information studies. There are many ways in which further research can engage with the concept of understanding.

First, understanding has seen a sizable literature in philosophy, including in hermeneutics, epistemology, philosophy of language, and esthetics, which may be able to contribute to information studies. These various fields offer different conceptualizations of understanding, suggesting an opportunity to clarify what is meant by understanding. In particular, such work should articulate how understanding connects to other epistemic frameworks in information studies, such as Popper's (1978) three worlds (material reality, subjective experience, and recorded information), which has been much-discussed in information studies.

This work might be seen as applied philosophy; but further research on understanding in information studies may also in its own right contribute to theorization in other fields; for instance, it would be useful to devise a taxonomy of ontic understandings, including the various types of matters of taste and matters of fact, as well as pseudo-understandings, such as cases of mis- and disinformation. Further, I see two lines of research in particular that may be fruitful to consider: first, the role of time in information behavior; and second, the concept of shared information experiences. Studies in information behavior have rarely taken time into account (Savolainen, 2006), despite the obvious relevance

of time to all human activity. Understanding, as unfolding and built on a temporal horizon, may offer a suitable framework for studying time in information behavior. To speak of shared experiences of understanding, it is notable that philosophical accounts focus on the understanding of one individual agent; but recall that Egan and Shera (1952) spoke of a society's understanding. In what sense can a society understand? How do people build understandings together? As I mentioned above, this has been the focus of some recent work in philosophy (Boyd, 2019); as much work in information studies social-epistemological in nature, this would seem a useful area to explore within our remit.

1.7 CONCLUSION

This chapter has introduced the concept of epistemic aims, presenting a number of epistemic aims that might be explored in information experience and suggesting that understanding may be the most suitable general-purpose concept for this area.

There is much room for further research and consequently design regarding the role of information in people's understanding. With insight into how people build understanding by engaging with documents and other forms of information, then information professionals will be better equipped to create information systems to support understanding, rather than merely providing information.

Any number of information services and technologies may benefit from applying these insights. One high-level example is information literacy. McKenzie (2000) describes information literacy as a kind of understanding, and she connects understanding and questioning. "Without strong questioning skills, information technologies contribute little to understanding or insight. There is even some chance that they might dilute understanding and interfere with thinking" (McKenzie, 2000, p. 15). This suggests that further research on the relationship between understanding and questioning could deepen our understanding of understanding and reveal new paths for the development of understanding conducive systems. This prospect will be taken up in the next chapter.

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Chapter 2

QUESTIONING

ABSTRACT

A good scholarly publication sparks new questions for future research. In the same way, many kinds of information experiences drive questioning. This is a novel counterpoint to the traditional view that information and documents simply provide answers to queries. Research suggests that questioning is a crucial component in the building of understanding. Questioning is often defined linguistically, as a certain kind of utterance, but more deeply it can be understood as an openness to what the world can offer – the beginning of thought, and the medium by which information informs. In this chapter, I consider questioning through the lens of document work, which entails the myriad behaviors and activities related to documents in a given setting, including both the creation of new documents and dealing with existing documents (using, sharing, copying, destroying, etc.). If a document provides an answer, then document work can be conceptualized as the building of understanding, and questioning is the mechanism by which understanding is built. These concepts offer a framework for investigating document use as an experience.

Keywords: Question; document work; understanding; knowledge; ignorance; Gauguin

2.1 INTRODUCTION

The connection between information and questioning may not be immediately clear. Upon inspection, we can understand questions as requests for information; in other words, information is an answer to a question. In a sense, information *can only* inform with respect to a question. Without a question, a person encountering some would-be information would not incorporate it into their cognitive structure and would not be informed. Moreover, depending on a person's question, the same data could furnish different information – for instance,

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"75" could refer to a temperature, a number of people, an amount of money, etc. But questions need not always be clearly articulated; a person in an "anomalous state of knowledge" (Belkin, 2005) can be informed just as well as one who has verbalized a question. This is an issue that will become clearer as this chapter progresses.

If information is an answer to a question, then one way to conceive of information organizations is as storehouses of answers. In this light, data and documents are objects that provide answers to people's questions. This can be seen literally in traditions such as the library reference interview, wherein a patron asks a question and the librarian provides an answer in the form of documents.

Consonantly, questioning has been of practical interest to information studies since the beginning. People ask questions to seek information: online, a person may type a query into a search engine to find websites on a topic of interest, while in a library, a user may ask a reference librarian for materials in response to a particular problem. Sometimes these are articulated questions, but other times people's questions are less direct. How can we understand such "indirect" questions? Is there anything essential about questioning underlying the different types of questions? How is questioning connected to understanding? These are some of the issues that theoretical work in information studies must grapple with.

Though technical work on question–answering proceeds, particularly behind closed doors such as with the world's major search engines, theoretical work has been limited. Moreover, this work in large part does not examine questioning as such, but rather problem-solving and decision-making. For example, research that contributed to Google's "direct answers" feature includes methods for extracting and structuring information such as attribute–value pairs (Wong, Widdows, Lokovic, & Nigam, 2009). Moreover, this work has proceeded in an ad-hoc way rather than being developed alongside an overarching theory (Arafat & Ashoori, 2019). Swigger (1985) came to such conclusions over 30 years ago after reviewing the literature on questioning in information studies, and in an updated literature review, Kwon (2016) echoed these remarks. These authors suggest that a better theory of questioning, including how questioning relates to query-formulation, answering, problem-solving, etc., may unlock doors to new ways of moving forward in information retrieval and related fields. This chapter contributes to such theorization by proposing a framework for questioning and understanding as they relate to information experience.

2.2 WHAT IS A QUESTION?

One might reasonably suppose that a question is an utterance that ends in a question mark in text or an upward inflection in speech – what linguists call the interrogative mood. Yet an utterance such as "How are you?" may not really be a question but a boilerplate greeting, while one like "State your name" elicits information in a questioning way even though it does not take the interrogative mood. So we might say a question is an utterance meant to obtain information

(Cohen, 1929). Yet one person can give another a questioning look, effectively posing a question without using any words at all, and thus it seems that questioning may run deeper than language. So what is a question, really?

Going back at least to Socrates, philosophy has progressed by posing, clarifying, and answering questions. Yet few philosophers have asked what questions themselves are. Over the centuries, there have been some discussions on the logic of questioning, but it was not until the turn of the twentieth century that such discussions proliferated (see Struyker Boudier, 1988). In large part, this work has led to various typologies of questions (e.g., Cohen, 1929), with more limited discussions on the essential nature of questions (e.g., Collingwood, 1939; Floridi, 2019; Heidegger, 1977). Questioning has been taken up in other fields as well, including psychology and, of course, information studies (O'Connor, Kearns, & Anderson, 2008; Swigger, 1985). With particular relevance to information experience, Kearns (2003) proposes a taxonomy of questions from the perspective of an information seeker with two axes: degree of depth required in answering and clarity of the question. Along the first axis, a question can call for a simple lookup, some form of logical consideration, or a conversation. Along the second axis, a question can be an articulated query, a vague awareness, monitoring, browsing, or encountering.

In a review of the literature on questioning in information studies, Kwon (2016) finds that questions have been conceptualized in two ways. First, questions have been considered as objects to be transferred through an information system; research in this vein has focused on improving information retrieval systems through studying the classification and grammar of queries. Second, questions have also been taken to be expressions of an underlying information need; research in this vein has focused on tactics for helping users "correct" their questions to better match a document or set of documents to their information need. But both these approaches assume that users can know what they do not know – this is the paradox of the question (Flammer, 1981).

As such, Kwon (2016) proposes a third way to conceptualize questioning: as intersubjective, dialogic practice, rooted in the social norms of particular knowledge domains. Kwon shows how questions are formulated in different ways in different disciplines. For example, even when asking about the same topic, neuroscientists and computer engineers will ask different questions, and they will ask them differently. This view recognizes that questions do not merely elicit information but also provide information. For instance, questions show what a person already knows (or assumes), and they supply some criteria for what would constitute an acceptable answer. Kwon's view also emphasizes that all knowledge claims have a question correlate – that statements can be converted into questions by putting them into the interrogative mood (Hookway, 2008). For example, the knowledge claim that there are six lilies in the vase implies questions such as how many lilies are in the vase, what is in the vase, etc. To me, this notion suggests that questioning may not simply be a special form of utterance, but rather a way of orienting oneself in the world.

Recall from the discussion in Chapter 1 that human understanding encompasses more than merely the linguistic but also cognitive forms that are

prelinguistic or sublinguistic. Conceptual knowledge is built up from embodied, neural ways of "knowing" (Johnson, 2007). Given this, we can understand "knowledge claims" to encompass more than linguistic statements, to the extent that things in themselves can be understood to be statements of themselves (Day, 2019). If all statements have question correlates, then all things also imply questions of themselves. Just as conceptual knowledge is built up through layers of complexity, so questions are built up but ultimately rooted in these primordial questions implied by beings themselves.

On this view, questioning is *a way of being* – a person's being open to operating on the knowledge claims that constitute the world, generating further knowledge thereby. A question is a way of looking for the unknown in the known. In this sense, we can understand more deeply Cohen's (1929, p. 351) statement that "question is the beginning of thought," which Kearns (2003) found to be his most illuminating description of the term. What is more, it is not only that questions begin a cognitive process, but that they have moral force. As Heidegger (2010) wrote, human beings are the kind of creatures who are questions to themselves. A question is bringing what one already is into what one might become.

So if questioning is the beginning of thought, then we might consider how questions lead to information and understanding.

2.3 DOCUMENTS AS ANSWERS

Since its origins, information studies has been concerned with the organization and retrieval of documents, where documents might be considered as containers of information. What we call "information retrieval" is, for the most part, more accurately *document* retrieval (Buckland, 1991). But rather than containers, documents are perhaps better considered as *conglomerations* of information, the locus in which several forms of information come together, including the object's format and content, and the psychological and physiological aspects of the person beholding it (Gorichanaz & Latham, 2016). How does this information inform?

The retrieval process proceeds through questioning, such as when a user types a search query or poses a reference question. On the conceptualization of questioning sketched in the previous section, even browsing behavior can be interpreted as a way of questioning. If questioning leads to document retrieval, then the documents are meant to provide, or perhaps *be*, answers. As Meyriat (1981, p. 54, translation mine) wrote:

> [The document] is not inherent, but the product of will, either to inform or to be informed – the second, at least, being necessary. If this will doesn't engender a response in the beholder, the information remains only potential. The object on which the information is written or inscribed is not yet a document. It becomes one when a question is asked of it and its information is activated.

It is in this sense that information institutions can be considered as storehouses of answers, as Swigger (1985) remarked. But this view may be overly

simplistic. It seems to imply that a person comes with a question, receives an answer, and then goes about their day. Sometimes, this certainly does happen, such as when a person searches for a sports score or a movie showtime. But other cases – perhaps the majority of them – are less clear-cut. In these cases, what happens once a person receives their documents? What if their question was not exactly answered? Information studies has tended to assume that once a person encounters a relevant document, they have become informed. But, for better or worse, things do not tend to work that directly – at least not always.

Documents do provide answers, but getting an answer from a document may not be straightforward. Moreover, sometimes documents just provoke further questions. What is going on in such cases? At heart, this is an issue with the field having ignored document use. Fortunately, some work has examined document use, as will be discussed in the next section.

2.4 DOCUMENT WORK AS QUESTIONING

As discussed above, documents can be conceptualized as answers. When considering document use, then, one might suspect that it is a matter of getting answers. Rather, as I will discuss in this section, document use is better conceptualized as provoking further questions.

An empirical approach to the document use has been christened *document work* by Ciaran Trace, one of the originators of this area of study. For Trace (2007), document work denotes all the behaviors and activities related to documents in a given setting, which includes working with existing documents and creating new ones. Document work has been researched in diverse disciplinary settings, including workplace studies, genre studies, and computer-supported cooperative work (Trace, 2011). From these various disciplines, document work (though not always by that name) has been investigated in numerous domains, including scientific practice, healthcare, government and nonprofit agencies, school, and everyday life.

A recent example of research in this vein is Wright's (2018) examination of the documents involved in a 1960–1961 research project at the Fiat automotive plant in Turin, Italy. The so-called "worker's enquiry" involved any number of documents, such as interview guides, transcripts, and field notes, and Wright examines how these documents were created and used, connecting this with how the study was reported and part of broader social movements in Italy in the 1960s. Among other findings, Wright's work shows how an exploration of document work can be a path to understanding the historical and social context of historical events – "connecting texts and contexts" (Wright, 2018, p. 310), as he writes.

As theorized, documents have material, social, and mental aspects (Lund, 2009), but research in document work has for the most part only explored the material and social (Buckland, 2015). Thus, there is a lacuna regarding research on the individual experience of individual document workers (addressing the

"mental" aspect of documents). In my view, this suggests an opportunity for information experience – and specifically, the budding research area of document experience (Latham, 2014) – to examine the processes around documents, from how they are created and used, to how they are adapted, adopted, changed, misused, ignored, forgotten, destroyed, etc.

In my own research, I have explored the experience of document work, particularly in the domain of art (Gorichanaz, 2017a). The French artist Paul Gauguin (1848–1903) provides a good example of how document work has the character of questioning (for more detail, see Gorichanaz, 2016a).

Known for his tropical and mythological subject matter, Gauguin is an important figure in the modern art movement, particularly given his influence to later artists such as Pablo Picasso and Henri Matisse. Early in his painting career, Gauguin grew disenchanted with European society and moved to Tahiti "to become a savage and create a new world" (Gauguin, 1997, p. 17). He installed himself in a hut (which he called the House of Pleasure), in which he made art – books, drawings, prints, paintings, and sculptures. Except for a 2-year visit to France, Gauguin again never left Tahiti. His "savage" life of pleasure and art gave him solace even in the face of ongoing financial issues and health problems, until his sudden death at age 54 (Sweetman, 1996).

When he left for Polynesia, Gauguin brought along a trunk full of documents. "I am taking along photographs and drawings," he wrote in a letter, "a whole little world of friends who will speak to me every day" (Gauguin, 1996, p. 42). These "friends" included reproductions of art he admired, postcards showing faraway lands, photos of exotic people, and numerous books (Figura, 2014), as well as his own sketches, which he considered to be "research" (Gauguin, 1996, p. 54). Relatedly, he described his personal notebooks as means of "classifying… ideas" (Gauguin, 1996, p. 126). All these documents served as artistic inspiration and reference materials.

> Gauguin often used one of these reproductions as the source for a painting. He might then use the painting he created from this reproduction as the source for a print, or more than one print, or even another painting, over the course of a number of years. (Figura, 2014, p. 17)

Yet Gauguin's document work was not simply reproduction, but transformation; it was productive reproduction (Brettell, 2007). As Gauguin himself wrote,

> He traces a drawing, then he traces this tracing, and so on till the moment when, like the ostrich, with his head in the sand, he decides that it does not resemble the original any longer. Then!! he signs. (Gauguin, 1997, p. 29)

For example, in several of Gauguin's works, he depicts Eve from the Biblical Genesis story. His original model for the first such work was an image of the Buddha at a temple in Java, which was one of Gauguin's postcards. From this model, he created a painting and sculpture, and later in turn he created woodblock and watercolor prints based on those works (Figura, 2014). Both Gauguin himself and art historians have seen Gauguin's document work as a form of inquiry. In Gauguin's own words, he had a "terrible itch for the unknown"

(Gauguin, 1996, p. 33). This is epitomized in Gauguin's monumental painting entitled *Where Do We Come From? What Are We? Where Are We Going?*

As we can see from Gauguin's work, even if individual documents provide information and answers, document work serves to foment meaning. Moreover, Gauguin shows us the depth of that word. Typically in information studies, terms such as information and meaning refer to the conceptual, cognitive, and procedural dimensions of knowing, but analyzing art as a form of document reveals what van Manen (2014) calls the *pathic* dimension of knowing, including inceptual and emotional meaning. Thus, insomuch as document work is an experience, it may foment pathic meaning through questioning. Gauguin was concerned not with representing the outward appearance of things but understanding them on a deeper level – showing inner truth (Gauguin, 1996, pp. 141–145). In his writing, Gauguin described this through the metaphor of music:

> I arrange lines and colors so as to obtain symphonies, harmonies that do not represent a thing that is real, in the vulgar sense of the word, and do not directly express any idea, but are supposed to make you think the way music is supposed to make you think, unaided by ideas or images, simply through the mysterious affinities that exist between our brains and such arrangements of colors and lines. (Gauguin, 1996, p. 109)

Discerning inner truth requires asking questions, but not the kind that are simply *satisfied* by answers – rather, the kind that reverberate, expand, unfold, and deepen through answers. The kind of question that asks itself and asks itself and asks itself again. This was an iterative process:

> In art, these sacrifices have to be made, stage by stage – groping efforts, half-formed thoughts lacking direct and definitive expression. Bah! for a minute you touch the sky and then it slips away afterward; yet this glimpse of a dream is something more powerful than any matter. (Gauguin, 1996, p. 41)

In addition to his depictions of Eve, Gauguin's questioning document work can be seen in his invention of the oil transfer – a process somewhere between drawing and painting. In the process, a sheet of paper is first coated in printer's ink, and another sheet of paper is set on top. Next, the artist draws atop this second sheet of paper; as the artist does so, oil from the bottom sheet is transferred to the bottom side of the top sheet. The side with the transferred oil becomes the finished piece, which was something like a reversed image of what the artist drew, but with many chance elements. The transfer was imprecise and unpredictable – some of the drawn lines did not transfer, and other serendipitous marks and textures came through unexpectedly. Gauguin was fascinated with the role of chance in this process. Figura (2014, p. 32) writes that Gauguin's obsession with the oil transfer

> …confirm[s] that for Gauguin it was the creative process itself – the process of taking one thing and working to transform it into something radically new – that mattered above all else.

The end product, an amalgam of intentionality and serendipity, became a new document that Gauguin could then work with further, using it as reference material for his next piece, on his continued quest for inner truth.

It is striking that Gauguin's *Where Do We Come From? What Are We? Where Are We Going?*, finished in 1898, was meant to be his last work. But for Gauguin, the questioning never ceased.

2.5 UNDERSTANDING AND QUESTIONING

Prior to moving to Tahiti, Gauguin was disillusioned with life in France. He wrote in a letter, "Right now I am letting all my artistic intelligence lie fallow and I doze, I am not… disposed to understand anything" (Gauguin, 1996, p. 42). In this quote, we see that for Gauguin, doing art was somehow connected to understanding. Recall that we can define understanding as the grasping of an interconnected body of knowledge (see Chapter 1). By this definition, an artist's understanding is, in part, an appreciation of the myriad ways that essential truths have been manifest in their work – truths that go beyond what can be expressed in language.

This was not unique to Gauguin; many artists do experimentation in their work, from the experiments done in individual works to those done over the arc of one's career. Artists are always testing new ideas and trying new techniques, and like Gauguin, many riff on recurring motifs in their work throughout their careers. Examples abound in the art historical literature; it may not be an exaggeration to say that this description characterizes every artist. In my own research with artists in Philadelphia, I observed artists modifying their technique within the development of a single piece, as well as artists creating pieces that were clearly in conversation with their previous works (Gorichanaz, 2020, 2019c).

More broadly, I suggest that all document work, not just artmaking, can be conceptualized as the building of understanding (see Fig. 2.1). And as we saw

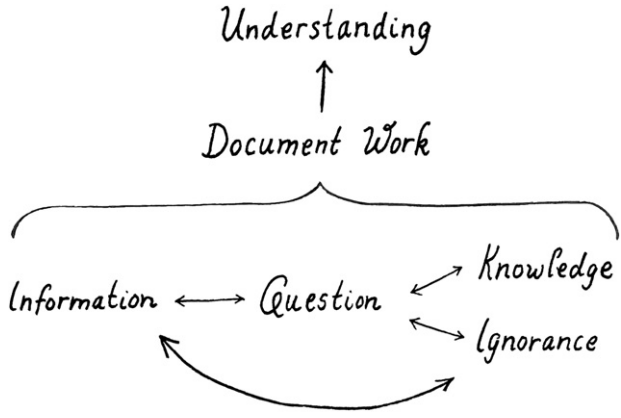

Fig. 2.1. The Role of Questioning in Document Work, and How Document Work Contributes to Understanding.

with Gauguin, document work is a matter of continued questioning; so we can say at least one path to building understanding is continued questioning. Of course, it is not the same question being posed over and over. Rather, the question is inflected and deepened as the document worker builds understanding, constructing, and/or exploring an interconnected web of knowledge. Document work entails questioning through all the senses and in many different ways. Working with a book, for example, we use our eyes, hands, noses, and maybe even mouths; we investigate the paratextual elements, scan with our fingers, flip pages, highlight, dog-ear, and maybe even turn it upside down; and we take notes, trace references, and connect this book with other works we know.

When a person gains information, it may be correct to say that they have acquired some knowledge. But this view misses the role of questioning in building knowledge, which is the drive to build further knowledge. To me, *understanding* better encapsulates this process: as a person builds understanding, they acquire knowledge as well as ignorance. Those of us in academia know this fact intimately, as we come across books and articles that reveal whole worlds of other books and articles that we have not read – and indeed will never have time to read. The more we know, the more we also come to know how much we don't know. As Gauguin wrote, "Yet if I believe I have found a great deal, then logically I must conclude that there still remains a great deal to be found" (Gauguin, 1996, p. 142). When in fact we are constantly building knowledge, it may feel like the proportion of our knowledge to our ignorance is falling. But even then our understanding is on the rise, because understanding points to not only the knowledge one has but also the questions.

2.6 A DANGER OF ANSWERING

As discussed above, information professionals have traditionally been concerned with providing answers. By definition, documents are what give answers. For most of the last century, scholars have focused on how to provide documents that can answer our questions. More recently, efforts have been made to extract information from documents to answer questions more directly. In this chapter, I have gestured toward another function of documents; documents can not only answer our questions, but through document work, they can also question our answers. If understanding is the goal, and building understanding requires continued questioning, then there may be a danger in simply providing answers that do not provoke further questions. Put differently, there is a danger in circumventing document work.

In a lecture originally delivered in the 1950s, Heidegger (1977) adumbrated just such a danger. In Heidegger's view, modern technology (roughly, technology since the Industrial Revolution) conduces a view of the world as a stockpile of resources to be harnessed. As such, we tend to see things in terms of established uses, and we do not see other possibilities. In other words, modern technology gives us answers but causes us to lose our questions. Our modern technologies seem to minimize document work, or at least etiolate it.

Consider, for example, direct answering in search engines. In the history of information provision, users' questions were generally answered only indirectly; users were given access to documents in which an answer may be found, rather than the answer itself. An implicit goal of work in information retrieval seems to be providing direct answers as much as possible. This trend is visible in today's web search engines, which are becoming more adept at providing direct answers to certain queries (e.g., the age of a celebrity, symptoms for a malady, ingredients in a dish, opening hours of a shop), ascertained through backend data extraction and processing. In large part, direct answering removes document work from the equation. Does this foreclose possibilities for understanding? Surely this is too strong a claim to make *tout court*, but it does seem that there is a danger in direct answering: namely, that it oversimplifies. Consider even such a seemingly straightforward question as the population of some city. If a user is given a particular number only, they may not know how old that number is, what methods were used to produce it, whether it counts the city only or the metropolitan area, etc. Further, certainly there are some questions that are not directly answerable by a search engine – the causes of complex phenomena, issues of taste, etc. So questions that arise for researchers, practitioners, and designers include how can a user's situation, current understanding, purposes, etc., be reliably ascertained? And what differentiates questions that can be directly answered from those that cannot?

Further, and more related to the discussion in this chapter, we might ask how to provoke further questions from direct answers. In the framework developed here, we might look to ways in which to engage users with the documentary sources of the direct answers in a questioning way. As a comparison to direct answering in search engines, we could consider reference librarianship, which seeks to strike a balance (based on the situation of each individual user) between simply providing answers and encouraging users to work with documents to construct answers for themselves. Of course, sometimes a direct answer may be given, such as when a reference librarian is asked for the name of a certain actress ("ready reference" questions); but depending on various situational factors the librarian may take advantage of "teaching moments" that present themselves.

A challenge with adopting understanding as an epistemic aim for information studies is that building understanding requires effort (perhaps even struggle), time, intention, and the like. And as Aldous Huxley wrote,

> …thought, time, attention, and trouble are precisely what the overwhelming majority of men and women are not prepared to give, unless motivated by a passionate desire or an imperious need. (Huxley, 1942, p. 30)

In Gauguin's work, the artist experienced this reality as well. Indeed, as we can see in his writings – particularly his books *Noa Noa* and *Ancien Culte Mahorie* – Gauguin hoped that his work would inspire people to think differently (Andersen, 1996). In letters, he wrote statements such as: "Ah, if only the good public would finally learn to understand a little, how I would love it!" (Gauguin, 1996, p. 148); "The public wants to understand and learn in a single day, a single minute, what the artist has spent years learning" (Gauguin, 1996, p. 67); and "I

am sometimes reproached with being incomprehensible precisely because people look for an explanatory meaning in my paintings, whereas there isn't any" (Gauguin, 1996, p. 211). Put differently, Gauguin hoped his work would inspire further questioning, and he was consistently discouraged when people came to his work looking only for answers. For Heidegger (1977), such is the modern age.

This discussion leaves us with numerous questions for research and practice to take up in the coming years: How can the sort of engagement described here be encouraged? How can questioning be instilled? How can wonderment flourish? And even if some of us can achieve these things for ourselves, is it possible to engage the rest of society? As a guide to such questions, Heidegger (1977) gave some advice. If we can pay heed to the way paved by questioning, he counseled, then we may find our very salvation down the road:

> The closer we come to the danger, the more brightly do the ways into the saving power begin to shine and the more questioning we become. For questioning is the piety of thought. (Heidegger, 1977, p. 341)

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Chapter 3

MORAL CHANGE

ABSTRACT

How does information change people's minds? Information studies has generally assumed that when a person encounters a piece of information, they are informed. This does illustrate becoming informed in some cases, but not all. For instance, sometimes misinformed people simply become more entrenched in their views upon encountering new information. This is because, for us humans, many of our beliefs are simply not based on an ongoing balancing of the facts, but rather on post hoc rationalization and cheerleading of particular views that are already held emotionally. Moreover, information informs us in ways beyond the provision of facts: it also shapes us as persons. In recognition of the ethical dimension of information, I suggest that information can also furnish moral knowledge, which can be defined as knowledge pertaining to how one should act in order to live best. Most of the discussions in philosophy on moral knowledge have focused on art, defined broadly to include literature and performance as well as visual art, and there has likewise been research on this aspect of art in information studies. Research in the information involved in religious conversion shows that people are informed, formed, and transformed by experiences with information and documents. I suggest that all information can contribute to moral knowledge and consequently to human understanding and action. To understand this, we must think beyond what is "objectively present" in an information object toward how that object interacts with the human experiencing it.

Keywords: Moral knowledge; understanding; belief; outcomes of information; moral change; art

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3.1 INTRODUCTION

Information is often considered as a reflection of reality. For instance, we think of information about a certain topic or event as representing facts regarding that topic of event. But information can also *construct* reality. On a social level, information affords and constrains social processes, leading to new arrangements of people and technology. And on an individual level, information engenders subjective experiences which inspire further thought, action, and being.

In this sense, information can be said to furnish *moral knowledge*, which I define as knowledge pertaining to how one should act in order to live best. In short, the concept points to how information can change a person's orientation toward the future. Moral knowledge may be propositional or practical in nature. In its propositional form, moral knowledge can be articulated in declarative sentences. For example, you may have knowledge of why and how to invest in your retirement, which is moral in the sense that it concerns your future.

More interesting, perhaps, is moral knowledge in the form of what Young (2001) calls practical knowledge. Whereas propositional knowledge is "knowledge that," practical knowledge is knowledge of how things happen or what things are like. Information can contribute to practical moral knowledge in two ways. First, it may directly show what things are like, which is practical knowledge in itself. That is, information can give us access to experiences relevant to moral judgment. And second, information can enhance a person's moral faculties by showing examples and allowing that person to experience things in their imagination. This gives us practice in responding to those situations, which bears on how we act in the real world (Elgin, 2017; John, 2001; Johnson, 1993). As Elgin (2017) writes of art, information may exemplify particular facets of the world, flagging them up for our attention, thereby showing what people could value in the world and guide their future actions.

Knowledge is traditionally defined as justified true belief. The notion of moral knowledge, then, may be criticized because it seems to imply the objective truth of a moral assertion. Here, I leave those discussions aside. Instead, I focus on moral knowledge in the subjective sense: what a person feels should be done, irrespective of whether that belief is ultimately correct. So for researchers in information experience, the question becomes: On the level of human experience, how does information interface with belief?

We might at first think of beliefs rather narrowly – beliefs about states of the world, whether present or past. But we have other sorts of beliefs as well, such as beliefs that something will happen (predictions), and beliefs about how things ought to be (moral views). People's beliefs about the future will influence what they do in the present; and so the connection between information and belief becomes crucial. We all have a stake in our shared future.

As part of this work, research in cognitive science has unveiled any number of cognitive biases, including the stickiness of bad information, belief echoes, the

backfire effect, in-group bias, and the like. At the time of this writing, the Wikipedia article "List of Cognitive Biases" includes almost 200 cognitive biases that have been reported in the literature. Some of this work has been critiqued on the grounds of ecological validity; much of the research in psychology, for example, takes place in artificial lab settings, and the findings may not bear out in real life. Information studies has an opportunity, if not an obligation, to contribute to this line of research, which clearly fits into the remit of how people search for, find, and use information. And yet, as Sullivan (2019) writes, information studies has for the most part ignored the related work being done in other fields, adopting instead a naive and simplistic view of how people become informed.

In this chapter, we will consider the moral component of information experience, focusing on the concept of moral knowledge in connection with information and belief change. In Kari's (2007, 2011) framework of outcomes of information, he describes "engaging with information as thing" as a possible outcome of information seeking, one that may lead to a number of outcomes of information, including use, communication, processing, and autonomous effects. Regarding outcomes, we can look at such dimensions as how a person thinks and acts, the positive or negative valence that information has on their lives, and the like. What is of particular interest in this chapter is how the nature of the information that one experiences plays a role in defining these outcomes. This chapter offers a conceptual toolkit for conducting further research in this vein, to at once further research on information use or outcomes as well as on the relationship between information form and moral experience.

3.2 MORAL KNOWLEDGE

Moral judgments are judgments about what is right or wrong, good or bad. Our moral judgments might include our views about torture, imprisonment, abortion, and the like. We often interpret information through the lens of our moral judgments; depending on the situation, morality may hold more or less sway. So we might ask, where do our moral judgments come from, and on what grounds do they stand? The field of moral epistemology examines whether and how we can justify our moral beliefs. An important and contentious concept in moral epistemology is *moral knowledge*.

Moral knowledge is, in short, knowledge about how one should live in order to live the best life one can. It may be personal (how I should live) or universalized (how all people should live). A strong definition of moral knowledge would suggest that a person has moral knowledge only when their moral beliefs are both true and justified.

Under such a strong definition, of course, it is difficult to see how we could explain moral disagreements. Speaking of the truth of moral beliefs seems to imply an an objective moral reality. But does such a reality exist? And as humans, how could we ever know for sure? Are there moral facts in the way that

there are logical facts such as 2 + 2 = 4, historical facts such as that the Declaration of Independence was signed in 1776, empirical facts such as that you are reading this page right now, and so on? Whatever our answer to that question, we do seem to have some intuitions we might consider moral facts, such as that pleasure is preferable to pain, and that it is unjust to punish someone for a crime we know they did not commit. (As an aside, we should remember that skeptical arguments bedevil the concept of knowledge in general, not just moral knowledge.)

For our purposes, we can adopt a weaker definition of moral knowledge, one that is not absolute so much as it is pragmatic and relational. In information experience, we are interested in what people take to be their moral knowledge; thus it is less important whether what they believe to be moral knowledge is ultimately true and justified. We might wish to call this simply moral belief – yet I prefer the term *moral knowledge* here because, experientially, some of people's moral beliefs have the force of knowledge, while others can be recognized to be mere beliefs. For example, I might recognize that my views on capital punishment are contingent beliefs, while I might feel that my views on torturing children actually do reflect knowledge. When it comes to information experience, the aspect of interest is how information contributes to one's moral views, whether belief or knowledge, and subsequent action.

3.3 EXAMPLES: CONVERSION AND CLIMATE CHANGE

3.3.1 Information in Religious Conversions

One major sphere of human life in which moral knowledge plays a role is religion. There have been a handful of studies investigating religious practice from the perspective of human information behavior. For instance, a suite of studies examines the interplay between one's spirituality and documents among Christians. Siracky (2013) has looked at spiritual journal-keeping among Catholic young adults, and Freeburg (2018) has studied how Christians' beliefs are open to external information. In my own work, I have examined the effects of technology and format on the experience of reading the Bible (Gorichanaz, 2016b). There has also been research on the information behavior of Christian clergy, for instance as they prepare sermons (Freeburg, 2015; Harris & Roland, 2014; Wicks, 1999), as well as how Catholic women discern a call to a religious life (Hickey, 2017). To date, there does not seem to be any empirical information behavior research on contemplative traditions outside the Abrahamic traditions.

In this literature, one paper that is particularly relevant for information experience and moral knowledge is that of Vamanu and Guzik (2015), who studied the information behavior of converts to Christianity and Islam. They took a hermeneutic perspective, which posits that a person comes to a text with an eye for possibility, seeing the text as a horizon of "things that it is possible for [the reader] to be" (White, 1984, p. 17). The reader can navigate this horizon as they wish,

steering toward or away from particular perceived elements; and thus the reader is involved in judgment and negotiation regarding the kind of person a text invites them to become. In their study, Vamanu and Guzik explore religious reading through this lens, but it is worth noting that we can consider even secular reading hermeneutically. Vamanu and Guzik discern three ways of reading religious texts:

(1) **Informative reading**. First, people read to fill gaps in their knowledge and gather facts about the faith. This reading may be sympathetic or antipathetic to the faith from the start.
(2) **Formative reading**. Next, people sometimes read to invite modification to their own views, allowing them to reconsider their knowledge base. Here the goal is not to acquire more information, but to make sense of the information one already has. Formative reading extends to practices such as prayer and recitation.
(3) **Transformative reading**. Finally, people read for deeper change, including spiritual growth, self-understanding and an enriched identity. This form of reading is about changing one's sense of self and way of life.

Though the notion of conversion might imply a sudden or one-time shift in one's thinking and way of being, Vamanu and Guzik (2015) found that these types of reading may continue throughout a person's life.

Vamanu and Guzik (2015) looked primarily at how people engage with sacred texts, such as the Bible and the Quran, but other texts can play a role in shaping people's moral knowledge regarding religion as well. In today's media climate, it is interesting to consider the role played by new media. An example of conversion in the opposite direction – falling from faith – is the story of Megan Phelps-Roper, whose recent memoir *Unfollow* (Phelps-Roper, 2019) chronicles her changing relationship with the Westboro Baptist Church, and particularly the role of Twitter therein.

The Westboro Baptist Church, founded by Fred Phelps in 1955, is a parish in Topeka, Kansas, that became well known for its views and picketing against homosexuality, other religious groups, racial groups, soldiers, and politicians. According to the church's website (at the time of this writing, the URL is http://godhatesfags.com), their central doctrines include that God is hateful, that homosexuality is a sin, and that we have a duty to rebuke our neighbor. The Westboro Baptist Church has been defined as a hate group, and its actions have been condemned by any number of organizations, both secular and religious. Today, the members of the Westboro Baptist Church are comprised mostly of the Phelps extended family.

As she writes in her memoir, Phelps-Roper (2019) was born into the church, and she was a member until 2012. By that time, she was the church's social media manager, working as its Twitter spokesperson, among other duties. Most of her audience came to her with scorn, but some individuals engaged her in honest conversations. As she says, these conversations planted seeds of doubt within her. Through Twitter, she began to discern inconsistencies in Westboro's doctrine. Eventually, these doubts mounted enough to bring her to leave the church in 2012.

Today, Phelps-Roper (2019) credits Twitter as a major part of her conversion experience. Reflecting on this, she says that her most productive experiences on Twitter had four qualities: neither party assumed bad intent of the other; both parties asked earnest questions of the other; both remained calm and composed; and both took the time to articulate their arguments to the other in order to be understood. In her view, digital communications platforms, though much maligned in the public sphere today, offer the possibility of a buffer of time and space between frustrated people, giving them the ability to pause or walk away, take a breath, and even change the subject and return to their argument at a later time.

We might connect Phelps-Roper's experience on Twitter to the three types of reading identified by Vamanu and Guzik (2015). At first, perhaps Phelps-Roper's engagement on Twitter began at the informative level, but over time it became transformative. Her account also shows how such reading may not just be a person's engagement with an already-existing text, but also part of an ongoing conversation.

The discussions of religious conversion above concerned, for the most part, individual's belief change. Indeed, beliefs are most precisely properties of individuals. And yet we can also speak of societal beliefs, such as in the concepts of zeitgeist and public opinion. As such, we can also look more broadly at the way information can change societies.

3.3.2 Information for Social Change

In what ways are public opinions shaped by information? This question has been taken up primarily by communication studies, which is interested in the intersection between mass communication media, such as advertising and journalism, and public views and behavior. In information experience, we are most interested in how the form of that information affects its outcomes. For example, research on advertising for charities suggests that telling stories about particular people in need is more effective for garnering support than providing generalized statistics or facts (Green, 2006). For many of us, climate change is a top-of-mind issue. Advocates are constantly seeking better ways to communicate the urgency of the issue with broader publics and to coordinate positive responses.

One microcosm of these dynamics can be seen in the "anti-plastic straw" movement in recent years. This movement has been traced back to a single video that went viral in 2015. The video, recorded by Christine Figgener, depicts researchers pulling a plastic straw from a sea turtle's nose in a protracted, bloody process (Sea Turtle Biologist, 2015). The video description reads:

> This video shows graphically why plastic waste is detrimental to marine life, especially single-use plastics (such as straws, which are one of the most redundant items). This turtle suffers from an item that is human-made and used by most of us frequently.

Relatedly, a recent marine biology paper claims that half of all sea turtles have ingested plastic (Schuyler et al., 2016). It is easy to see how such information adds

to the growing anxiety that people have about the amount of nonbiodegradable plastic we are using.

What is interesting for our purposes is the form of information in this change-making video. Prior to publishing the video that went viral, Figgener had long been an advocate of environmentalism, focusing on marine life in particular. Figgener knew of the problem of plastics in the ocean, as a small piece of the climate change picture, and she wanted to effect change. Since before her career in marine biology, Figgener was a freelance photographer. And so she endeavored to use photography as a medium for effecting change (Zukerman, 2018).

Originally, she thought that she could make change by showing people beautiful images of sea turtles – on the assumption that seeing such pictures would inspire people to want to protect nature. Her photographs in this vein are visible at https://puranatura.zenfolio.com. In an interview (Zukerman, 2018), Figgener said,

> I was still believing that I need to show the flawless beauty of nature. So I always avoided filming the really gruesome realities that we're facing a lot of times because I thought that you needed to convince people with positive images.

But she found that these images did not have the effect that she wanted. As she wrote,

> I have always loved documenting the beauty and awesomeness of nature. While I prefer to use positive imagery to tell a story, to share that there is still so much magic in our world, one day I had had enough. (Figgener, 2017)

One day, her team discovered a turtle with something lodged in its nose, which they thought was a barnacle. Figgener got her camera to film the extraction because it was out of the ordinary and worth documenting. But during the procedure, the team discovered that the object was actually a plastic straw.

> I really said, okay, now this cannot just rot away on my hard drive, this really needs to be out [to] raise awareness… I'm so tired of pretending that everything is fine because it's not. I have the evidence right here on my camera, and I'm just going to upload it. (Robinson & Figgener, 2015)

The video took off. Nonprofit organizations such as The Last Plastic Straw and Strawless Ocean have been using the video in their campaigning materials, and by 2018 there was widespread awareness and even corporate action. For example, Starbucks pledged to eliminate plastic straws from its chains globally by 2020 (Starbucks, 2018). In a *Time* article, Figgener's video was called "a good tool for environmental activists and lobbyists to use at presentations that elicits compassion" (Rosenbaum, 2018, para. 5). It is interesting that Figgener's disturbing video had the desired effect, while her images of beautiful turtles did not.

As another example, we can consider two works of art made in Yellowstone National Park (Gorichanaz, 2018c). The first, a sweeping, gorgeous landscape by Thomas Moran, shows the beauty of nature in the same way

that Figgener's turtle photographs do. And, according to history, Moran's paintings were crucial in the establishment of the US National Park Service. A more recent example of art in Yellowstone is a photo series by Michael Nichols; in 2014 he was commissioned by *National Geographic* to document the tension between humankind and wilderness. He overtly sought to spark a concern for conservation; "The only way the public will care is if we make a picture… Data can't convert" (Madison, 2014, paras. 15–16). A striking photograph from this series is *Bison Rut*. In the photo, three bison dominate the foreground, hulking amidst the sagebrush, red dust stirring at their feet, legs a motion blur. They may be fighting or playing. In the background two automobiles face us. Their doors are open, and people are standing behind them, cameras obscuring their faces. Perhaps they are using the doors as shields, just in case one of the beasts makes a sudden go at them. Or perhaps it's a matter of convenience, so they can drive away more quickly as soon as they've gotten the picture.

Why is it that beautiful imagery might have worked for Moran, but not for Figgener? Of course, the context in which each image was created and shared must be taken into account. Today's media climate is much different than that of the 1870s, given the saturation of images and the nature of internet communication. Could it be that we have become desensitized to images of sweeping beauty, seeing as they stare back at us banally from our desktops and calendars? Perhaps they have become inert, and being effective in the modern day calls for more ironic or shocking visuals. This is an important question for those of us concerned with climate change. In the discourse to date, we have tended to appeal to scientific information. But if artistic forms of information can provision the sort of moral knowledge necessary to heal our relationship to the world, then perhaps we can also appeal to art. If that is the case, then it is worth thinking about what sort of art will serve best.

3.4 MODELING INFORMATION AND MORAL KNOWLEDGE

For most of its history, information studies has assumed that the information within a document is self-evident, to the point that many may have difficulty distinguishing the concepts of document and information. As such, information studies has assumed that if a person encounters a document, then they become informed. Thus the field has focused its attention on what comes before an encounter with a document, rather than after. This latter stage has been, in small part, the purview of other fields, such as literary theory and its subfield of reader response criticism. But reader response limits itself to literary reading, ignoring much of what can be considered information.

In this section, I propose a model of information experience and outcomes that brings insights from reader response theory to information studies (see Fig. 3.1). In this model, whenever a person encounters an information object, they bring some of themselves to that experience. As part of that

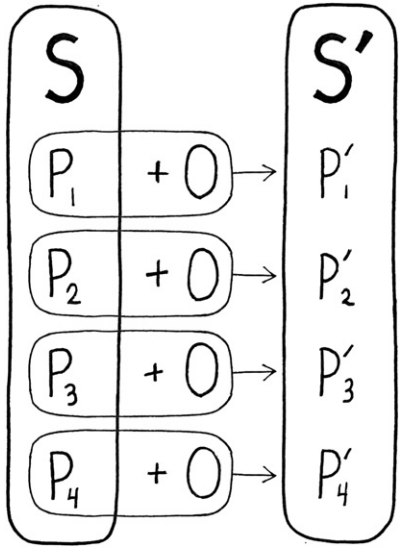

Fig. 3.1. A Model of Personal and Societal Change through Information Experiences. *Note:* A person *P* encounters an information object *O* and changes as an outcome of that encounter. As a group of people constitute a society *S*, when people change, their society changes, too.

experience, a person (or the object) may be changed. And not only might individual people be changed, but also whole societies; through multiple individual encounters and changes, as well as communal encounters, larger groups of people may be changed.

3.4.1 The Character of Document Experience

A document is a particular conglomeration of information. Much of the information we interact with comes to us in the form of documents. As such, in our discussion here it is worth considering what has been written about document experience.

The question of what a document is has been discussed for the last century, with renewed interest since Buckland's (1997) famed paper. The various definitions of the document that appear in the literature refer to proof, evidence, observation, study, presentation, handling, preservation, and the like. Implicit in all of these definitions is the presence and activity of at least one human being. Without a human actor, an object cannot be observed, consulted, or studied, and there is nobody to judge proof, be presented to, reconstitute, handle, transport, or preserve (Gorichanaz, 2015a). If there is no person involved, then a book is nothing more than a weighty collection of inked leaves – it is not a document. We might call it an *information object* for want of a better name. An information object by itself is but a potential document, what has been called a dormant

document (Couzinet, 2015). Once a person encounters it, a document is created (Buckland, 2015; Meyriat, 1981).

If it is accepted that a document exists only along with a human actor, it follows that the human actor must be considered inextricable from the document. Documents, then, are co-created; both the information object and the human actor contribute to the formation of a document. Drawing on Rosenblatt's formulation of reader response theory, Latham (2014) described this as a document transaction. According to Latham's conceptual model, document transactions result in experiences that can be located along the efferent–aesthetic continuum, in which efferent experiences are characterized by extraction for later use (e.g., finding facts), and aesthetic experiences are of the moment (e.g., feeling something).

We can understand person and object a bit more deeply, as Latham and I explored in a later paper (Gorichanaz & Latham, 2016). In brief, both the person and the object bring two kinds of information to the encounter, roughly some from "inside" and some from "outside." The object furnishes intrinsic and extrinsic information. Intrinsic information is that inherent to the object itself, i.e., its material properties. This includes its text, coloration, shape, material, age, etc. Extrinsic information is the socially contextual information associated with the object. This often includes the object's provenance and supplemental knowledge about how it was produced or otherwise came into the world, as well as its infrastructural context.

Just as objects have dimensions that are internal (intrinsic) and external (extrinsic) to the material of the object, people have dimensions that are, in a certain sense, internal (abtrinsic) and external (adtrinsic). Abtrinsic information is that regarding a person's emotional and affective states – whether they are extremely hungry, recently suffering a breakup, or on cloud nine. Finally, adtrinsic information is the personal historical information that comes to the fore through memory associations during a document transaction, which may be individual or social.

To be sure, these four types of information are intermingled and difficult to separate in real-life examples. Rather, we suggest that they are useful as a deductive, analytical framework. This can be illustrated with an example of a woman at an airport holding her boarding pass. The boarding pass is a piece of paper with words and numbers printed on it (intrinsic information) which the woman knows is necessary for the airport staff to allow her passage through security and onto the plane and for her to identify her gate and seat (extrinsic information). The woman is upbeat but perhaps a bit anxious (abtrinsic information), and she is reminded of previous travel experiences (adtrinsic information). All in all, her boarding pass has, in this instance, evidentiary meaning as her ticket to an exciting impending vacation, contributing to the quickening of her pace. These four elements converge to form the document as experienced by the woman. Yet as even this simple description illustrates, intrinsic and extrinsic information are interwoven (the information printed on the boarding pass relates to the document's social function, and the intelligibility of its inscription relies on social conditioning), and so are abtrinsic and adtrinsic information (memories of prior vacations make the woman all the more excited).

3.4.2 Change Resulting from Experience

What the above example shows is that, resulting from a document experience, any of the four types of information can be changed. For example, intrinsic information is changed when a museum-goer vandalizes a Rothko; extrinsic information is changed when the authenticity of an applicant's college transcript comes into question; abtrinsic information is changed when the sheer attractiveness of a lifelike sculpture causes heart palpitations in a lovesick viewer; and adtrinsic information is changed when a documentary on sweatshop labor forever changes how a person views their clothing.

When it comes to moral knowledge, we are most interested in the ways a person can be changed from an information experience. As we can already see, this goes far beyond changes in a person's mental store of facts (what a person "knows"), such as that captured in the Brookes (1974) equation, $K(S) + I = K(S + \Delta S)$, which models how an input of information leads to changes in a knowledge structure.

Taking a more expansive approach, Kari (2007) presented a typology of the ways in which experiencing information can change a person. These *outcomes of information* are modulated by the person's level of activity: actively using information on one hand, and passively being affected by information on the other. The active use of information can be typified by the dimensions of physicality, sociality, and informality, and the passive effect of information can be typified by positivity ("helps" vs "hurts"), as well as physicality, instrumentality, novelty, directionality, and magnitude. Kari (2007) suggests that there may be other dimensions of information outcomes, but his conceptual framework is limited by what has already appeared in the literature (for instance, he points out that very few studies at his time of writing explored the hurtful effects of information). In a later work, Kari (2011) presented other possible outcomes of information, based on a study of spiritual messages. He found that outcomes of information can include: processing information (cognitive), dispositions to information (affective), communicating information (social), using information (functional), and effects of information (autonomous). A synthesis of these two contributions is presented in Fig. 3.2.

Kari's work offers a vocabulary to discuss with some precision the moral knowledge and action – i.e., the changes to a person – that may result from a given information experience. Moreover, further research may be able to refine this framework.

3.4.3 From Individual to Social Change

Information studies is not only interested in individual change but also social change. This interest goes back at least to the public library movement in the United States (if not further), wherein the focus of information provision was on improving the citizenry. In the realm of theory, this was expressed in Egan and Shera's (1952) social epistemology.

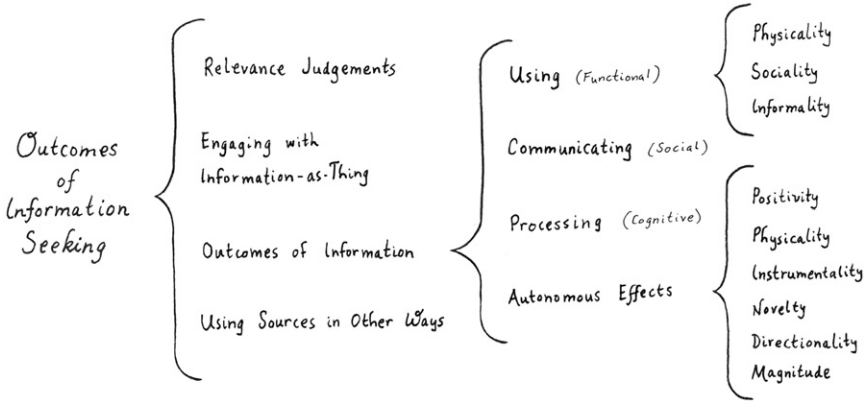

Fig. 3.2. Visual Synthesis of Kari's (2007, 2011) Conceptual Frameworks of Outcomes of Information Seeking. *Note:* The rightmost column shows the dimensions of these activities that have been operationalized in the literature. (Kari notes that other dimensions are certainly possible.)

To be sure, for much of the twentieth century, most scholars in information studies were interested first in technical systems and then in individual cognition. For the past 20 years or so, there has been an emphasis on the social aspects of information (Hartel, 2019). In each of these turns, scholars tended to focus on only one aspect of information, rather than considering how the technical, individual, and social are intertwined. At present, the field tends to over-emphasize the social, overlooking the role of individual agents (and objects, for that matter) within what we call "the social." A similar claim could be made for fields across the social sciences, as Latour (2007) has argued.

To draw the connection between the individual and the social, we can consider how, as individuals are changed in information experiences, so too can societies come to be changed. Inghilleri (1999) makes this point with respect to flow experiences. As he discusses, the cultural transmission of information follows an emergent trajectory – a point which has separately been discussed by Bates (2005a) in her framework of information evolution. For Inghilleri, human culture is maintained and reproduced through acts that require individuals' psychic energy. He writes that, through this coupling, "cultural structures and experiential structures are repeated over time in a harmonious fashion" (p. 121). For another discussion, we can look at Josef Pieper's (1952) essay on how individual leisure pursuits form the basis of human cultures more broadly.

In a sense, this is simply a matter of the changes from many experiences adding up over time. The relevant dimensions here include the social context, the object, and time. In these experiences, individuals may be alone or together; and it matters who we are together with (e.g., loved ones, classmates, political adversaries), alongside other contextual factors. If we are interested in how change diffuses throughout a society, the structures of the networks that make

up that society are relevant. We may speak of experiences with one particular object, or with different objects. (When we say "one particular object," we may be making reference to any level in the WEMI model.) And we may look at these experiences synchronically (happening at one time) or diachronically (across time).

For example, we might look at the information experiences of reading a book – which, nowadays, is usually done alone. But many people can read the same book at the same time (such as with a new release, or a city-wide reading program), and certainly many people may read the same book across time. And to the extent that people discuss their reading with others, this may shape the experience of their reading. Temporality certainly plays a role here; the outcomes of reading Plato's *Republic* may change depending on the century in which it's being read.

Though the outcomes of any given information experience may not say much about the broader trajectory of a society or culture, trends may be observed over time. An analogy may be found in the way scientific paradigms develop, as described by Kuhn (1962). Normal science, Kuhn says, proceeds within a given set of theories and procedures. Little by little, anomalies are discovered, but these are ignored, as the established theories and procedures do not offer guidance for dealing with them. Over time such anomalies accrue, and in response some scientists begin to conduct exploratory, "extraordinary" (p. 87) research. Eventually, this research coalesces into a new set of theories and procedures for addressing the phenomena of interest. While these may be attacked by some, they are adopted by others, and eventually these new theories and procedures constitute a new paradigm. (As an aside, in our own field, there has been some commentary on paradigm shifts, or "turns." For a recent contribution in this regard, see Hartel (2019).) For an example of what we would more squarely consider social (moral) epistemology, we can look at Martha Nussbaum's examples of how novels in the nineteenth century contributed to society's changing views around homosexuality (Nussbaum, 2010).

3.5 CONCLUSION

In this chapter, we have considered how information experiences may lead to changes in moral knowledge – or beliefs in general – as well as action. The discussion has emphasized how information can construct reality and not just represent it, and how sometimes the form of information matters more than its content. With this discussion of the ethical dimension of understanding, we have nearly completed the first part of the book. In the next chapter, we will consider the prospect of designing for understanding.

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Chapter 4

DESIGNING FOR UNDERSTANDING

ABSTRACT

How is understanding built? This chapter operationalizes the discussion from the previous chapters to offer some design strategies for creating information systems that promote the building of understanding. These strategies are, namely, multiple perspectives, slowness, and intentional struggle. Examples of and existing literature on these design strategies are discussed.

Keywords: Slow; perspective; informed learning; desirable difficulties; productive struggle; understanding

4.1 INTRODUCTION

So far, we have examined the relationship between information experience and understanding. Understanding can be viewed as the epistemological dimension of information experience, but it need not be strictly conceptualized in terms of mental content. I defined understanding as the grasping of inferential and explanatory relationships among a body of information, and this information may be bodily, documental, cognitive, etc. We also explored two other facets of understanding: the process of building understanding, which has the character of questioning (and again, questioning is done as much with the body as in an armchair); and the concept of moral knowledge, or knowledge of how one ought to think and be, which is a constructive force in any understanding.

What can we do with this? Ultimately, I hope that these theoretical principles can lead to the design of information systems that allow people to build understanding through their information experiences. It may be that the foregoing chapters inspire some to conduct further research or design systems that leverage some of the concepts discussed. All the same, it may be useful to consider some

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more concrete design strategies for operationalizing understanding. To that end, this chapter presents a few applied principles for us to consider in designing information systems – whether a library program, a mobile app interface, or a course syllabus.

There are three groups of design strategies here: perspectives, slowness, and struggle. These three groups originally arose as themes in my descriptive research on how ultrarunners build understanding of the sport through their training and racing (Gorichanaz, 2017b). It later became clear that these themes also connect to various threads of design research. Thus, this chapter explores the extent to which they might be not only descriptive but also prescriptive – though I hasten to add that I mean *prescriptive* not in the sense of a mandate, but rather an invitation.

4.2 DESIGN STRATEGIES FOR UNDERSTANDING

4.2.1 Multiple Perspectives

Briesen (2014) suggests that we build understanding by regarding a phenomenon from diverse perspectives. As multiple perspectives are incorporated, a progressively more sophisticated and multidimensional view of the thing is attained, leading to progressively increased understanding. That is, the more perspectives one considers, the better one's understanding can be. What this means for design is that a person can build understanding if they are presented with or prompted to seek out multiple perspectives from which to consider a given phenomenon. This principle underlies much of our discourse today; it sits at the heart of John Stuart Mill's argument for free speech in *On Liberty* (Mill, 1859), for example, and it grounds the strategy of triangulation in empirical research.

In my own research with ultramarathon runners, I found that athletes do just this sort of work to improve their understanding – in this case, their understanding of how to succeed in one particular race, but more broadly they sought to improve their understanding of the sport and of themselves as athletes (Gorichanaz, 2017b). All my participants described, as a key part in preparing for and performing in the race, the collection of multiple perspectives. In their preparations, the participants sought and engaged with a number of external information sources: the textual descriptions, elevation profile, and course map available on the race website; GPS data from participants in prior years on websites such as Strava; photographs showing the terrain at various points along the course; videos on YouTube posted by other participants in prior years; race reports from participants in prior years; and in-person conversations with participants from prior years. Referencing external information sources was not limited to before the race; some participants brought printouts of, for instance, the list of aid stations along with them as they ran, and all of my participants mentioned the informational value of having conversations with other runners on the course, particularly those who had run the race before. And understanding for these participants is not based solely in interacting with external information

sources; rather, it is also built through bodily experience – or corporeal information. One participant, for example, who had run the course many times over the years, said his understanding of the course deepens each time he runs this event, as he experiences the course under different conditions. In his view, the lived experience provides information that cannot be encapsulated in text or even imagery.

A powerful strategy for sparking perspective taking is the presentation of analogies. In my research with ultrarunners, many of my participants used analogies to generate new perspectives on ultrarunning. One, for instance, was relatively new to ultrarunning but had experience in triathlon. He described how he thought of his drop bags like the transition zones of a triathlon, allowing him to leverage his understanding of how to move through a transition zone efficiently in a triathlon to do the same with his drop bags during the ultramarathon. He also described thinking about ultrarunning as driving on a highway: When driving, he said he tends to match his speed to the cars around him; he found that he tended to do the same regarding his pace during the race. Such analogical thinking has previously been identified in the information studies literature as crucial for creativity (Bawden, 1986), and indeed, more generally, as the very mechanism by which human cognition functions (Hofstadter & Sander, 2013). To help people build understanding, then, designers can invite users to explore and integrate multiple perspectives. Within this rubric, analogies may be a powerful tool. For example, systems might present users with two pieces of information and prompt them to consider how they might be connected.

This approach to designing information systems has been formalized in a handful of learning design models stemming from the field of information literacy, which I will briefly discuss in turn: informed learning design, information experience design, and informed systems. Those interested in designing for understanding via multiple perspectives, particularly in educational contexts, may find value in framing their work in terms of one of these approaches.

Informed Learning Design

Informed learning was developed by Bruce (2008) as a pedagogical model for engaging students with diverse forms of information as a way for them to enter into course content. As a paradigm, it focuses on students' information experiences rather than on their skills or knowledge (narrowly construed). Informed learning design is a design model rooted in the informed learning paradigm, and it recognizes that students' learning outcomes depend at least in part on how they experience information throughout the learning process (Maybee, Bruce, Lupton, & Pang, 2019; Somerville, Imhof, Bruce, & Abdi, 2018). In informed learning design, an instructor develops learning goals and creates an environment that enables different sorts of information experiences to arise.

The paradigm is rooted in the variation theory of learning, which posits that any given phenomenon can be regarded in a variety of ways, and when a student is exposed to more of these varieties, their experience deepens. To

recapitulate an example from the *Encyclopedia of the Sciences of Learning* (Orgill, 2012), if the phenomenon of interest is the concept of a ripe banana, a teacher might find that the banana's being yellow is a key part of understanding the concept; variation theory posits, thus, that a learner must experience bananas that vary in color in order to understand what makes a ripe banana ripe. Researchers in informed learning design (or indeed of information experience more broadly) may work to discern the perspectives of critical interest and the existing varieties of student experiences that may be harnessed or perhaps reshaped through curriculum design. To that end, much of this research is rooted in phenomenography, which is a philosophical platform for studying variations in experiences.

Information Experience Design

Informed learning design centers on formal educational settings, but certainly classrooms are not the only places where learning happens – or, in the language of this book, where understanding is built. To that end, information experience design has emerged as a related design paradigm.

Like informed learning design, information experience design focuses on variation. Information experience design is a participatory design approach. It begins with a discovery phase aimed at surfacing the variations in the information experiences of the target group: what information is for them, how they engage with information, etc. These findings are then employed with the aim of helping members of the target group experience information in more diverse ways. Not only this, but the paradigm aims to contribute to social progress by fostering inclusion, organizational change, and transformative experience. This design paradigm has been applied to learning in organizational settings, and more recently it has been applied to social issues such as immigration (Abdi, Bruce, Partridge, & Watson, 2019).

As a design research approach in information studies, information experience design has been pioneered primarily by Elham Sayyad Abdi through her work at Queensland University of Technology. It is worth noting here that Information Experience Design is also a master's degree programs at the Royal College of Art and the Pratt Institute School of Information, as mentioned in this book's introduction. These programs are rooted in the arts but emphasize interdisciplinary research and multimodality, guiding students through the production of data visualizations, experimental techniques, exhibitions, and installations.

Informed Systems

Information experience design is also resonant with the Informed Systems codesign approach. Like the two approaches described above, Informed Systems is rooted in variation theory and seeks to connect research and practice.

One of the unique aspects of Informed Systems is its aim to draw a link between individual understanding and collective understanding (Somerville,

Chaudhary, Mirijamdotter, & Sayyad-Abdi, 2019), which it accomplishes through helping designers create systems that stimulate systems thinking (i.e., big-picture thinking). In the context of this section, we can see systems thinking as a mode of multiple perspective taking. As Somerville et al. (2019) write, Informed Systems "recognizes that knowledge emerges through exchange of resources, ideas, and experiences," not just engaging with formal sources of information such as textual articles (p. 2).

4.2.2 Slowness

In *The Founding Fish*, a cultural history of the shad in the United States, John McPhee compares the process of understanding to that of shad fishing:

> It's a bad idea to horse a shad. That is, if you become impatient or for any other reason try to shorten the story by muscling the fish into submission, you'll almost certainly lose the fish. (McPhee, 2002, p. 16)

In other words, the supposed fast-track to understanding may lead to an impoverished, unsatisfactory result.

Simply put, understanding takes time. Many seemingly overnight successes spring from years of travail; and in the same way, though understanding may seem to appear in single "aha!" moment, it is really the culmination of a historical trajectory across months or even years.

When it comes to speed, the concept of understanding is, perhaps ironically, somewhat antithetical to the current of information technology development. At the risk of oversimplifying, information studies has historically focused on speeding things up, creating information systems that satisfy users' information needs as quickly and efficiently as possible (Day, 2014; Farman, 2018; Setton, 1960). But, as McPhee writes, some things cannot be sped up felicitously. The information may come easily, but perhaps at the cost of understanding.

In the terms of Heidegger (2010), such conscious dealings with information contribute to the emergence of the authentic self, whereas in unconscious dealings a person is swept up in the flow of the anonymous "they." In this way, conscious dealings with information – which unavoidably take thought, time, and trouble – contribute to both ontological and ontic understanding.

A focus on understanding helps us see the wisdom in an assertion widely attributed to Gandhi: "There is more to life than increasing its speed." Attending to information experience is crucial in furthering this work. And so, slowing down the user emerges as a design strategy for facilitating understanding. How can information studies slow people down? This remains a challenge, but there are some nascent movements toward developing "slower" information technologies.

Slow Technology

When McDonald's opened one of its restaurants at the Spanish Steps in Rome, journalist Carlo Petrini published the manifesto that kicked off the

Slow Food movement. Whereas fast food seeks to minimize the time gap from hunger to satiety, emphasizing homogeneity and low prices, Petrini envisioned Slow Food as a counterpoint, encouraging people to enjoy eating out as an event, emphasizing regional and seasonal cuisines, and promoting small businesses.

The Slow Food movement took root, and since Petrini's 1986 manifesto, its philosophy has spread into countless other spheres of life. The Wikipedia article for "Slow movement" now comprises 28 sections, including cinema, fashion, sex, and travel. As early as 1999, Geir Berthelsen articulated a vision for a Slow Planet as part of his foundation of the World Institute of Slowness.

It is unsurprising, then, that a movement for Slow Technology has emerged. This work is rooted in a famous article by Hallnäs and Redström (2001). Slow Tech argues that technology should do more than make people's lives more "productive" and "efficient," which is the aim of most technological work even today, whether explicitly or implicitly. Rather, for Slow Tech, technology should understand and respect human experience, investigating and perhaps drawing attention to what makes life worth living in the first place (which may not be about economic productivity). Theorists and designers in the Slow Technology movement explore how technology might come to be embedded in our lived environments without eviscerating them (Grosse-Hering, Mason, Aliakseyeu, Bakker, & Desmet, 2013). Some design research products in this vein include a mobile application that encourages introspective reflection (Cheng et al., 2011) and a photobox that prints photos at unexpected intervals (Odom et al., 2014).

Slow Information

In recent years, we have seen the advent of a Slow Information movement. Situating their work explicitly within the Slow movement, Poirier and Robinson (2014), for example, propose the information balance model, a conceptual framework for information behavior research and the design of information systems. In this model, people balance information inputs and outputs through a medley of behaviors, such as reflecting and considering, which can be done consciously or unconsciously.

As Bawden and Robinson (2016a) write, the information balance model may be suitable for describing the building of understanding. This model, in concert with the discussion at hand, suggests that, the more these behaviors are done consciously, the more they contribute to understanding.

Though disconnected from these efforts, professor Vincenzo, Di Nicola has published "Slow Thought: A Manifesto" (Di Nicola, 2018), which describes from a philosophical perspective some of the behaviors and qualities conducive to Slow Information and, consequently, the building of understanding. In Di Nicola's vision, thought can be an *event*, that is, "an unpredictable break in our everyday worlds that opens new possibilities" (para. 4). Steps to realizing this vision include walking (literally and metaphorically), expansion through time and space, playfulness, and deliberateness; Di Nicola's

discussion offers some handholds from which information designers might spring upward.

An example of a design intervention in this vein is Slow Search, an online search tool that promises better results for users who are willing to wait longer. In user testing of this system, Burton and Collins-Thompson (2016) found indeed that many users were willing to wait several minutes for higher quality results.

4.2.3 Intentional Struggle

It is not simply that the passage of time leads to understanding, of course. We must also consider what is done in that time. To be sure, sometimes simply taking a break can open the space for understanding – this is the stuff of shower epiphanies. But, unfortunately, it is not every shower that brings an epiphany. The question arises whether, given some amount of time, it is possible for design to invite deeper understandings any more reliably.

In my research, one idea that has arisen is that a measure of struggle (of a certain kind) seems to encourage understanding to be built. I can personally attest that the book *How to Learn Chinese (Without Even Trying!)* has helped me much less in learning the language than other methods. Though it can of course be enjoyable to build our skills, learn new things and the like, not as much seems to be gained in terms of understanding in the times of ease as is in the times of struggle.

This finding emerged clearly in my work on building understanding in ultramarathon running (Gorichanaz, 2017b). In both training and racing, athletes subject themselves intentionally to immense physical and psychological struggle. In my view, this is not limited to the running context; as far back as the allegory of the cave in Plato's *Republic*, building understanding has been characterized as a source of pain. But to speak specifically about running for the moment, the participants in my study tended to view these struggles as forms of self-experimentation and frame their travails as learning opportunities.

Indeed, recent research on endurance running reveals that the very essence of distance running as a leisure pursuit hinges on pushing through suffering (Bridel, Markula, & Denison, 2016). For example, Helen (the pseudonym of one of the participants in my study) views her running as self-experimentation. She thinks of her mistakes as learning opportunities. The race presented her with a number of learning opportunities. In her training, she had focused on ascents, logging many sessions on a Jacobs Ladder (a cross between a treadmill and a ladder). As a result, she was eminently prepared for the climbs, but she was surprised at how much her legs stiffened up from all the downhills. That, coupled with nausea, presented such a challenge that she did not complete the course. Based on that experience, she talked about how she planned to pursue further self-experimentation and willed suffering in order to build a deeper understanding of her running and improve her performance on the hills.

We can think about struggle in terms of flow, the state of absorption, and focus we experience while doing certain activities (Csikszentmihalyi, 1982). Csikszentmihalyi argued that a person must face a certain level of challenge to experience flow, relative to their skill level. Without sufficient challenge, a person may be bored, apathetic, or – at best – simply relaxed. Without sufficient skill, a person may be anxious or worried. But when skill and challenge are well-matched, a person may experience arousal, control, and ultimately flow. In the context of ultrarunning, it seems that this match between skill and challenge allows the athlete to undergo new experiences that trigger them to make connections and associations that contribute to understanding.

Moreover, at least in ultrarunning, it seems that even some experiences of anxiety can contribute to understanding, just as states of flow can: any ultrarunner will describe seriously considering dropping out during a tough event (sometimes many times) when they cannot seem to see beyond their misery. But when the ultrarunner perseveres, glimpses of possibility can be ascertained at the edges of their anxiety, which gives them the power to continue. Such perseverance through struggle is so valuable that, as one participant described, ultrarunners seek to "recreate awful situations" during training in order to better train the skill of perseverance. These findings are consistent with recent developments in positive psychology which suggest that building mental toughness and learning to deal with negative emotions are important elements of human flourishing (Seligman, 2011).

As we saw above regarding time, here the question of how information studies can facilitate understanding becomes: how can information studies invite people to struggle? Again, this seems antithetical to the thrust of our work – and the development of technology, generally. What seems clear from the accounts in my research is that, when it comes to the kind of struggling that contributes to understanding, people have to want to do it. But it may be the case that most of us, most of the time, do not.

One is reminded of Wally in the 1981 film *My Dinner with André*, speaking about how he would never get rid of his electric blanket and face the cold of New York winters. "Our lives are tough enough as it is," he says.

> I mean, I'm not trying to get rid of the few things that provide relief and comfort. On the contrary, I'm looking for more comfort, because the world is very abrasive.

Can people be encouraged to want to struggle? I am not aware of any work in information studies that has explored how making information harder to access might ultimately better satisfy people's needs for understanding. However, there have been strategies for this developed in education, including the notions of desirable difficulties and productive struggle. It may be fruitful to explore how these might be applied in the design of other sorts of information systems beyond the classroom.

Desirable Difficulties

While making mistakes and failing can be demoralizing – even outright harmful – research in education has suggested that a certain amount of struggle is necessary

for learning. Discussing this, Bjork (1994) coined the term "desirable difficulties" to capture how challenges can be positive in certain contexts. Since this initial publication, much research has emerged from Bjork's Learning and Forgetting Lab at the University of California, Los Angeles.

The theory of desirable difficulties has led to numerous effective educational strategies, such as spaced repetition systems. These are a systematic form of flashcard study which presents the user with each flashcard at a calculated interval such that the answer is at just the right level of difficulty for the person to try to recall. As well, Bjork and Bjork (2011) discusses a number of other strategies for introducing desirable difficulties in teaching. These include varying the conditions of practice, interleaving different content areas, and asking students to generate an answer rather than presenting them with it.

Productive Struggle

Relatedly, the concept of productive struggle has emerged in the past few years, primarily in the math education literature. This is a student-centered instructional methodology that provides a framework for helping students make sense of and persevere in solving difficult problems.

Warshauer (2015) outlines four strategies for providing and supporting productive struggle in the classroom. First, when students are experiencing difficulties, teachers can guide them to see the root of their challenges and consider alternate ways to approach the problem. Next, teachers can prompt students to reflect on their work process rather than just focus on whether or not the answer was correct. Third, teachers should provide time and space for students to experience their struggles, not swooping in too soon to help or providing too much help. And finally, teachers can acknowledge explicitly that struggle is an important and productive part of learning – if not always a pleasant one in the moment.

In educational technology as well, designers have been working to implement productive struggle. The tool Waggle, for example, provides a learning path that is individualized for each student to provide a productive amount of struggle.

4.3 CONCLUSION

In this chapter, we have considered three themes for guiding design for the building of understanding. To be sure, there are interesting connections across these themes that might be explored in further work. For example, implementing desirable difficulties also relates to slowness, as it attempts to slow down the learning process; and intentional struggle may likewise invite people to explore and reconcile diverse perspectives.

I have endeavored to show published approaches and examples of each, drawn from information studies, education, technology design, and other fields.

When it comes to information studies applications, much of the work done to date (broadly under the umbrella of information literacy) has occurred in formal educational and workplace settings, with some nascent applications in other, less formal, contexts (Bruce, Somerville, Stoodley, & Partridge, 2012). But how can information studies show its relevance – through meaningful research and design – in a broader range of settings across the human lifeworld? Bruce et al. (2012) provide some reflections on this, but years after their writing the question largely remains. Those of us invested in the future of the information field must work to expand and answer that question.

PART II

SELF

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Chapter 5

INFORMATION AND THE SELF

ABSTRACT

A defining aspect of humans is our self-consciousness; we experience ourselves as selves, and thus the self is a vital theme for information experience. A self can be conceptualized informationally, showing how the information and documents we deal with, and the practices by which we deal with them, constitute who we are. At root, a self is an encapsulation of an entity from its environment. To speak of human selves, this involves a biological encapsulation, a cognitive one, and a conscious one. The biological encapsulation is formed by chemical bonds; the cognitive by perceptual information processing; and the conscious by semantic bonds of narrative and self-awareness. Selves can change within all these encapsulations, and "being informed" simply is this change. Following this theory of the self as well as discussions of the extended mind, we can understand one's information and documents to also in part constitute a person's self. Among these, self-documents are a special case, those documents we create about ourselves (e.g., online profiles), which both represent and modulate who we are.

Keywords: Self; self-construction; self-document; 3C model; egology; individuation

5.1 INTRODUCTION

In Greek mythology, Theseus was the heroic founder of Athens. On one of his adventures, he sailed to Crete to defeat the dreaded Minotaur, and it's said that his ship was then kept as a memorial in the Athenian harbor. Eventually some of the planks rotted, but they were replaced periodically with new ones, and the ship was carefully preserved in this way for centuries.

Theseus' ship has become a fascinating philosophical thought experiment: once a part has been replaced, is it still the same ship? What if, centuries after Theseus, not a single plank remained from the original ship? Could it still then be

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called "Theseus' ship"? How we answer this question has implications for how we understand ourselves.

Somehow, each of us has the sense that we are one person and not somebody else. We experience a sense of continuity over time – we carry childhood memories, for example, and we feel that our life has a trajectory to it. And yet most of the cells in our bodies get replaced over time, like the ship's planks, so that we are composed of very little of the same matter from decade to decade. Theseus' ship suggests to us that there is something about the pattern or structure of a thing that defines what it is, not just its matter. And hence we might understand entities to be fundamentally informational, defining information broadly as a "pattern of organization of matter and energy" (Bates, 2005a). Still, the physical substrate does seem to play some role: for many of us, our sense is that "Theseus' ship" is no longer really Theseus' ship once every plank has been replaced.

This thought experiment is useful in some ways, but it is not the whole story. After all, we aren't inanimate objects. We move around, and we do things, and everything we do changes us in some way. What would it mean if Theseus' ship could change its own planks? What's more, the limits of our selves are not simply the limits of our physical bodies. The things I create (books and articles, for instance), my thoughts and the stories I tell, and my relationships with others – these are also, somehow, part of who I am. Douglas Hofstadter writes lucidly of this throughout *I Am a Strange Loop* (Hofstadter, 2007).

Thinking changes us. This may seem a trivial observation. But it also means that engaging with information changes us, and hence what "us" means here – these slippery questions of the self – are central to information experience. Who is it doing the experience, and who is this person after the experience?

In this chapter, we explore the notion of the self for its relevance to information experience. In the next section, we will discuss some theories of the self in various fields, and following that I will present the theory of the self I find to be most useful for analyses in information experience, building on work by Luciano Floridi. This theory acknowledges that we are more than just our brains or bodies, leading us to the insight that information (as a process, i.e., becoming informed) is self-construction. If our information experiences make us who we are, then the quality of information experiences – particularly those we impose on others or invite others to share in – is of utmost importance.

5.2 THEORIZING THE SELF

What a person is, and specifically what *the person that is me* is, is one of the enduring questions of philosophy – stretching far beyond the Ship of Theseus. The question seems to spring from the sense that there is something that it is like for me to be me, which runs up against the wisdom that "the only constant is change" and the real sense I get, as we all do from time to time, when recalling decades-old memories, that I am a different person than I was before.

As Martin and Barresi (2006) detail, the concept of the self has changed throughout history as humans have moved from tribal, tightly collectivist

societies to larger, more diverse and globalized ones. On their account, early on, and for most of human history, the self was identified in religious terms – people understood themselves as fixed, enduring, God-given selves. Since the seventeenth century, however, understandings of the self have variegated tremendously, being defined in scientific, social–constructivist, and eventually nihilistic terms. As a historical trajectory, this may be overly simplified; after all, some interpretations of Buddhist philosophy, dating to Antiquity, offer a nihilistic interpretation of the self, so denying the existence of the self is not exactly modern. All I want to emphasize here is the diversity of ways the self has been and can be understood.

What can be made of these differing accounts, particularly for our purposes in information experience? While the details and chains of reasoning differ, we seem to see convergence in that the self is not best understood as a fixed and perduring entity, but rather as an ongoing accomplishment – the experiencing of experience, or self-consciousness. This claim is supported by centuries of philosophy, as well as modern neuroscience and psychology.

To start with philosophy, Aristotle first began theorizing the self (or soul) in terms of activity, rather than substance, in *De Anima*. Much later, Locke (1690) grounded the self in the continuity of memories and consciousness; soon after, Hume (2003, p. 180) described the self as "a perpetual flux and movement." In the following century, Søren Kierkegaard laid the foundation for modern philosophical accounts of the self when he stated, "The self is a relation which relates to itself… The self is not the relation but the relation's relating to itself" (Kierkegaard, 1989, p. 43). If the self arises in activity, it is an ever-changing medley of different substances – the point is, this medley is aware of its own activity. Most recently, we have seen narrative theories of self, which see the self as a kind of story (more or less coherent) that we share with each other (Dennett, 1992; Schechtman, 1996).

Kierkegaard's philosophy may be faulted for overemphasizing personal agency, when in reality our actions are highly constrained (or, as some would have it, entirely determined) by our situations (genetic, epigenetic, microbiotic, emotional, historical, social, etc.). This notion was first popularized through Sigmund Freud's work regarding the unconscious, which has been further developed in today's neuroscientific accounts of the self, such as that of Antonio Damasio. Damasio (2010) draws a theory of the self in which the *protoself*, which arises from neurological patterns in the body and has feelings, is built upon with the *core self*, which has nonlinguistic reasoning and subjectivity, and then the *autobiographical self*, which is the language-mediated sense of self that makes reference to both past and future. Independently, but resonantly, psychologist Rom Harré points out that much of the confusion around the self arises from mixing different senses of the word *self*; for him, a *Person* is a singularity of three Selves: *Self 1* is the point of view, sense of location and action; *Self 2* is the unique set of characteristics attributed to a person; and *Self 3* is the impression a person makes on others (Harré, 1998). It seems that Harreé's Self 1 aligns with Damasio's protoself, Self 2 with core self, and Self 3 with autobiographical self.

Before proposing how information experience could fruitfully conceptualize the self, it is worth pausing to consider how the self has previously been theorized in information studies. When it comes to information studies, notions such as human, person, and self, while often implicit in information studies research, are very rarely conceptualized (Cibangu, 2015). An exception is the work of Ronald Day, who interprets the self, based on Harré's analysis, as an experiential index which is situated among information systems. Day's (2007, 2014) assertion begins to concretely show how interactions with information and technology play a role in the construction and conceptualization of the self. In my view, the development of this idea was continued by Floridi, as described in the next section.

By and large, though, in information studies the self is treated not as an index of experiences but rather an index of metrics, what has been called "computable subjectivity" (Kaiser, 2019). This notion of the self posits that anything worthwhile can be quantified and used in calculations, if not at present, then at least in the future. In *How We Became Our Data*, Koopman (2019) traces the history of this, from the 1910s through today in the emergence of a few particular information formats: birth certificates, personality tests, and credit scores. Koopman argues that information has a specific kind of power that operates chiefly through *fastening* – which has the dual meaning of speeding you up and pinning you down. Nowadays, we are quite familiar with all this, as our smart devices overtly track various metrics that, together, purport to represent us faithfully. Still, it is relatively rare that we reflect upon what this all means for selfhood, liberty, and human culture more broadly. Fortunately, we are beginning to see broader conversations about all this, from academe to popular culture. Examples of the former include Bernard Harcourt's *Exposed* (Harcourt, 2014) and Shoshana Zuboff's *In the Age of Surveillance Capitalism* (Zuboff, 2019); and examples of the latter include Akiko Busch's *How to Disappear* (Busch, 2019) and Jia Tolentino's *Trick Mirror* (Tolentino, 2019).

Information experience as a research and design approach presents an antidote to the currently dominant paradigm of computable subjectivity as a conceptualization of the self. This is because, at heart, the methods of information experience are idiographic, ecological, and hermeneutic – and such methods are not computable. As such, we must articulate a theory of the self that is coherent with the theories developed in philosophy and psychology and also useful for the work done in information experience. That is the task of the next section.

5.3 THE INFORMATIONAL SELF

Like Harré and Damasio, discussed in the previous section, Floridi (2011b) has put forth a three-part view of the self. In Floridi's case, this theory of the self comes as a response to Plato's reference to the human self in the *Phaedrus* dialogue as a charioteer with two horses, one lawful and the other chaotic. On one hand, Plato's image nicely captures the experience of, say, wanting to cheat on

one hand and wanting to maintain one's integrity on the other. But for Floridi, the question arises of how exactly these two horses are yolked, and what is important about each element of the self – for instance, could one of the horses be exchanged while preserving the self?

Floridi (2011b) devises a theory of the self as a three-tiered encapsulation of an entity from its environment. The first tier is *biological*, formed by the chemical bonds of autostructuring physical membranes. An interesting account of how this occurs in nature is developed in Addy Pross' *What Is Life? How Chemistry Becomes Biology* (Pross, 2012). For example, chemical bonding processes lead to the organism of a sunflower, which seeks to maintain homeostasis within its boundaries; it does so through rudimentary environmental information processing, such as capturing light from the sun. Here homeostasis is meant in the chemical sense, e.g., maintaining a balance of salt and water levels throughout the organism, and most importantly the gradient between itself and the outside world.

The next tier is *cognitive*, which occurs once the organism can interpret and exploit certain data from its environment through encoding – involving more sophisticated forms of processing and memory. For example, a feature of this tier is that data are not only interpreted as quantities but also in terms of direction: Whereas a sunflower emits oxygen to nobody in particular, a monkey emits a call of alarm to the rest of its tribe. These cognitive abilities are a membrane because they serve to further separate the organism from its surroundings, offering another modality by which the organism can work to maintain homeostasis (negentropy) in a chaotic world; on this level, homeostasis concerns the codification of the data that has come from outside, e.g., the processes of memory and language (or protolanguage).

The third and final tier is the consciousness or semantic membrane, which is formed by self-awareness. Once a cognitively equipped organism becomes aware of itself, it becomes separate, in a sense, even from the data inside its body. Once this layer emerges, "it appropriates and unifies what happens to the corporeal and cognitive levels as his or her own experiences" (Floridi, 2011b, p. 560). That is, at this level, maintaining homeostasis concerns the stability of what the organism understands to be its self. Homeostatic processes here include things like constructing the story of ourselves, which has been much researched in personality psychology, for example (McAdams, 2001). Though we might naturally equate the "self" with this membrane, it is important to remember that this one is only possible once the first two are in place.

Regarding how these membranes might change over time, Floridi draws an analogy to computing: the biological layer is like the hardware; the cognitive layer is hard coded; and the consciousness layer is soft coded. While in some systems, the hardware and hard coding are entirely fixed, we should note that, when it comes to human selves, the boundaries of all these encapsulations are malleable to some extent. For instance, practicing meditation may result in changes at each layer: lower blood pressure at the biological layer, longer attention span at the cognitive layer, and equanimity at the consciousness layer. To be sure, the pattern of the biological encapsulation is the most fixed of the

three – but even it is not entirely fixed. Certainly one does not suddenly become 20 feet tall, and rarely do we chop off our own limbs, but our bodies do become modified over time, both unintentionally (accidents, aging, etc.) and intentionally (medications, plastic surgery). The cognitive layer can change to a greater extent; through training, practice, and perseverance, one can increase their capacities for making perceptual judgments in contexts that matter to them. And the conscious layer is most changeable of all; through relationships, valuation, story, and reflection, this aspect of the self can be nurtured and grown endlessly. At the cognitive and conscious layers the self can grow most because here it is perpetually incomplete, projecting itself toward ever-further goals (Baumeister, 2005; Heidegger, 2010).

While we change through natural processes and we can change ourselves through a variety of techniques, it is through engaging with information technology that we modulate our selves in large part today. As Floridi (2011b, p. 550) writes, information technologies are inherently "technologies of self construction, significantly affecting who we are, who we think we are, who we might become, and who we think we might become." We are familiar today with discussions of "nerd neck" and selfie nosejobs (biological layer), the searchification of everyday life and information overload (cognitive layer), and the crisis of meaning and political polarization (consciousness layer). For our purposes, it is not the technology part that is most interesting, but rather the information part. The ways we can change through engaging with information will be the topic of the next section. But first, we must consider what this means for the boundaries of the self.

Where do I end? That is, where does Tim stop and the rest of the world begin? If we ask ourselves this question, the obvious first answer is to look at the body. We can see plainly enough where I begin and end based on the shape of my body. This is well enough for the biological layer of the self, but when it comes to the cognitive and consciousness layers, it seems to me that these three membranes are not congruent. As James (1950, p. 291) observed:

> Between what a man calls *me* and what he simply calls *mine* the line is difficult to draw. We feel and act about certain things that are ours very much as we feel and act about ourselves.

Along these lines, I would suggest that at least some of the things I call *mine* are actually also part of *me* – it is not that the line is difficult to draw, but rather that it shouldn't be drawn.

To give a simple example, we can look at how smartphone use interfaces with the cognitive membrane of the self. Instead of keeping all my memory inside my skin, I keep some of it in my iPhone: notes to myself, reminders, photographs. . . Of course, humans have done this sort of thing since the dawn of writing (if not before, with mnemonic songs and the like); with computing, we can not only store much more, but we can also perform significant processing outside of us. And to speak of the semantic layer, which hinges on the ability to look at yourself and see yourself as yourself, we can consider how social media profiles afford a new way of self-seeing – not only that, but self-construction, as we will discuss below.

Our smartphones and social media profiles are actually part of us, and not trivially. By this I mean they open us up to feedback loops that can change us on any of the three membranes that constitute our selves. For example, while curating my Facebook profile I might see an ad for a pair of running shorts that I might buy – spending money on these rather than on something else I might have bought – and then wear. Will they chafe me on a long run? Or will they be so well-fitting that I wind up running more miles than planned, over time causing me to lose a bit of weight? Maybe I'll wear them on a run with friends, and a picture of me wearing them will find its way onto Instagram, and so these shorts will have become wrapped up in my story of myself, and how I present myself to others. We needn't look far for less silly examples: The posts and ads we see on websites, algorithmically filtered, will influence the kinds of jobs we might find, and the kinds of homes we might live in – two life factors that are quite consequential for the kind of person we will be in the future (Finn, 2017). Something we posted online as a teenager might resurface years later and cause our college admission to be revoked (Harris, 2019).

Increasingly, we engage with each other not by interfacing directly, body to body, but through documents and other forms of mediation. Others learn about us, who we are, by engaging not with us, but with documents "of" us. Think about yourself right now: even if you've never met me, all the while reading this book you've been learning things about me based on my writing style, the sorts of examples I bring up, etc.

Harré (1984) captured this phenomenon in the concept of the file-self. Harré gives the example of the hiring process, in which job candidates are first encountered and dealt with as file-selves. Harré (1984, p. 69) defines the file-self as "a collection of documents unified by their common referent, the person *A*." Harré goes on to discuss how file-selves and real-selves differ. For instance: "A person's real-self is, amongst other things, a store of information, some of it reflexive. As a fileself, a person is almost wholly reduced to such a store" (Harré, 1984, p. 70). Here I would attach a proviso to what Harré says: Given the framework presented above, we need not set up a dichotomy between the file-self and the real-self; rather, we can understand the file-self to be a fragment of a person's whole self (Hofstadter, 2007). Some of our file-selves are made by us (such as resumes), but others are beyond our control and may be inaccessible to us (such as credit scores) (Harré, 1984). Depending on the particular situation, we may feel more or less identity with these various file-selves (Harré, 1984). The file-self phenomenon deserves significant attention today, as each of us is being bound by more and more – and more opaque – file-selves, such as those generated by algorithms (Finn, 2017).

A final philosophical note. Floridi subscribes to an informational ontology, that is, a worldview that sees existence to be fundamentally informational in nature. If existence is informational, then obviously selves are informational as well – a trivial observation. Many debate the notion that information is the end all, be all, of existence, and some may question the notion of an informational self on those grounds. Fortunately, the question of fundamental ontology is not so relevant here. What I want us to see is how even what we in information studies

traditionally identify as information – books, articles, technological devices, and the like – are also part of our selves. We use them as part of our self-conscious sense-making and cognitive storage and processing, and they even influence our biology. Consequently, information is wrapped up in who we are and who we might become.

5.4 INFORMATION AS SELF-CONSTRUCTION

In his famous paper "Information as Thing," Buckland (1991) discerned three senses in which we use the term *information*:

(1) Information-as-thing, or a physical and informational object; for example, we might think of a book or sign as being information, such as when we're at a train station trying to find out where our train is.
(2) Information-as-knowledge, or a conceptual piece of epistemic content; for example, when we share some news with someone, we might say we have given them some information.
(3) Information-as-process, or the act of informing or becoming informed; just as we may speak of someone's *formation* to refer to their background and training, we might speak of their information as how they came to know or understand something – though, to be sure, this is now an archaic usage.

In his article, Buckland (1991) focuses on information-as-thing, as information storage and retrieval systems can only work with information in the as-thing sense. In our vernacular, the as-knowlege sense of information seems to predominate, with the as-thing sense close behind. Information-as-process seems to have been largely forgotten, except in some corners of academia. In this section, I would like to turn our attention toward information-as-process, specifically as it relates to the self. If the self is a process, and also informational, as we discussed above, then there are clear synergies with information-as-process.

My research on information experience in personally meaningful activities has shown how such activities are one way in which people construct themselves – or, put more plainly, how they come to be themselves (Gorichanaz, 2019a). As such, personally meaningful activities are experienced as part of a person's self. We can see this clearly in people's stories of how they came to do a particular activity that they now find personally meaningful (see Section 10.5). For most of the participants in my studies, the activity was not part of the person's self for their whole life; rather, it is something that they discovered at some point and cultivated to the extent that it now forms part of their self-concept.

What this means is that the information involved in these activities, whether used or produced, is also part of the person's self – though not all to the same extent, and not all in a lasting sense. Consider a Bible reader doing her morning reading: She may read a passage in her personal Bible, and then read the footnotes and a commentary, and then find herself on the Wikipedia page "Siege of

Jerusalem (70 CE)." While she is reading, absorbed in the text, this Wikipedia page is part of who she is – and yet, in a few years' time, she may have no recollection of the page (indeed, the Wikipedia page might by then be quite different). But she will likely still have that same Bible, perhaps marked up with marginalia particular to herself. Suppose that, when she dies, she leaves this Bible to her own daughter, who in time gives it to her daughter in turn. This particular Bible will have become a family heirloom, not just in that it is a reminder of Grandma, but that it is part of who Grandma actually was – or maybe it is one of the last remaining parts of who Grandma *is*. What is helpful here is Floridi's (2013, pp. 311–312) notion of the reversibility of personal information: the more confidently some information can lead someone back to the person who created it, the more "personal" the information can be said to be. An unmarked Bible from a hotel bedside drawer would not likely lead to any particular person, but Grandma's Bible, worn with years of use and peppered with annotations, more confidently leads us to a single individual.

We go through life engaging with and creating any number of information-as-things. The vast majority of them turn out to be inconsequential to who we are. But a precious few come to be part of who we are. For the most part, we do not choose or create these things intentionally. But there are cases where we do, which I refer to as self-documentation (Gorichanaz, 2019c). Simply defined, self-documentation is the creation of documents about oneself. But "about" here means both representing the self and constructing the self, in a sort of feedback loop; it is not that there is a forever-and-always Self just waiting to be represented, but rather the document contributes to the formation of the self that it purports to be representing. When it comes to the self, representations are always also simply presentations. Self-documentation, then, is an interesting convergence of information-as-process and information-as-thing.

If engaging with information changes the self, we can immediately expect ethical implications regarding not only self-documentation and personal information but also information experience, behavior, and practice more broadly. What kinds of selves are best? And what duties do information professionals have in stewarding good selves? We will consider this more deeply in the coming chapters. But for the moment, we can now better understand Day's (2017) position on information literacy, that our problems of misinformation inter alia will not be solved by technical solutions alone, but must be targeted toward helping people develop their selves. Information literacy is a matter of self-cultivation and self-understanding as much as it is about knowing what news is "fake."

5.5 CONCLUSION

In this chapter, we have examined the concept of the self with respect to information experience. Before going on, it is worth pausing to consider the relationship of the self to society – the latter being, nowadays, a more predominant object of interest in information studies.

The need for the concept of the self only arises in social contexts. Phenomenological philosophers such as Heidegger (2010) recognized that human being is always being-with-others. Recalling the theories of the self put forth by Damasio (2010) and Harré (1998), we can note that Damasio's autobiographical sense is language-mediated, and Harré's Self 3 is the impression one makes on others. Language, of course, only arises in social situations (feral children do not develop language), so this highest order of self-concepts relates to how we position ourselves with respect to others. Besides language, fully being a (human) self involves other aspects of culture and social interaction. As such, Floridi describes selfhood as "a collaborative and cumulative effort by generations through time" (Floridi, 2013, p. 221). This insight leads us to the next two topics in this part of the book: identity and the ontic trust.

Chapter 6

IDENTITY

ABSTRACT

Identity often comes up in discussions of information experience, just as it is an increasingly salient concept in today's political landscape. What does identity mean? Oftentimes identity is assumed to mean social identity, or membership in a social group. We can also discern personal identity, emphasizing a person's uniqueness. Compare $a \in A$ *(social identity) and* $a = a$ *(personal identity). In essence, identity is a relationship of equivalence. Of course, no two entities are exactly equal, if only because they occupy different points in space. Identification then requires abstraction, or discerning what particular aspects of a thing matter for the purposes at hand. Two industrially produced products can be said to be identical if we ignore differences in space and accidents of production. Likewise, a person can identify with a social group if the only features of that person that matter (for the moment) are those which characterize the social group. When a person says they identify with* X *or as* Y*, they are making a claim about what matters to them in defining their self right now – because experience itself is pointing out some aspects of existence that matter to a person (that are attended to by that person) at a particular time. Information can contribute to a person's identity in that it helps a person discover what aspects of their self matter to them; this mattering in turn influences one's future information seeking and use.*

Keywords: Abstraction; levels of abstraction; identity; personal identity; social identity; intersectionality

6.1 INTRODUCTION

Time is unfolding in the flow of existence, which we each experience from a particular vantage. At least in our waking hours, we are always experiencing something, whether that is happening in the present, memories of the past, or imaginations of the future – or some combination of these. As humans, it seems

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we cannot but make a continuity of our past, present, and future – or try to, at least. That continuity-making is the work of identity.

There is much talk of identity at present, in public discourse as much as in academia, particularly amidst the tensions of religious, ethnic, gender, etc., identities. In information studies, identity spans issues as diverse as identity theft, the history and significance of #BlackLivesMatter, self-presentation on social media, librarians' formation of professional identity, and so on. Yet there has been comparatively little consideration of what "identity" actually means. This chapter seeks to shed some light on that question, focusing mostly on the role of information in the construction and expression of identity – that is, the information experience of identity.

Part of the complexity of identity is its polysemy; philosophers, psychologists, sociologists, activists, etc., may all mean different things by the word. Conceptualizations of identity can be made at several different levels of abstraction – i.e., in different conversations and for different purposes. Identity means something in logic, something a bit different when talking about human persons, and something a bit different still when talking about groups of persons. A politician, in her work, necessarily has to deal with identity in the group sense, yet in her family life must deal with it in the individual sense. Much confusion arises when these distinctions are forgotten.

6.2 ABSTRACTION AND LEVELS OF ABSTRACTION

A preliminary conceptual note is in order, introducing the notion of abstraction and specifically levels of abstraction. As scholars, we are familiar with the notion of an abstract as a summary of a research paper. In cataloging and classification, the idea of abstraction can be more generally understood as the representation of a document in an information system by a set of dimensions (say, title, publication date, subject terms, etc.). Both these understandings can be understood as more specific instances of how abstraction is defined in computer science: as a process of modeling. In this sense, abstraction is a process of creating a generalization of something to make it more conducive to processing by computer. A level of abstraction (LoA) is a particular model of a phenomenon, and any given phenomenon admits of various levels of modeling.

In the philosophy of information, Floridi (2011a, chapter 3) has employed the notion of levels of abstraction to solve philosophical problems. To deal with complex phenomena, we have to create models, i.e., abstractions. (Another term for this, perhaps more familiar to scholars in other fields, is *conceptualization*.)

As Floridi points out, untold confusions and even disasters result when two interlocutors (often unwittingly) use two different levels of abstraction to try to solve a problem. Consider the seemingly simple question of which of two cities is bigger. If one person defines "bigness" in terms of square mileage and the other defines it by population, their debate will spin in circles. Of course, we could think of any number of ways of defining the size of a city: population, number of pigeons, etc.

An LoA is a gathering of the aspects of a phenomenon (observables) that are considered important for the question at hand. That is, an LoA is tuned to a particular purpose. Consider wine, to borrow one of Floridi's examples. If taste is in question, the LoA might include mineral content, acidity, and body. But if purchasing is in question, then the LoA might include price, maker, and vintage. The LoA specifies what combinations of observables are possible.

Defining an LoA is a way to make explicit and manage one's ontological commitments. When a question (e.g., a research question) specifies an LoA, then it is answerable; the LoA provides the syntax for acceptable answers. Floridi gives the example of Kant's antinomies of pure reason (Kant, 1998), which do not specify any LoA and are thus unanswerable. If my example above about two people debating the size of a city seemed silly, you needn't look further than the miles and miles of ink spilled in discussion of Kant's antinomies for a "bigger" example.

The concept of LoA gives clarity to what might be called emergent properties: on one LoA, machine learning software appears interactive and autonomous; on another LoA, the software is simply following rules specified in lines of code (Floridi, 2011a, p. 60). Lastly, a shared LoA is necessary for cooperation in any scenario of information exchange. Consider the Mars Climate Orbiter disaster of 1999, which was caused by one firm tacitly operating in imperial units (pound-seconds) whereas the cooperating firm tacitly operated in metric (newton-seconds) (NASA, 1999). As Floridi writes, "failing to specify a level at which we ask a given philosophical question can be the reason for deep confusions and useless answers" (Floridi, 2017).

As we will see, a person's identity is a model for their self. So whenever we discuss identity, we are committing to a particular LoA for a person. Debates about identity, then, if they seem intractable, may have their root in differing levels of abstraction – different commitments about what aspects of personhood are most relevant to a particular question. Additionally, problems may result from confusing different senses of the term *identity* in the first place. This is the topic of the next section.

6.3 DEFINING IDENTITY

Identity has at least three senses that must be disentangled. It may refer to an aspect of being, an individual person, or a group of people. The first sense, the "being" sense, seems to be the oldest way of using the term, and it is also the most abstract or low-level. The word comes to us from the Latin *identitat-*, by way of the Middle French *identité*, meaning "quality or being the same" or "being itself and not something else." According to the *Oxford English Dictionary*, by 1756 the word had also taken on the sense of individuality or personality; and by 1801, it had the sense of the impression a person makes on others, i.e., the social aspect of identity. In this section, we will explore these three senses in some detail.

6.3.1 Being

In logic, one of the most baseline principles of existence is the law of identity. For those of us who never studied logic per se, we might remember having learned in algebra class that $a = a$. The claim here is if two things have nothing that distinguishes them from each other, then they are not two things, but one – and hence the "sameness" connotation of the word *identity*.

There is a sort of paradox embedded in the law of identity: if the two terms are really equivalent, then why are there *two* of them? Wittgenstein commented on this in his *Tractatus*: "To say of two things that they are identical is nonsense, and to say of one thing that it is identical with itself is to say nothing" (Wittgenstein, 1922, 5.5303). And yet, as Wittengstein later wrote, the idea of sameness does connote a certain "play of the imagination" (Wittgenstein, 1953, §216). Also grappling with this idea, Heidegger (1969) concluded that $a = a$ means that the two terms belong together as parts of a unity.

The concept of levels of abstraction is helpful here. In math, we can make statements like $4 + 2 = 6$ and $6 = 6$. But in lived reality, we can't speak of "six" as such, only of six of this or that. If I have six dollars and you have six chickens, the only way we can speak of their identity is if we abstract away everything except their number. So any time we speak of identity, we are establishing an LoA – a set of observables that capture the relevant (for the purposes at hand) aspects of the phenomenon in question. Floridi (2011b) offers a nice example to clarify this point, indeed hearkening back to our story of Theseus' ship which began the previous chapter:

> Whether a hospital transformed now into a school is still the same building seems a very idle question to ask, if one does not specify in which context and for which purpose the question is formulated, and therefore what the required observables are that would constitute the right LoA at which the relevant answer may be correctly provided. If the question is asked in order to get there, for example, then the relevant observable is "location" and the answer is yes, they are the same building. If the question is asked in order to understand what happens inside, then "social function" is the relevant observable and therefore the answer is obviously no, they are very different. The illusion that there might be a single, correct, absolute answer, independently of context, purpose and LoA, leads to paradoxical nonsense. (Floridi, 2011b, p. 553)

6.3.2 Person

In the famous story of Rip Van Winkle, a villager in rural New York goes up into the Catskill Mountains, drinks liquor with some strange men, and then falls asleep. When he wakes up, he heads back down to the village – and is met with confusion. The villagers tell him Rip Van Winkle is standing "yonder, leaning against the tree." (As readers, we come to realize that this other Rip is the first Van Winkle's now-grown son, as the first Rip had been asleep in the mountains for 20 years.) And then, we are told of the protagonist: "He doubted his own identity, and whether he was himself or another man" (Irving, 1819).

Washington Irving published this story in his *Sketch Book* compendium in 1819–1820, and the *Oxford English Dictionary* catalogs it as one of the

earliest usages of *identity* to mean a particular person's identity. And even today, this story hits precisely the crux of the concerns of most philosophers of personal identity: how a person can be the same person over time (Martin & Barresi, 2006). Are you the same person that you "were" at age 5? If you stepped into a *Star Trek* Transporter, would *you* reemerge at the destination, or would someone else? A lucid, interesting, and readable writer on such questions was Derek Parfit (1971, 1984).

Psychologists have also explored personal identity and its formation. This work was pioneered by Erikson (1951, 1968), who developed an influential framework describing how people form their identities through their experiences in childhood and adolescence under the rubric of exploration and commitment – that is, seeing what possibilities are available and then committing oneself to certain of those possibilities. In addition to the diachronic perspective (about the preservation of identity over time), scholars of identity also investigate the synchronic perspective: how one person differs from others. By and large, though, scholars have turned their attention more toward group identity than personal identity.

6.3.3 Group

If personal identity explores $a = a$ where a is a person, we might say that group identity explores the questions of $a \in A$ and $A \setminus B$ – that is, how people are members of sets, and how these sets differ. Today, this seems to be the default sense by which most of us understand the word *identity*. Nowadays, when people speak of identity *tout court*, more often than not they're invoking group identity. Harré observed this trend as far back as the 1990s (Harré, 1998, p. 1), and it has continued with the rise of identity politics as a major frame for public discourse.

Anthony Kwame Appiah is the rare scholar who distinguishes between personal and group identities (see also Stryker & Burke, 2000). Appiah writes that whereas our individual identities (what I am calling personal identities) come from within, our collective (or group) identities

> …are responses to something outside our selves … they are social not just because they involve others, but because they are constituted in part by socially transmitted conceptions of how a person of that identity properly behaves. (Appiah, 2005, p. 21)

This constitution unfolds in what Appiah calls the "social scriptorium."

For Appiah, the difference between personal and group identity comes down to labeling. Social identities begin to form when a label can be applied to a group of people; such labels are socially and historically contingent. Appiah (2005, p. 23) mentions, for example, that "the wit" may have formed a label of social identity in Stuart Britain (1603–1714), but it does not today, even though there are certainly still clever people around. Likewise, in 1790 there were no African Americans as we understand that term today, though of course there were people of African origin living in the United States.

As Appiah (2005, 2018) writes, labels of group identity matter for three key reasons. First, they give us a sense of how we fit into the social world. In social life, we come to know what labels for people are available and what they mean; and over time we internalize and express a set of labels – partly by choice, and partly by nature, as group identity has both subjective and objective aspects. Second, labels give us reasons for doing things. We can see this any time we might justify an action by saying, "As a…" And third, labels give others reasons for doing things to us, for treating us in a certain way.

The labels of group identity come along with scripts, or "narratives that people use in shaping their pursuits and in telling their life stories," which necessitate loose agreement about the "modes of behavior" that are appropriate for a member of that group (Appiah, 2005, p. 108). For example, there are certain actions, styles, etc., that we recognize as typifying gay men by virtue of understanding *gay* as a label. But we must emphasize that these scripts are not rigid; there are many ways to go about life as a gay man and be recognized as such, and the same goes for any other group identity.

A tension arises here when it comes to policy. As mentioned, a group identity is constituted by loose norms, but to recognize a given group identity, a political entity must explicate the defining criteria of a person with that identity, thus often overly tightening the script. Appiah writes:

> Demanding respect for people *as blacks* and *as gays* can go along with notably rigid strictures as to how one is to be an African American or a person with same-sex desires. … It is at this point that someone who takes autonomy seriously may worry whether we have replaced one kind of tyranny with another. We know that acts of recognition, and the civil apparatus of such recognition, can sometimes ossify the identities that are their object. Because here a gaze can turn to stone, we can call this the Medusa Syndrome. (Appiah, 2005, p. 110)

This is precisely the challenge that Appiah calls "soul making," which states and other political entities must face (Appiah, 2005, p. 232). We each know ourselves as whole selves, but other people may only be able to acknowledge us as bundles of identitarian labels. But political entities must massage away most of the facts that compose a person in the name of creating an orderly society. Such is also the difficulty for anyone who wishes to champion the rights of some social group.

As a final point, we must recognize that one's collective identities (the labels one adopts) may be more or less central to one's individual identity (Appiah, 2005, p. 108). At times, overemphasizing group membership can threaten one's individuality and their ability to live as themselves. Recognition is within spitting distance of imposition. Again, Appiah:

> The politics of recognition, if pursued with excessive zeal, can seem to require that one's skin color, one's sexual body, should be politically acknowledged in ways that make it hard for those who want to treat their skin and their sexual body as personal dimensions of the self … something that is not too tightly scripted, not too resistant to our individual vagaries. Even though my race and my sexuality may be elements of my individuality, someone who demands that I organize my life around these things is not an ally of individuality. (Appiah, 2005, p. 110)

6.4 IDENTITY AS AN ABSTRACTION

When a library gets a new book, where should it go? Of course, this question is familiar to us in information studies, and our field has come up with many ways to answer that question. What I want to emphasize here is that to create a well-ordered library you need to ignore most of what's in every book, to work only with abstractions of books. Of course, this may cause strife. But the practical reason for this is that each book may only be where it is, and it has to be somewhere.

It isn't so different with people. Of course, each of us can have many labels of group identity at once, as theorists of intersectionality remind us. But, as political theorist Amartya Sen writes, we often implicitly believe that other people can be categorized by exactly one label, what he calls a solitarist approach to ascribing identity (Sen, 2006). Hence Stryker and Burke's (2000) observation that many scholars use the term identity as a synonym for, say, ethnicity. In terms of the discussion here, we can see the solitarist approach as defining a too-impoverished LoA.

Identity, indeed, is a matter of abstraction. Think back to the logical definition of identity, $a = a$. In the real world, there's no such thing as a, per se, just as there's no such thing as an equilateral triangle or a perfect circle. These are abstractions, ideas, tools for thinking. When we speak of identity, it's much the same. Identity is a simplified picture of who a person is, necessarily, whether solitarist or not.

This is an important point, but it is almost never recognized. For instance, most scholars seem to use the terms *self* and *identity* as if they were synonyms (Swann & Bosson, 2010). But as I've said here, the difference between self and identity is a matter of abstraction; identity is an abstraction of the self. Thus we can understand the meaning of, for example, the phrase, "the identities that constitute the self" (Oyserman, Elmore, & Smith, 2012, p. 70). The notion of the self tries to capture all that makes an agent that agent. So beyond what we call identities, the self also includes aspects of experience that cannot be so easily encapsulated or communicated, what James (1950) described as a sense of warmth. When we consider personal and group identity separately, it is clear that group identity is even further abstracted than personal identity.

Another ramification of understanding identity as abstraction is seeing how what we call identity is contextually contingent. My identity at home is different from at school or the gym. First because different aspects of my self are relevant in different contexts, and second because what my self is is always changing. Hence Kitzie (2019, p. 1340) writes that identity is "consistently negotiated and achieved across sociocultural contexts over time, rather than [being] a series of innate, fixed characteristics that individuals discover over time." (The word *achieved*, however, may unduly reify identity.)

In this way we can also understand claims such as "a identifies with b." For example, I might say that I identify with Bilbo in *The Lord of the Rings* (I need to find somewhere peaceful where I can finish my book). More enigmatically, we

sometimes say that we identify with whole works or social causes. When we say such things, we do not mean that we *are* Bilbo (or whatever), but that for the purposes at hand (perhaps this particular conversation or situation), the only aspect of my self that I wish to emphasize is that shared with Bilbo.

6.5 INFORMATION AND IDENTITY

As discussed in the previous chapter, the self is something embedded in the world materially – though it may be a construct, it is not simply a mental construct. As Appiah writes, "Throughout our lives part of the material that we are responding to in shaping our selves is not within us but outside us, out there in the social world" (Appiah, 2005, p. 21). And so identity formation is not purely a mental exercise: we use various "materials" in shaping our identities. In information studies, we can understand those materials to be information.

In this section, we will explore some of the many ways in which information connects with identity, particularly in terms of people's experiences of information and identity. For example, how do people experience being identified (given an identity) through documents such as birth certificates and ID cards? How do people use information to explore what group memberships are possible, i.e., what labels are at play in a given society? Here the focus will be on human identity, that is, personal and social identity. The logical or "being" sense of identity, described above, does come up sometimes in information studies (e.g., Day, 2019; Yeo, 2010), but these issues are somewhat removed from our focus here.

6.5.1 Personal Identity

The literature in information studies that deals with personal identity can be split into two groups: that which deals with the subjective aspects of personal identity, and that dealing with the objective.

To begin with the subjective aspect of identity, perhaps the most well-known work is that dealing with personal identity in the presentation of self online. Recall that identity is a matter of abstraction; one's whole self cannot be conveyed online (or in any social situation, for that matter), and must be abstracted in the form of an online identity. By and large, this work traces its lineage back to Erving Goffman's 1959 book *The Presentation of Self in Everyday Life* (Bullingham & Vasconcelos, 2013). In this context, identity formation involves disclosing and veiling certain information about oneself, even while generating further such information, at different times, places, and contexts (Bronstein, 2014). Robinson (2018) describes this as the identity curation game, one with implicit social rules for the frequency and manner in which one ought to use social media to construct and express one's identity. More generally, this has been termed *identity work*, with roots in the organizational management literature (Brown, 2015; Lepisto, Crosina, & Pratt, 2015; Reger, Myers, & Einwohner, 2008). The notion of identity work is also invoked in research on group identity, as described below.

Besides this body of work, other information researchers have examined information and personal identity formation outside of a strictly online context. In information literacy, Demasson (2014) writes of experienced identity, that is, identity as it emerges through experiences with information, in this case serious leisure pursuits. Demasson discusses the emergent identity not being "alien" precisely because of its experienced and informationally engaged nature (Demasson, Partridge, & Bruce, 2016). Whereas prior studies referred to people's identities in terms of "roles," Demasson (2014) discovered that the notion of roles did not fit with his findings. His participants did not see themselves as carrying out prescripted roles, and nor did they categorize their information experiences according to labels. In the context of this chapter, we can see that those other researchers examined only the social dimension of identity, but Demasson uncovered the personal dimension.

Dillon (2019) writes of the common human desire to collect things as it relates to identity formation and expression. In his essay reviewing the literature, Dillon devises a continuum of collecting, ranging from regular consumption on one end to hoarding on the other, helping us all understand ourselves to be collectors of some kind (e.g., of clothing). This work nicely shows what Appiah pointed to in the quotation that opened this section: how material objects can contribute to identity and self. As Dillon writes, collectors find pleasure and meaning in developing their knowledge, finding and acquiring additions, sharing their collections with others, etc. And though at times Dillon does point to how this work intersects with group identity (e.g., collections as expressions of group membership), overall his analysis engages the personal aspect of identity.

Next, regarding the objective aspect of personal identity, researchers take interest in how aspects of human identity are constituted by documents. Much of this work is only tangentially related to experience, such as that on identity theft prevention (Maitlo, Ameen, Peikari, & Shah, 2019); but more and more, in our algorithmic age, it is becoming clear that such documents do impinge on our life experiences. Much recent work is exploring questions of what big data, social media, and surveillance technologies mean for individual liberty and the how they are changing the nature of human experience (Finn, 2017; Zuboff, 2019). Koopman (2019) describes this as infopower, a form of manipulation specific to information technologies and documents which can be traced back to the 1920s, when official identification efforts and the like began to flourish (see also Robertson, 2015).

6.5.2 Group Identity

Much more research in information studies examines identity from a group perspective. This literature can be organized according to the framework of group identity and labeling developed by Appiah (2005, 2018). First, labels give us a sense of how we fit into the social world, which relies on our learning about the availability and meaning of labels and then the internalizing and expressing of our label(s). Next, labels give us reasons for doing things. And finally, labels give others reasons for doing things to us.

A large body of research examines how people, particularly young people, come to learn about the availability and meaning of social labels. This work has focused on minorities, as people in these groups (perhaps by definition) face difficulties in this task. A major insight of this work is the informative capacity of entertainment in this regard, challenging the dichotomization of information on one hand and entertainment on the other (Kisilowska & Mierzecka, 2019).

To give some examples from the literature on sexual orientation and gender identity, Hamer (2003) identifies several information needs of gay men related to their coming out as gay. Just as Appiah's framework would suggest, these needs are related to self-labeling, understanding the consequences of such labeling, and forming a gay identity for oneself. Similarly, Kitzie (2019) describes the importance of the visibility of relevant information in the online information work of LGBTQ+ millennials, also noting the usefulness of anonymity and the ability for users to associate with each other in such systems. Pohjanen and Kortelainen (2016) write of transgender information behavior, noting that the lack of search terms and required vocabulary can be a barrier for individuals. Pohjanen and Kortelainen (2016) find that serendipity plays a large role in this process for many transgender young people; without encountering information about the transgender phenomenon, they might not have known it exists. As a note, however, Drake and Bielefield (2017) remind us that people in the subgroups that comprise LGBTQ+ have different information needs, and it is not always fruitful to bind them together. For example, transgender people have unique needs when it comes to library accommodations, such as unlocked single-stall bathrooms and processes for name change (Drake & Bielefield, 2017).

All this points to the role of services at libraries and other information institutions to show what labels are available in a given society and what they mean. Dancs (2018) suggests that bibliotherapy may be used to this end. Other writers have commented on the importance of such services for this purpose (Roy, 2019; Tarulli, 2018; Widdersheim & McCleary, 2016).

Less research is available on the role of information in internalizing and expressing labels. Regarding internalization, some of Hamer's findings on gay men's coming out relates to this stage of identity formation, as does Kitzie's on LGBTQ+ individuals' information practices. Pohjanen and Kortelainen (2016) identify fear as a major barrier in transgender people's information behavior, which also seems to apply to the internalization process. Regarding expression, the identity curation game (Robinson, 2018) describes how this unfolds among teens in online settings, and Kitzie's discussion of LGBTQ+ identity work relates here as well. As Dillon (2019) writes, one's collections of objects may also be an expression of group identity.

Regarding the use of identity as a justification for action and treatment, Celik (2019) presents a large survey study of internet users' experiences of cyberhate. He finds that people's exposure to cyberhate relates to group identities including ethnicity, religion, gender and politics, and that members of some groups are more likely to be targets of cyberhate than others. In another recent article, VanScoy and Bright (2019) present research on the experiences of librarians of color, with a central theme of uniqueness and difference. An interesting thread in

their work is how librarians' group membership may impact relationships with library users. Some participants said that they work with users "one on one" (p. 288) and that group identity was not relevant, but in some situations and with some reference interactions, it is indeed relevant. For instance, an academic librarian of color mentioned that students of color seek her out on the grounds that "I feel like I can talk to you" (VanScoy & Bright, 2019, p. 290).

6.6 CONCLUSION

This chapter has conceptualized identity as a type of abstraction, an abstraction of the self. But to say that identity is an abstraction is not to say that it is not real or important; abstractions are interfaces, and interfaces are necessary to function. (The question, for example, of whether you could operate your smartphone without an interface is almost meaningless. Indeed the interface – interfaces, actually – is part of what defines the smartphone in the first place.) We have disambiguated three senses of identity: the logical, at the level of being; the personal, at the level of the individual human; and the group, at the level of the human collective.

Oftentimes when we use the word *identity*, we are implicitly referring to group identity. But we should not make the mistake of thinking that group identity is always the most salient or important or only form of identity; how best to abstract any phenomenon entirely depends on context. In information studies writ large, writers perhaps unduly err toward considering group identity exclusively; and within information experience, the charge might be levied that personal identity is given too much weight. The reality is that we are individuals but that our individuality is constituted by group ties. As Appiah writes, glossing John Stuart Mill,

> To value individuality properly just *is* to acknowledge the dependence of the good for each of us on relationships with others. Without these bonds, as I say, we could not come to be free selves, not least because we could not come to be selves at all. (Appiah, 2005, p. 21)

In the next chapter, we will conceptualize these "bonds" in terms of information through another of Floridi's concepts: the ontic trust. Appiah seems to consider only human–human bonds, but we should also consider bonds between humans and all other forms of information (both organisms and objects), broadly construed, whether they are animals, plants, rocks, computers, books, or whatever.

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Chapter 7

THE ONTIC TRUST

ABSTRACT

The self should not be understood atomistically; indeed, the very concept of the self is only necessary in social contexts. There is a link, then, between self and world. In my view, this can be conceptualized through Luciano Floridi's concept of the ontic trust. This concept was named after the legal concept of the trust, in which one party (the trustor) settles some property on a second party (the trustee) for the benefit of a third party (the beneficiary). The ontic trust is entered unwillingly and inescapably, but it is not coercive; rather, it constitutes a caring bond, an invitation to respect and appreciate others (including other people and all organisms and things). The concept has seen some discussion, but no one has yet commented on the role of the self in the ontic trust. Selves are clusters of experience – we are all little corners of the universe. As participants in the ontic trust, we can see that we must take care of ourselves because that is tantamount to taking care of the universe. Thus, self-care is an important ethical directive in the information society. This is not a solipsistic or egotistical claim; rather, it is the recognition that without a good self, good work for others is not possible. It is the recognition that all beings are connected, but that certain actions must be directed by agents toward themselves for the subsequent betterment of all.

Keywords: Ontic trust; care; love; ontic ethics; social contract; extended self; extended mind

7.1 INTRODUCTION

As discussed in the previous chapters, self and identity are forces for action. For example, one's group identity may serve as justification for a particular action (Appiah, 2005), and more broadly one's self is the locus for all the actions one takes (Oyserman, Elmore, & Smith, 2012). The notion of action invites questions of which actions are better than others, and which action we should take in any

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given situation. This is the domain of ethics. In this chapter, we consider the ethical dimension of the self, conceptualized in terms of information.

To begin, some philosophical groundwork is necessary. In the following section, I describe how, with a broad definition of information, being informed is not just a matter of what a person knows, but how a person – or anything – *is*. Assuming that existence is good, we can say that the more something exists, the better it is. If existence is a matter of information (being informed), then the more information, the better. One aspect of humankind is that we are aware of our own information (at least to an extent). This means that we can manipulate our information. This being the case, and given the moral valence of information manipulation, then we humans seem to have a responsibility to care for information, that which constitutes the world as much as that which constitutes our very selves.

7.2 THE ETHICS OF BEING INFORMED

If we define information broadly, following Bates (2005a), as a pattern of organization, then we can conceptualize existence itself as the totality of interacting patterns of organization. On such an ontology, if a thing exists then it is informed. In everyday parlance, just as in information studies scholarship, we say someone is "informed" if they were exposed to some fact and then have knowledge of that fact. This is certainly an example of being informed in the sense I am discussing here. But on a more fundamental level, being informed can refer to a thing's being formed or having-been-formed through and as information. Everything that exists is informed and continues to be informed in this sense as it goes about existing. This is the case for everything from rocks and dust mites to human beings. Of course, some things change, informationally speaking, more than other things over time, and consonantly those things undergo being informed more. "Being informed" in the everyday, human sense is a special case of that general sort of being informed.

Speaking of special cases, we humans ourselves are a special case out of all the things that exist. To be sure, this has probably been affirmed as long as there have been humans, for various (and mostly now unseated) reasons. Today, one reason we can say this is because the human brain is known, or at least supposed, to be the most complex structure in existence. That is, it is the most informed thing we know of. Additionally, we seem to be the only being that is aware of its being informed. We have conscious experience – we can talk about what it is like to do this or that – which arises from our ability to surface and manipulate our information. Because of this, some instances of our being informed have a phenomenological component, i.e., an associated subjective experience. When Alice trips and falls (i.e., when her knee is informed by the hard concrete), she experiences discombobulation and pain. When someone gives Bob some news, he experiences hearing it, wondering if it's true, linking it to other things he's heard, etc. And because we know about our being informed, we can do something about it – we can direct our future of being informed.

As existents, we are inescapably moving into the future. This means information is always information-for; it grounds our futures. When the concrete informs Alice's knee, she will take some action – dusting it off in a minor case, or going to the hospital in a major one. When someone gives Bob news, he may say or do something in return. So for humans, being informed is a matter of having-been-formed by an experience in the past as relevant for something in the future. Everything is information and time is passing for everything. Different things become informed to different extents. The rocks on the moon are being informed to a much lesser extent than any human being on earth. Moreover, because we are the only things that know about our being informed, we can direct our being informed. We can move ourselves into a future of more information or less.

On an informational ontology, good and evil can be understood in terms of entropy. But whereas in thermodynamics and information theory entropy is a syntactic concept that disregards meaning, here we are concerned with what Floridi (2013, pp. 65–67) calls metaphysical entropy. As information (richness of content and meaningfulness) increases, metaphysical entropy decreases; as entities degrade, metaphysical entropy increases. With this view of entropy, Floridi posits that those actions which increase or decrease metaphysical entropy are morally qualifiable; those that decrease entropy are good, and those that increase entropy are evil.

This does not mean that it is good to have more of what the "man on the street" would refer to as information. We have seen how phenomena such as information overload and the circulation of misinformation can be entropic – in terms of chaotic mental health, misunderstandings, misinformed decisions, etc. Much so-called "information" is mere puffery – at best uninformative and at worst actually *de*formative. And some information may be highly "informative" but still destructive, as is the case with doxxing. How can one determine which is which? To be sure, this is a difficult task. To start with, as these examples show, the informativeness of something cannot be determined just by looking at that thing in isolation. It must be considered in the context of its creation and use, with a particular focus on the patients and longitudinal aftereffects involved. If it is the case that the flap of a butterfly's wings can have faraway effects, then such consideration can never be done exhaustively, but a good-faith attempt can be made. The question for each phenomenon is whether it is, in the end, constructive or destructive.

If things exist as information, and more information is good whereas less information is bad, then a link between ontology and ethics is evident. Assuming that existence is good, we can say that the more something exists, the better a thing it is. If existence is a matter of information (being-informed), then the more information, the better. Put differently, as living entities become more informed, they come to exist more fully and better. This is the position Wright (2016) develops in *Ontic Ethics*. It is the ontological dimension of flourishing, the traditional ethical concept. On this view, existence is not an all-or-nothing descriptor; things can exist to greater or lesser degrees.

Thus, though not without a dash of oversimplification, we might say that the purpose of life itself is to decrease metaphysical entropy. This is the conclusion

Pross (2012) makes, and it's a corollary of information–ethical frameworks such as Floridi's (2013). The very fact of life – what makes it life – is its being a dynamically stable kinetic system. Evolutionarily, the mechanisms of selection and reproduction are said to be counterweights to what would otherwise be the natural course of events, i.e., a descent into entropy (Pross, 2012).

All living things act out becoming-informed simply by their being alive and their striving to continue being alive. But as mentioned above humans are a special kind of living thing because we know we are alive, and we can think about our being alive and our becoming-informed. We can also direct our becoming-informed to sites beyond mere survival and reproduction. Maslow (1968) suggested that humans have a deep-seated psychological need to know, and that we will go to lengths to get information and build understanding, sometimes for no other purpose than the information and understanding itself. And the information gained in satisfying that need, "makes a person bigger, wiser, richer, stronger, more evolved, more mature. It represents the actualization of a human potentiality, the fulfillment of that human destiny foreshadowed by human possibilities" (Maslow, 1968, p. 121).

Wright (2016) interprets this observation not just as a description but as a prescription. For Wright, by being a person, one has a natural duty to grow as a person. We might balk at this. (In general, nowadays, we prefer to speak of our rights more than our responsibilities.) After all, none of us chose to be a person, much less this particular person. We might lament, as did Virginia Woolf's character Orlando, "I'm sick to death of this particular self. I want another" (Woolf, 1956, p. 308). But for better or worse, we are all ourselves; and the fact of time is that being is not frozen. So by being a certain kind of entity, one is thrust into the future necessarily. And any action that entity takes makes it either better or worse (as that entity). All actions are morally qualifiable, even if some actions matter very little, morally speaking. And if all actions are morally qualifiable, then it is better to do the good actions than the bad ones. You cannot choose not to act. Simply put, you have no choice but to do something, so you should do the best you can. Even Orlando did this.

What is "best" here, as implied above, is that which decreases metaphysical entropy the most. If the whole universe must be considered in evaluating an action, this is a tall order (to put it lightly). This was one of the points of the ethics-inflected sitcom *The Good Place* (2016–2020), which explored the feasibility of such a calculus. To be sure, it is difficult to make the leap from the self to the entire universe. Simply, we can't know about everything, and we can't care about everything. A conceptual tool for connecting the self to the rest of existence is the ontic trust, which I'll discuss in the following section.

7.3 THE ONTIC TRUST

The poet John Donne observed in words that are now cliche: "No man is an Iland, intire of it selfe; every man is a peece of the Continent, a part of the maine" (Donne, 1624, p. 31). None of us are monads; and attempting to live in isolation

is not the recipe for a good life, a fact exemplified by the story of Ebenezer Scrooge. Indeed, the very concept of the self is only necessary in social contexts. There is a link, then, between self and world; Floridi's (2013) concept of the ontic trust provides a useful way to think about this link, though he does not himself draw this connection.

The passage in which Floridi (2013) introduces the ontic trust is worth quoting in full:

> By coming into being, an agent is made possible thanks to the existence of other entities. It *is* therefore bound to all that already is, both *unwillingly* and *inescapably*. It *should be so* also *caringly*. *Unwillingly*, because no agent wills itself into existence, though every agent can, in theory, will itself out of it. *Inescapably*, because the ontic bond may be broken by an agent only at the cost of ceasing to exist as an agent. Moral life does not begin with an act of freedom but it may end with one. *Caringly* because participation in reality by any entity, including an agent – that is, the fact that any entity is an expression of what exists – provides a right to existence and an invitation to respect and take care of other entities. The pact then involves no coercion, but a mutual relation of appreciation, gratitude and care, which is fostered by the recognition of the dependence of all entities on each other.… In short, the life of an agent becomes a journey from being only a beneficiary to being only a donor, passing through the stage of being a responsible trustee of the world. We begin our career of moral agents as strangers to the world; we should end it as friends of the world. (Floridi, 2013, p. 302)

The ontic trust is built upon two prior concepts: the legal concept of the trust, from which it draws its name; and social contract theory, to which it is meant to be an improvement. In a legal trust, one party (the trustor) settles some property on a second party (the trustee) for the benefit of a third party (the beneficiary). Here no one fully owns the property: The trustee is the legal owner of the property, but they do not benefit from it; rather, they are a fiduciary, obligated to care for the property on behalf of the beneficiary, who is only an equitable owner of the property. The ontic trust (ontic here meaning roughly "that which exists"), then, is such a relationship wherein the whole world (including all agents and patients) is the property, owned by no one but passed down by past generations (trustors) and cared for by current agents (trustees), for the benefit of all future and current patients and agents (beneficiaries). Thus the ontic trust is a

> …primeval, entirely hypothetical pact, logically predating the social contract, that all … agents cannot help but sign when they come into existence, and that is constantly renewed in successive generations. (Floridi, 2013, p. 301)

As that quotation implies, Floridi intends the ontic trust to be an update to social contract theory. The social contract is an implicit agreement among people to cooperate, making some sacrifices in order to reap the benefits of social life; the absence of such a contract would make life "solitary, poor, nasty, brutish and short," as Hobbes (1651, p. 78) famously wrote when he introduced the concept. The social contract as theorized by Hobbes and subsequent thinkers does not arise automatically, but rather is contingent on others' accepting the contract, and it cannot account for moral action toward others who have no claim on us, such as future generations and nonhuman animals (Rachels & Rachels, 2015). Floridi's concept of the ontic trust overcomes these limitations. The ontic trust, as

Floridi writes, is entered unwillingly and inescapably, but it is not coercive; rather, it constitutes a caring bond, an invitation to respect and appreciate others (including other people and all organisms and things), "which is fostered by the recognition of the dependence of all entities on each other" (Floridi, 2013, p. 302). The ontic trust suggests that all beings and things are bound to each other by their very fact of existing, which implies obligations of care and respect.

The concept of the ontic trust has proven relevant and inspirational to thinkers in library and information studies, which is concerned with "the activity of stewardship of the semantic environment" (Floridi, 2004, p. 662). Fyffe (2015) writes in support of the ontic trust concept in the context of librarianship. For example, librarians are concerned with long-term preservation, and justification for such preservation is apparent in the ontic trust, as future generations (and their information needs) are given moral worth. Fyffe also gives additional support to the notion that all information objects deserve (at least minimal) moral respect:

> We do not know to what causal chains, or to what chains of evidence and reasoning, we owe our existence or our current knowledge. A kind of moral prudence would urge at least minimal respect for any object or knowledge-claim, lest we disrespect that which made us (or our current knowledge) possible in the first place. Floridi's argument may serve as a version of John Rawls's "veil of ignorance." (Fyffe, 2015, p. 279)

Van der Veer Martens (2017) elaborates on Fyffe's discussion, offering broader conceptual and historical context, and Bawden and Robinson (2018) build further on this as part of an argument in support of adopting Floridi's philosophy and ethics of information as a foundational philosophy in library and information studies. Further work remains to be done in this arena; first, the notion of curation or stewardship within the ontic trust needs to be more fully developed; next, the fundamental role of individual selves in maintaining the ontic trust needs to be explored. These are the topics of the following sections.

7.4 CARE AND ONTIC BONDS

When discussing the activities of information professionals, with or without reference to the ontic trust, many scholars make reference to curation and stewardship. Bawden and Robinson (2018), for example, titled their article "Curating the Infosphere"; and in recent years Digital Curation has emerged as an area within information studies. In my view, care is an umbrella concept for these notions of curation and stewardship. Indeed, *curate* and *care* are, etymologically speaking, the same word. It is also important to note that, though information professionals are curators par excellence, all of us must take care of our information environment. Under Floridi's postulation of the ontic trust, all beings have obligations toward each other and even toward being as such. These obligations can be encapsulated in the concept of care as it has been developed in philosophy.

In the past few years, care has entered discussions in information studies. The concept of care has roots in Antiquity, meaning a constructive attentiveness. It springs primarily from a second-century Roman myth that identifies the persona of Cura with humankind (Reich, 1995); but most recent scholarly discussions of care draw on the work of Carol Gilligan, who developed an ethics of care within the feminist ethics literature (Gilligan, 1982, 2018). Whereas other ethical theories look for generalizable standards for right conduct, Gilligan's care ethics emphasizes particular, detailed situations. Care ethics examines how people are dependent and interdependent, and how we respond to each other in lived situations.

Besides Gilligan's work, care reemerged as a concept of particular interest in twentieth-century philosophy through the work of Heidegger (2010), who famously defined human being itself as care. "Dasein initially finds 'itself' in what it does, needs, expects, has charge of, in the things at hand which it initially takes care of in the surrounding world" (Heidegger, 2010, p. 116). For Heidegger, care is the unity of past, present and future; when we care about things, we project ourselves into the future (concerning, e.g. the future welfare of whatever we are caring about); and we bring forward the past in caring, as we came initially "thrown" into the world with interests and concerns that we can't ultimately justify. The fact that we care about some things and not others is another key aspect of care for Heidegger (just as Gilligan proposes); part of our constitution is "being-with," which necessarily means being with some things and not others. Try though we might want to care about everything, to care about "the world" broadly construed, or to subject our cares to utilitarian calculations, our ability to care is ultimately finite, and we must prioritize. As we each have a particular situation and perspective, certain issues will be closer to us. On this point, Wright (2016, p. 216) writes, "The ontological importance of caring and nourishing our worlds must be distributed largely according to important personal situations, connections, preferences and talents."[1]

So care is the mechanism by which the bonds that constitute the ontic trust are created and strengthened. Individually we cannot do much to strengthen the ontic trust in general, but rather we must focus on bolstering the bonds that we find closest to us. Strengthening our very selves is an important part of this. The ontic trust constitutes a network of caring relations between all information organisms and information objects (the distinction between these is not important for the moment). Selves, as conceptualized in Chapter 5, are also information objects and should therefore also be subjects of care in the ontic trust – as both agents and patients – as described in the following section.

[1]The shared interest in care suggests a possible link between the work of Gilligan and Heidegger (she does not acknowledge Heidegger's work on the concept), particularly through the work of Emmanuel Levinas, one of Heidegger's early followers (Reynolds, 2016); however, it has been suggested that drawing such a link may be problematic (Paley, 2000).

7.5 THE SELF AND THE ONTIC TRUST

At age 71 years, Socrates found himself on trial, slated to be put to death for corrupting the youth of Athens. With apparent magnanimity, he was given the opportunity to go free if only he would stop doing philosophy. But Socrates would rather die, which he expressed in some of his most famous words: "I say that it is the greatest good for a man to discuss virtue every day … for the unexamined life is not worth living" (Plato, Apology, 38a). For Socrates, an ethical life was one of discussion and critical thinking, even if this led to difficult conclusions. This was a means of cultivating virtue (the most fundamental of which, for Socrates, was knowledge) in order to improve oneself and one's world (Parry, 2014).

We are familiar with the ethical injunction *know thyself*. But Socrates' philosophy reveals another maxim: *care for thyself*. Though today this phrase is all but forgotten, in Antiquity it was a central rule for living (Foucault, 1988).[2] Such is the approach of virtue ethics, which assumes that if one cultivates oneself, then that goodness will percolate outwards, creating a good society and world. Even if this approach worked in ancient Athens, it may not work in today's societies, with modern information and communication technologies, complex political arrangements and diffuse boundaries. But, as Floridi (2013, pp. 166–168) argues, this does not mean that the constructionist ethics should be abandoned. Rather, it must shift from egopoiesis (construction of the self, or ego) to eco-poiesis (construction of the whole information environment, including both agents and patients).

Selves are clusters of experience – we are all little corners of the universe. As participants in the ontic trust, we can see that we must take care of ourselves because that is tantamount to taking care of the universe (see Fig. 7.1). At root, this is the recognition that all beings are connected, but that certain actions must be directed by agents toward themselves for the subsequent betterment of all. In the next chapter, I discuss the role of technology in this sort of self-care. But first, we must conceptualize self-care on a more theoretical level.

The self should not be understood atomistically; indeed, as mentioned above, the very concept of the self is only necessary in social contexts. Consonantly, self-care is not a matter of solipsism. On the contrary, as Hadot (1995) discusses, self-care is a path to ultimately transcending the self, to seeing oneself as belonging "both to the whole constituted by the human community, and to that constituted by the cosmic whole" (Hadot, 1995, p. 208). Here he quotes Seneca, who wrote of "plunging oneself into the totality of the world" (Letter 66, 6; translation by Hadot). As Hadot writes, this is accomplished by a form of looking inward that also looks outward – in which a person experiences themselves as connected to everything else, leading to a shift in perspective: experiencing life *sub specie æternitatis*.

[2]Indeed, whereas philosophy today is characterized by abstract, intellectual argumentation, philosophy in ancient times was a matter of living life in the best way possible and discovering how to do so through the cultivation (care) of the self (Hadot, 1995).

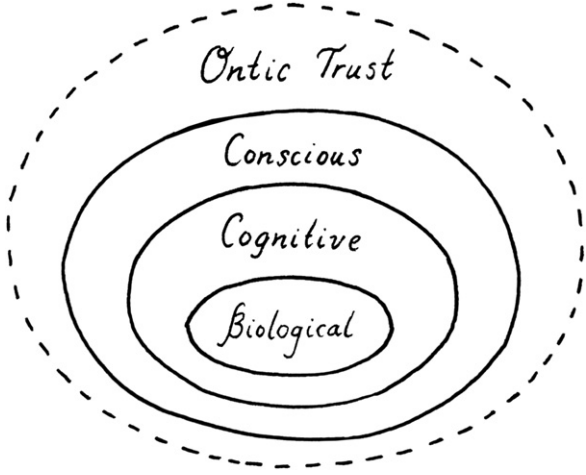

Fig. 7.1. The Three-tiered Encapsulation of the Self (Biological, Cognitive, and Conscious) as Part of the Ontic Trust.

Above, I suggested that if metaphysical negentropy (i.e., in-formation) is good, then existence is good, and more existence is better; and so the more informational existence is, the better. For us humans, we find our own existence to be at issue, and so it is good for us to do what we can to make ourselves exist more fully and better. In so doing, we contribute (granted, in a very small way) to making existence itself exist more fully and better.

In what sense can a self be "more" or "better"? Recall the theory of the self as a three-tiered encapsulation: biological, cognitive, and conscious. We can grow ourselves at any of these layers (see Section 5.3). Sometimes our self-care involves enlisting others. For example, we might call upon physical therapists, teachers, or lovers at various points in our lives. With a bit of simplification, we might say that physical therapists chiefly care for the biological layer of selves; teachers for the cognitive one; and lovers for the conscious. This fact shows us that we are not alone in our efforts to care for ourselves, and it also shows us that we must likewise help others to care for their selves. The best physical therapists, teachers, and lovers – to say nothing of librarians and other information professionals – do this, of course. Responsible ontic trustees show you that, no, you are not perfect, but that is no cause for agony; you can continually build and better yourself, and indeed you ought to.

In general, growing as a self involves valuing, loving and caring. It is a matter of discovering and cultivating values, coming to love particular people and things, and caring about these values, people, and things. This is the depth of what it must mean to be "informed." (If to be informed is to know, then we can see a suggestion of this depth in the biblical sense of the verb "to know.") To be sure, this sense of being informed involves engaging with those aspects of the world that we don't typically consider informational (such as going for a walk in

the woods), but it also involves practices that are readily seen as informational, such as seeking and applying information on particular topics. It also involves technologically supported self-care. To be sure, today's technologies offer more potentialities but also pitfalls in this regard, as will be discussed in the following chapter.

So, as I have suggested, insomuch as a person exists, they should seek to become more informed. This makes a better self. And not only that, but a better world. This is because we humans are not something distinct from existence, but verily an expression of existence – folds in the fabric, whirlpools in the river of being. As Wright (2016, p. 147) says, "We flourish in tandem with our worlds.… Goodwill toward the Other underlies the self." Love, for example, is broad, not narrow. A parent might love their child, but as Wright observes it is not possible for a parent to love their child alone and be indifferent to all other children. True love for the child entails love for the child's own relations (playmates, interests, possessions, etc.) and for similar phenomena (other children). "Real love is completed in its network of relations." In other words, love should not be thought of as a zero-sum game, a competition for slices of pie; rather, it makes the pie bigger. As Juliet tells Romeo (Shakespeare, 1599, Act 2, Scene 2):

> My bountie is as boundlesse as the sea,
>
> My love as deepe. The more I give to thee,
>
> The more I have, for both are infinite.

7.6 CONCLUSION

In this chapter, we have approached the ethical dimension of selfhood. I introduced and discussed Floridi's concept of the ontic trust as a way to conceptualize the place and role of the self in today's information environment. The ontic trust is constituted by bonds of care, a concept that emphasizes the constructive, interdependent, and responsive aspects of relationships not only between humans but between any and all information entities. Focusing on the self, we explored the concept of self-care and the role of the self in the ontic trust. Much remains to be done in determining and validating how these ideas can be put into practice. In the next chapter, we will take some steps in that direction through discussing the link between self-care and modern technology, and, more broadly, the prospect of designing for self and identity.

Chapter 8

DESIGNING FOR THE SELF

ABSTRACT

Some of today's most widely used technologies do not seem conducive to self-care, and consequently they do not nourish us as selves. Rather, in today's most lauded sociotechnical systems, from Google search to Facebook, users' participation (free labor) is commodified and channeled into corporate profits. Users do engage in self-focused activities, such as posting selfies and status updates, but these do not have the character of self-care. This amounts to self-obsession without self-consideration. An illustration is given by comparing the early-modern artistic practice of self-portraiture with the modern-day smartphone practice of selfie-making. Self-portraiture has been shown to be conducive to self-care, whereas the selfie by and large is not. This comparison invites strategies for injecting self-care into selfie-making technology, as an entree into designing for self-care generally. These strategies include jardin secret, self-questioning, and multiplicity.

Keywords: Technologies of the self; self-care; jardin secret; self-questioning; multiplicity; selfie

8.1 INTRODUCTION

Shoshana Zuboff joined the business school faculty at Harvard in 1981, and before the end of the decade she published a groundbreaking book. Her *In the Age of the Smart Machine* (Zuboff, 1988) is an indispensable look at how information technology was changing the workplace. As I am writing, the book has been cited over 9,000 times, according to Google Scholar. Following that book, she published very little – only a handful of articles over 25 years. Then, in early 2019, she released a lengthy, dazzling polemic, giving the impression that she'd been hunkered down, laser-focused for the past quarter-century. *The Age of the Surveillance Capitalism* was received with consonant fanfare.

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In the book, Zuboff (2019) argues that today's tech firms such as Google and Facebook are ushering in a new form of capitalism, which she calls surveillance capitalism. While in earlier forms of capitalism, firms used consumer data to improve their offerings, in this new form of capitalism, consumer data becomes an end in itself – a new revenue stream. In this new paradigm, human experience is monetized; and over time more and more domains of human experience come to be subjected to tracking and monetization. *The Age of the Surveillance Capitalism* tends toward the hyperbolic, and the quality of its scholarship has been questioned (Morozov, 2019). But that is not to say the book is not worthwhile. (Perhaps we might say of Zuboff what has been said of Marshall McLuhan: "One reads McLuhan for sparks, not scholarship" (Peters, 2015, p. 17).) As the book emerged with an incredible deluge of positive reviews and a press tour, it has done much to awaken the public to the way new digital technology and business structures are impinging on human experience.

To be sure, Zuboff is not the only and was not the first to point out these sorts of issues. To cite only two examples, *Exposed: Desire and Disobedience in the Digital Age* (Harcourt, 2014) details the way social media and their affiliate companies collect, package, and profit from users' personal information; and *Platform Capitalism* (Srnicek, 2017) chronicles the transformation of capitalism since the 1970s through the rise of networked digital platforms.

While Zuboff and these other scholars raise a swathe of legal and political topics, they also discuss issues closer to individual human lived experience, including our liberty and autonomy. That is the focus of this chapter: Here we are interested in lived experience of and with information, and how this is changing as information inhabits new technological forms. In this chapter, we will discuss principles for designing a technological future that is more humane and caring. But first, we must better understand the troubled state of self-care in today's technological climate – an incredibly complex state, bound up with with issues of self-obsession, perfectionism, moral change, and even fantastical thinking.

8.2 SELF-CARE AND TECHNOLOGIES

It is perhaps an understatement to say that modern information and communication technologies (ICTs) play a major role in how we construct and conceptualize ourselves and our relationships. Both Mazlish (1993) and Floridi (2014) have suggested that the concept of information signals a fourth revolution in our understanding of humanity, after the discoveries of heliocentrism, natural selection, and the subconscious. In Floridi's words, ICTs are inherently "technologies of self-construction, significantly affecting who we are, who we think we are, who we might become, and who we think we might become" (Floridi, 2011b, p. 550).

As a case in point, Ess (2010) discusses how changes in literacy interact with our notion of selfhood. Ess describes how our sense of the self as an autonomous individual is related to print culture and both underlies and requires modern liberal democracy. As our culture shifts, with modern ICTs, into secondary orality (i.e., a blend of print and oral culture) (Ong, 1982), our sense of self is

giving way to a networked, relational, or "smeared out" self. Ess worries, along with thinkers such as Postman (1985) and Day (2014), that modern ICTs block out possibilities for critical engagement and thinking – indispensable elements of self-care. Even though a privileged elite may still be able to function as autonomous selves in this clime, the masses may only be able to "amuse themselves to death," to use Postman's famous phrase.

Ess (2010) suggests that the best-case scenario for our future is that we will develop a more complex sense of self, which he calls a hybrid self, such that

> …the skills and abilities of literacy and print will continue to make possible the sort of 'care of self' apparently needed to foster the emergence and sustained presence of a modern self as moral agent. (Ess, 2010, pp. 113–114)

This hybrid self entails on one hand a modern-style individual self that Ess calls the virtuous self, which practices privacy, autonomy, skilled judgment, patience, etc. This virtuous self grounds the function of the relational self, which is widely distributed across networked technologies that entail pleasure, convenience, distraction, and surveillance. To connect this to Floridi's conceptualization of selfhood, we can understand this hybridity to sit chiefly at the conscious layer, though Floridi does contend that multiagent systems can be selves, in which case the biological and cognitive layers are also distributed.

If the alternative is enslavement to ICTs and a total loss of selfhood, we should work to cultivate this hybrid self. Given the inevitability that technology shapes humanity and that humanity and technology are inextricable from each other, a crucial route for self-construction and self-care is through technology, as mentioned in a seminal paper by Capurro (1996). What does such self-care look like, practically speaking? For an answer, we can look to the later work of Foucault (1988, 1997), in which he turned away from the sociological, historical, and political issues for which he is best known, toward questions of selfhood.

Foucault (1988) explored how the Socratic principle of self-care was enacted technologically in antiquity, through a set of technological practices. According to Foucault, these technologies of the self

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

One example of such technologies were personal notebooks. As Foucault writes, many people – and not only the elite by any means – in Ancient Greece and Rome kept *hypomnemata* (ὑπομνήματα) or notebooks "to collect what one has managed to hear or read, and for a purpose that is nothing less than the shaping of the self" (Foucault, 1997, p. 211). These were fragmentary notebooks, but their result was not merely a collection of disjointed scraps; rather, they contributed to a new whole, along with the writer. According to Foucault, the purpose of keeping hypomnemata was, explicitly, to care for the self. These notebooks are but one example of ancient technological self-care; other examples included letter writing and meditation.

Taking a step away from the particulars, the various technologies of the self that Foucault (1988, 1997) analyzes seem to share some general principles that make them conducive to self-care:

- bringing oneself out of mundane setting (physically and/or mentally) in order to reflect (i.e., retreating into oneself)
- revisiting the past and imagining the future
- comparison of the self to something outside (external reality, social rules, God, etc.)
- investigation of the interplay between one's private and public lives
- contemplation of the divine as a mirror to view the self
- looking at the mundane details of life

A key aspect of these practices of self-care is that they are hermeneutic, meaning they function through iterative interpretation. Something is written or thought (externalized) and then examined (internalized), and the thoughts that arise are then externalized and internalized again.

On Foucault's account, these practices shifted during the Middle Ages and gradually faded away; since the seventeenth century or so, the focus has been on externalization. The movement toward externalization came to a head in the second half of the twentieth century, encapsulated in Andy Warhol's 1968 announcement: "In the future, everyone will be world-famous for 15 minutes" (Guinn & Perry, 2005). Around this time, people in the West began spending more and more time engaging with the mass media. This was also a harbinger of the era of self-esteem, which came with the double-edged sword of perfectionism:

> The American self brought with it a wildly magnified emphasis on the power of the individual. The self was inherently heroic, now, and if you failed to live up to the heroism that was already in you, you were categorically a failure. (Storr, 2018, p. 163)

While prior generations may have been characterized by their humility, more and more Americans strove (and strive) to attain fame and fortune (Brooks, 2015, p. 7). And falling short of fame and fortune, many have lost their sense of what makes life meaningful – what has been termed a "crisis of meaning" – as will be discussed in Part 3.

Thus, a millennia-old human toolkit for self-care seems to have been forgotten. And if we follow the discussion of Ess (2010), we can conclude that our contemporary ICTs may not be conducive to such hermeneutic reflection. Bakardjieva and Gaden (2012) suggest this is because today's ICTs blend technologies of the self with technologies of production in an unprecedented way, as users' participation (free labor) is commodified and channeled into corporate profits. They make the point that, if contemporary technologies of the self are used uncritically and unreflectively, they may not truly be conducive to self-care.

A year before Warhol, decades before the birth of social media, playwright Tom Stoppard observed,

> I have a feeling that almost everybody today is more trying to match himself up with an external image he has of himself, almost as if he'd seen himself on a screen. (Sullivan, 1967, p. 27)

Given that Stoppard is a playwright, we are invited to recall Goffman's (1959) use of the theater metaphor for understanding self-presentation: Like actors, Goffman said, we are sometimes onstage and sometimes backstage; onstage we are consciously performing, while once our character exits, we can drop the role. But what happens once we can watch our performances on television? In today's ICT milieu, more and more, we have no exit. As Marche (2012, para. 38) writes, "Now we are left thinking about who we are all the time, without ever really thinking about who we are."

So how might we recoup authentic possibilities for technological self-care? Capurro (1996) gives some indication; for him, ethical ICTs must afford: friendship with other people and beings, choice in the face of oppression, silence in an age of noise, and laughter in spite of fear. Separately, Heim (1998) distills principles for ICT design meant to resolve a perceived conflict between humanity and nature, which he presents in a framework of harmony, respect, purity, and serenity. Such accounts, while inspiring, are not concrete, and consequently it is unclear how they could be put into practice. And, in the context of the crisis of meaning and perfectionism, it seems that, over 20 years after Capurro's and Heim's writing, little progress has been made. In my own work, I have explored how art-making can be construed as an information practice conducive to self-care, particularly in my research on self-portraiture (Gorichanaz, 2018b). However, much more research – to say nothing of communication and design – in this area remains to be done.

8.3 ILLUSTRATION: FROM SELF-PORTRAITURE TO SELFIES

An example may be in order. The previous section discussed technologies of self-care on a theoretical level, suggesting that our technologies have shifted over time with respect to their conduciveness to self-care. In this section, we will compare the artistic practice of self-portraiture, long discussed as a fruitful site for self-care, and the selfie, an emergent digital genre which, though ostensibly an outgrowth of the self-portrait, may not be as useful in terms of hermeneutic self-care.

Documentation has come to be a "necessary cultural technique" over the past century, as described by Briet (2006). Modern society has been called a document society; many of our social processes rely on documents, and now it is through these documents that we come to understand reality (Buckland, 2005). Among these documents are ones we create about ourselves or self-documents, which both provide evidence of and construct some aspect of the self: pictures of our food, records of the places we go and the routes we take, posts about our joys and

travails, photos of our faces, etc. Many have commented that today, "we're living to document our lives" (Fischetti, 2014, para. 5).

Of all the genres of self-documentation, the selfie is particularly notable. Over the past decade or so, it has become ubiquitous. For the uninitiated, the *Oxford English Dictionary* defines *selfie* as a self-portrait made with a smartphone camera. Evidence of the importance of the selfie abounds: Oxford Dictionaries (2013) named *selfie* the international Word of the Year in 2013, citing a 17,000% increase in usage over the previous year. In mid-2016, Google reported that over 24 billion selfies had been uploaded to Google Photos in the prior year (Sabharwal, 2016). The social networking applications Instagram and Snapchat largely facilitate the circulation of selfies; as of January 2020, there are over 410 million posts explicitly tagged as #selfie on Instagram.

The selfie has engendered a large corpus of scholarship. In these discussions, it has generally been assumed that the selfie is a subgenre of artistic self-portraiture (Lim, 2017; Mirzoeff, 2015; Rettberg, 2014). In the view of Mirzoeff (2015, p. 31), the selfie "expresses, develops, expands, and intensifies the long history of the self-portrait." Mirzoeff sees the selfie as a digital networked outgrowth of this artistic tradition. This seems to be the popular opinion, to the extent that, for example, Rembrandt's self-portraits have been described as selfies (e.g., Sooke, 2014). More recently, the Philadelphia Office of Arts, Culture, and the Creative Economy presented the exhibit *Veterans Empowered Through Art: The Six Week Selfie Project* (Huynh, 2017), which involved museum tours and workshops and included sketches, complete self-portraits, poetry, and personal photos – far more than the term *selfie* implies.

Conflation and confusion notwithstanding, it seems that selfies and self-portraits are quite different. In my doctoral research, I conducted a wide-ranging review of the literature on selfies and self-portraits (Gorichanaz, 2018b); the findings of this review will be summarized here briefly. A review of the relevant scholarship suggests that selfies:

- do not require technical skills (Lim, 2017; Lüders, Prøitz, & Rasmussen, 2010; Peek, 2014; Saltz, 2014)
- emphasize the present moment (Peek, 2014; Saltz, 2014)
- emphasize external appearances (Wendt, 2014)
- manifest a networked sense of self (Levin, 2016; Lüders et al., 2010; Mirzoeff, 2015; Rettberg, 2014; Rubinstein, 2016; Wendt, 2016)
- are rooted in sharing, communication, and consumerism (Frosh, 2015; Lim, 2017; Mirzoeff, 2015)
- may be motivated by narcissism or exhibitionism (Fox & Rooney, 2015; Lee & Sung, 2016; Maddox, 2017; Miltner & Baym, 2015).

The self-portrait, according to the scholarship, is opposed to the selfie along all these dimensions. Self-portraiture does require training and expertise; self-portraits are meant to be timeless, integrating the past, present, and future, and they must be created over a stretch of time; they emphasize the artist's inner life rather than

external appearance; they manifest the individualist sense of self; they are relatively seldom shared or exhibited (and to the extent that they are communicative, the communication is substantive rather than phatic); and they are intrinsically motivated (Cumming, 2009; Freeland, 2010; Hall, 2014; Maes, 2015; Woods-Marsden, 1998). Additionally, while selfies are bound to smartphone technology (camera and websharing capabilities), self-portraits may be done in any medium or style. In the language of experience, we might say that self-portraiture is undertaken as an experience in itself, while selfies are created to document other experiences.

This comparison, admittedly, has been simplified. In some cases, the distinction between selfies and self-portraits is not so clear. Even if the paradigmatic selfie can (uncharitably) be called meaningless and mindless, there are surely cases in which selfies are personally meaningful sites for self-authoring, and where they involve effort, drawing out and taking time (Bae-Dimitriadis, 2015; Berlatsky, 2013; Brager, 2017; Ehlin, 2015; Murray, 2015; Warfield, 2014). But it would seem, philosophically speaking, that such "selfies" could be considered not just selfies, but rather truly self-portraits.

What is important for the present discussion is the self-portrait's and/or selfie's capacity for self-care. The scholarship on self-portraits shows that self-portraits have served as technologies of self-care at least since the fifteenth century. Empirical accounts have shown self-portraiture to be successful in art therapy (Alter Muri, 2007) and conducive to building understanding of the self and constructing that very self (Gorichanaz, 2020). Some of the features that seem to afford this are the time and hermeneutic reflection it takes to create a self-portrait.

If, as Ess (2010) and others suggest, we are bearing witness to the growing dominance of a relational sense of self, then the selfie is a paragon of that emergence. On the other hand, the self-portrait is a technology of care associated with the virtuous self and the construction of the self. Moreover, art in general and self-portraiture in particular are ways to practice free expression in a world where, more and more, selves are constrained and defined by given standardized possibilities in information systems.

Thus, if our best hope for the future is a hybrid self (Ess, 2010), then perhaps there is a place for both selfies and self-portraits in our toolbox of self-construction. To be sure, selfies are created far and away much more frequently than are self-portraits; self-portraits are in the purview of a privileged few. But there would seem to be an opportunity to democratize self-portraiture in a way that preserves its capacity for virtuous self-care. To be sure, the selfie has been lauded as a democratized form of self-portraiture, but it does not seem to have (always) preserved the self-care aspect of the self-portrait. What might such a democratization look like? More broadly, how might we design for self-care in a digital world?

8.4 STRATEGIES FOR DESIGNING FOR THE SELF

The overarching takeaway of the discussion in this chapter so far is that the self changes through experiences with information and technology, and changes to identity may follow. We must design with this in mind.

Perhaps not all designs need offer opportunities for self-care (sometimes you just need to get your taxes done), but it seems safe to say that we could do with more opportunities for self-care than we find at present. In the context of the discussion over the past few chapters, designers in this space should consider the various information objects that constitute each user's self, the dimensions of personal and group identity that may be relevant in a given use context, and the ways in which each self is connected in a caring way to other selves.

There has not yet been much discussion on designing for self-care in the literature. By and large "self-care" is conceptualized narrowly, having to do with one's physical health management (e.g., Miller, 2017; Schüll, 2016). One example is Zimmerman's work in HCI on designing for the self (Zimmerman, 2009). Zimmerman uses product attachment theory, which describes how people incorporate certain of their possessions into their self-concept, as a basis for experience design. In this paper, Zimmerman reflects on a number of prior designs developed in his lab and establishes guidelines for applying product attachment theory in design work – to help, as he writes, people become "who they desire to be." He proposes six framing constructs, which are specific perspectives that designers can take:

(1) Role engagement, helping people fully inhabit a single group identity, e.g., being a "parent"
(2) Control increasing people's perception of control through control of devices, control over space, opportunistic access to critical information, and control over others' behavior
(3) Affiliation, emphasizing bonds with others (both individuals and groups)
(4) Ability versus bad habit, providing people with additional abilities to reduce errors or addressing their undesirable habits
(5) Long-term goals making long-term goals visible in people's daily lives
(6) Ritual, engaging people in meaningful, repeated structures of behavior

Bringing this work forward, I use these framing perspectives to propose three concrete principles that designers can consider while creating something: jardin secret, or providing private psychic space for a person to inhabit; self-questioning, or offering opportunities for a person to reflect on and modify what constitutes their self; and multiplicity, or providing people with customizable and personalized settings and paths through an information space.

8.4.1 Jardin Secret

In today's connected, always-on climate, we are sharing more and more aspects of our lives on social media. And consonantly, many designs in the space of self-care invoke sharing (Grosse-Hering, Mason, Aliakseyeu, Bakker, & Desmet, 2013; Hodge, Montague, Hastings, & Morrissey, 2019).

We humans are social beings, and we have a need to share and communicate. Yet humans also have needs for hiding, keeping secrets, and holding private spaces. Indeed, psychologists emphasize that healthy selves depend on a mix of

public and private experiences (Busch, 2019). We may make some aspects of ourselves public, but other aspects may only be shared with significant others, and other aspects still may be kept entirely to ourselves. Sometimes, the very integrity of an attribute depends on keeping it secret, even nonverbal. As one of Haruki Murakami's characters said of a deeply felt experience, "Putting it into words will destroy any meaning" (Murakami, 2005, p. 441).

Designers should not forget how indispensable it is for us to keep some things secret: "When identity is derived from projecting an image in the public realm, something is lost, some core of identity diluted, some sense of authority or interiority sacrificed" (Busch, 2019, p. 9). On this basis, Warren and Brandeis (1890), early developers of privacy law, equated the right to privacy with a right to personality. Similarly, Zuboff (2019) makes reference to the medieval right to sanctuary, once supported by law, i.e., the right for each of us to have a place to go that is not subject to scrutiny or surveillance. She writes:

> …the crucial developmental challenges of the self–other balance cannot be negotiated adequately without the sanctity of "disconnected" time and space for the ripening of inward awareness and the possibility of reflexivity: reflection on and by oneself. The real psychological truth is this: *If you've got nothing to hide, you are nothing*. (Zuboff, 2019, p. 479)

I suggest that designers of all kinds can respect the human need for interiority through the principle of jardin secret. In French, *jardin secret* (literally, secret garden) refers to "a kind of psychic cloister, anything from a small personal ritual to a state of mind, some private thing, idea, or activity that people keep to and for themselves" (Busch, 2019, p. 44). Jardins secrets are conducive to self-construction precisely because they are unshared. They provide space for a person to develop further attributes of self – to discern their values, experience positive feelings, and establish a sense of self-worth. The principle of jardin secret invites designers to consider what might *not* be shared, and all the more valuable for it. Moreover, designers can help users recognize the value of keeping certain information to themselves in this world of "I share, therefore I am." Recall that a self is a tiered encapsulation of an entity from its environment. The principle of jardin secret reminds us that the membranes that constitute a self cannot be fully erased without destroying that self.

An example of a design exemplifying jardin secret is Fibo (Carpenter & Overholt, 2017), a wearable bracelet for partners of pregnant women. The designers sought *subtle* interactions; for example, when the baby kicks, the Fibo wearer feels a "kick" on their wrist. In this case, the design intention is for the parents-to-be to bear this secret together, and the secret seems to get its special meaning in part precisely because it is kept from colleagues and acquaintances. Such kicks are jardins secrets – things that only the wearer knows, which *could* be shared but just as easily might not be. The question of sharing brings up an interesting point: With jardin secret, certain interactions should be secret by default, so users who choose to share them do so conscientiously. To be sure, the power of jardin secret is in keeping things to oneself; but when the secret is shared, it is shared through *storytelling* rather than superficial "sharing."

While the Fibo creates a jardin secret by offering its wearer a new mode of interaction, other sociotechnical interventions engage with jardin secret as a way to reclaim privacy that has been taken away. Good examples of this can be seen in responses to digital surveillance, which seem to have begun with artistic interventions. In 2014, for example, artist Leo Selvaggio distributed prosthetic masks of his own face as a foil to facial recognition technologies (Sokol, 2014). By 2019, such concerns had left the domain of art, as protestors in Hong Kong used laser pointers, spray paint, and other interventions to block face-recognizing surveillance cameras outside Chinese government offices and those used by police to identify dissidents (Mozur, 2019).

8.4.2 Self-questioning

People take on various roles at different times (e.g., parent, employee, teacher, etc.), and designs for the self should help people reflect on (1) the roles they are taking and (2) the ways they shift between roles (Zimmerman, 2009). In reflective informatics, this has been conceptualized as the inquiry dimension of reflection (Baumer, 2015). Of course, one's roles are part of one's self, and better understanding one's roles in life is a way to strengthen the associated attributes of that person. Specifically, such reflective work can more deeply instill self-worth and values; and understanding how one's role changes contextually can deepen one's capacity for courageous response to difficult circumstances.

Following the principle of self-questioning, designs could put a person's self into question – not in the sense of challenging a person's sense of self, but exposing aspects of it for observation. For instance, a design might show a person their routines and habits, or perhaps use moments of breakdown as opportunities for reflection (Zimmerman, 2009), allowing them to learn about themselves and the things that they do – and also to see that they are making choices that inflect who they *are*.

One simple example of a design in this vein, mentioned by Baumer (2015), is Wandering Mind (Pirzadeh, He, & Stolterman, 2013). This is a journaling-based personal informatics system which analyzes a person's journal entries to reflect back what the journal entries show about their values and preoccupations, inciting personal inquiry. This promotes a person's sense of self by helping them develop a new perspective on their data.

To be sure, though, any number of aspects of the self could be surfaced in this way. Obvious examples include typical self-tracking data, such as how far one has run, how one's heart rate changed over the course of the day, one's location check-ins, etc. But the possibilities of material for self-questioning are endless: any "data," whether qualitative or quantitative, actual or fictive, computable or not, could be shown to a person as an invitation to wonder.

8.4.3 Multiplicity

When it comes to designing for selfhood, reflection, and the like, a much-discussed design principle in HCI is ambiguity (Boehner, Sengers, & Warner, 2008; Gaver, Beaver, & Benford, 2003; Sengers & Gaver, 2006). Ambiguous

designs allow users to understand objects in personal and contextualized ways that may not have been predictable by the designer. Put differently, such designs are deliberately left open-ended, inviting users to complete the object for an unpredictable array of experiences. Ambiguity invites users to forge their own path.

The principle of multiplicity is similar to ambiguity, but rather than offering a blank canvas to explore, designs offer multiple (but not unlimited) paths to take. This involves showing users what paths are possible and helping them decide which path to follow. This contributes to a person's values, and when their interactions are guided and scaffolded appropriately, it also contributes to self-efficacy (Zimmerman, 2009).

With multiplicity, designs should allow and invite people to make distinctions (e.g., settings, options, use patterns) that matter to them, considering both the object itself and other objects that can be used with it. Multiplicity involves both helping people to discover what distinctions are possible and also to decide which ones are important to them personally. This could be a guided process, showing what settings or options exist in a system and encouraging people to select some. Under this principle, designs should invite multiple ways of being used and multiple ways of being incorporated into one's life – as well as change over time.

This principle also recognizes that all interactions can't be steeped in self-care all the time – and perhaps that is well. Sometimes we just need to get something done, and a system should be flexible in the ways it can be used. Writing in this vein, Su and Stolterman (2016) suggest that designs might have several existential modes, drawing on the philosophical work of Søren Kierkegaard. They give examples from TuneTracker, a system for recording and providing analytics on traditional Irish trad music played in a particular pub. As they discuss, TuneTracker can be used with three different existential orientations: In the (1) esthetic mode, users can quickly home in on the most intense moments of a recording; in the (2) ethical mode, users experience a respect for tradition and grasp the commitment necessary to excel as a trad musician; and in the (3) religious mode, users are confronted with the enormity of the task of becoming a master musician and invited to practice irony (for more on irony, see Section 12.5).

8.5 CONCLUSION

In one of his essays, Montaigne wrote, "There is no writing so difficult as the writing of myself" (de Montaigne, 1886, p. 68, translation mine). Of course, writing oneself is not a matter of simply describing some preexisting self; rather, it is an act of building up the very self being written. Documentation is an act of inscription as much as description (Day, 2019). Though writing oneself may not change the biological encapsulation of oneself, it certainly changes the semantic one and perhaps also the cognitive one.

Being human has always been difficult. We face obstacles and injustices. Even our most concerted efforts may fall short. And insomuch as we recognize our selves as loci of agency in the world, being a self has likewise been difficult. We

experience competing motivations, which may lead to moral struggle. In many respects, living today is easier than it has ever been – we live longer and healthier lives, with more bounty and freedom and much less conflict. And yet developing oneself remains a challenge. Perhaps it is only getting more difficult. In today's digital climate, we face unprecedented demands on our attention, and this more than anything else may be injurious to our efforts related to the self. In this chapter, we have discussed three strategies for reclaiming the space of attention through design, with some examples. These strategies show the importance of considering the experiential dimension of information; in designing information solutions, it is not just about putting something out there but of deeply considering how people might attend to it.

But questions, of course, remain. With freedom comes responsibility; so who or what should we be responsible for? Put differently, how should we spend our time? These questions lead us into the third part of the book.

PART III

MEANING

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Chapter 9

INFORMATION AND MEANING

ABSTRACT

Information is often defined in terms of meaning. Traditional theories of meaning, each with some drawbacks, have been rooted in language; but a more satisfactory theory of meaning may be rooted in information. Meaning can be defined as coordinated action toward some end. In this sense, the meaning of something is the way it affords and constrains actions, and it is therefore inextricable from its context. Meaning can be discussed in several senses, including personal, social, environmental, historical, political, etc. Because information studies is concerned with the intersection of people and information, two key conceptualizations of meaning are personal meaning and social meaning. When activities have this meaningful dimension, they make a person's life feel more valuable and worth living, as a person and/or as a member of a group. In general, personal and social meaning include aspects such as purpose and connection with others.

Keywords: Meaning; sense-making; personal meaning; coherence; mattering; purpose; connection

9.1 INTRODUCTION

Information is often defined in terms of meaning. For example, Bates (2005a, 2006) defines information (sense 2) as a "pattern of organization of matter and energy given meaning by a living being"; and Yu (2015) defines information as a combination of data and meaning. But what "meaning" means is often left undiscussed. Bates describes to some extent how beings "assign" meaning, but does not address what meaning might be; and Yu specifically brackets it out of his discussion. This is typical of scholars in information studies.

Two scholars of information behavior in particular seem to have made meaning central to their work. Carol Kuhlthau has developed a process model of information seeking that she describes as "seeking meaning" (Kuhlthau, 2004);

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and in Dervin's Sense-Making Methodology, a user-centered approach to studying information phenomena, "making sense" is defined as ascribing meaning (Dervin, 2017). Even though meaning is conceptually central to both Kuhlthau's and Dervin's work, neither seems to define the term explicitly. Analyzing how these authors use the term "meaning" in situ, Budd (2011) finds that both adopt an individualized conceptualization of meaning, in which meaning is constructed by a person for their own purposes.

In this chapter, I will build on this prior work by theorizing meaning explicitly. As we will see, there have been some conceptualizations of meaning in the philosophy of information as well as some corners of information studies, but these are not widely known and have not yet been connected to work in information behavior. Along the way, we will discuss the relationship between meaning and information as well as the concept of relevance. For the research area of information experience, a particular kind of meaning is paramount to consider: personal meaning, which is discussed in the final section.

9.2 WHAT DOES "MEANING" MEAN?

As one might expect, there have been numerous theories of meaning debated in philosophy. By and large, however, these theories have focused on meaning in language only (Speaks, 2019). Of course, understanding how words mean anything is a thorny prospect. But the concept of meaning is simply not exhausted in language. When we're driving, for example, a red light means something, and a green light means something else. We can discern meaning from a silent movie and even a piece of instrumental music. We speak of meaningful experiences and meaningful relationships – even the meaning of life itself. These phenomena do not have meaning by way of language; the meaning arises through some other route. Though stoplights, music, and experiences are not linguistic, they may be construed as information. And so we might attempt to ground meaning in information rather than language. An advantage of working in terms of information is that information is in a sense more fundamental than language; language is informational.

In his philosophy of information, Floridi is the rare scholar of information who defines information in terms of meaning and also develops a theory of meaning. As he writes, in general, primitive accounts of meaning assume direct correspondence between a symbol and its referent. To use Wittgenstein's famous example, the word "slab" is taken to directly correspond to a large, flat, sturdy hunk of material. But as Wittgenstein (1953, pp. 11–13) shows, the meaning of "slab" depends on the context; when one builder shouts "Slab!" to another, the word has the meaning of the other builder bringing over a hunk of material. Refining Wittgenstein's work and connecting it to information, Floridi (2011a) defines meaning as coordinated action toward goals. In this sense, the meaning of something is the way it affords and constrains activity. Recall that with Floridi's method of levels of abstraction (see Section 6.2), the scope of interest may be defined such that "action" and "activity" may be more or less observable (consider the action of a neuron firing compared to the action of a car stopping at a red light). In line with the notion of information-as-process (Buckland, 1991),

we can see meaning as constitutive of the process of becoming informed – not just some standalone "definition."

The handful of other accounts of meaning that have been developed within information studies also seem compatible with Floridi's action-based conception of meaning. Langlois (1982), for example, drawing from systems theory and economics, argues that "the meaning of a signal is the response it elicits" (p. 396). Likewise, Neuman (2006) defines meaning as "the system's specific response to a signal" (p. 1438), and Thornley and Gibb (2009) emphasize the processual and contextual contingency of meaning in the information retrieval context. In the field of HCI, Dourish (2001) includes a consonant conceptualization of meaning for design drawn from phenomenology, wherein meaning is uncovered in the world through interactions.

Two notes can be made here. First, as implied above, meaning is inextricable from its context. "Cup" may mean one thing when you're thirsty, another when you're preparing cake batter, and yet another when you're playing football (Wilson, 1960). Second, and relatedly, this definition of meaning entails that meaning is a property of a system, not of any particular part of a system. That is, it's not that the slab or the cup has a given meaning in itself always and forever; rather, because its meaning is context-dependent, the meaning is also a property of the system which the context constitutes.

This latter observation was a point that seems to have been first made by Jakob Johann von Uexküll (1864–1944), a scholar of animal behavior and pioneer of systems theory. In his *A Foray into the Worlds of Animals and Humans*, published in German in 1934 and only recently translated into English (von Uexküll, 2010), he developed a system-based theory of meaning. An oak tree canopy, for example, works together with the rain to distribute water to its roots; capturing and distributing water is the meaning of the oak–rain circuit, and to speak of meaning without taking into account this system is insufficient.

In information studies, we are most interested in information phenomena when human beings are involved. As such, we would do well to reflect on what meaning means when a human joins the oak tree, so to speak. For this purpose, Floridi's (2011a) account of meaning (as coordinated action) may seem overly sparse. This is because it is meant to be an evolutionary theory of meaning, applying to one-celled organisms just as well as to humans. Floridi's description of meaning in terms of affordances and constraints invites us to reflect on Gibson's theory of affordances developed in ecological psychology: Affordances are perceived possibilities within a situation, and so meaning is the way action unfolds through these perceptions (Gibson, 1986).

Following Gibson's legacy, we can find recent thinkers who connect this work to theories of meaning compatible with that being discussed here. Philosopher Mark Johnson, for example, draws on work in cognitive neuroscience (e.g., Antonio Damasio) and the philosophical tradition of pragmatism (e.g., John Dewey). In *The Meaning of the Body*, Johnson (2007) explicitly discusses how meaning manifests as a difference in human experience (which is action in a sense, though perhaps not outwardly observable). As Johnson defines it, human meaning is the way in which patterns of neural activity and their relations "evoke

feeling-thinking responses in us" (Johnson, 2007, p. 243). And though human meaning has its roots in neural activity, more complex meanings arise through embodied action, thinking, social interaction, etc., over time (Damasio, 2018; Floridi, 2011a). Another way to describe meaning in this sense is something's *mattering*, i.e., having an effect (Martela, 2017).

Thus far, we have been discussing what Dourish (2001) calls the ontological aspect of meaning; that is, the structure of meaning and its shape in the world. When it comes to humans, and when it comes to making discussions of meaning useful to designers, Dourish suggests that two other aspects of meaning are also important to consider: intersubjectivity and intentionality. Intersubjectivity explores, for example, how two humans can relate to each other. For us, our meanings are not always private; often, they are shared. Back to Wittgenstein's example of the slab, the meaning of "slab" arises intersubjectively. This is compatible with the system view of meaning, as multiple people can form one system. But when we attend to the human element, we can see how, for instance, rhetoric is a constitutive part of meaning in human communication (Booth, 2004) – how something is said is often more important than what is said. Intentionality is the way that our attention is always directed, and thus that the contents of our consciousness include only part of the phenomena in our environment. This fits with Gibson's theory of affordances; affordances are not objective features of a system, only those that a particular organism perceives at a given time. Relatedly, only some features of the environment will be affordances and thus generate meaning. If we are standing in the street when a car is coming, it means we should get out of the way – the fact of the car is important, and perhaps its speed, but in this situation we don't derive meaning from the car's color, license plate number, etc.

9.3 MAKING MEANING FROM INFORMATION

When it comes to interactions with information or technology, we often talk about meaning-making or sense-making. In information behavior, for example, Kuhlthau (2004) writes of seeking meaning rather than just information, and Dervin (2003) formulated the Sense-Making Methodology that has been widely used in communication and information behavior research. In HCI, the so-called "third-paradigm" work in the field "sees meaning and meaning construction as a central focus" (Harrison, Sengers, & Tatar, 2011, p. 388). This warrants consideration.

On some definitions of information, to speak of meaning-making may be circular or nonsensical, as information already by definition entails meaning. Floridi (2011a), for example, defines information as well-formed, meaningful, and true data.[1] To cite another example, Bates (2005a) offers two definitions of

[1]Perhaps confusingly, Floridi (2011a) distinguishes between semantic information and nonsemantic information (that is, meaningful information and otherwise), but he generally uses the term "information" as a shorthand for semantic information, only clarifying where more precision is necessary.

information, one prior to a living being's giving it meaning (Information 1) and one after (Information 2). To be sure, whether meaning is necessary for the concept of information is the subject of some debate. Perhaps necessarily so, it seems to come down to the polysemy of the word "information" – that is, it can refer to something syntactic on one hand or semantic on the other. Making meaning, then, is a matter of going from the syntactic level of information to the semantic one. For Floridi (2011a), this is the move from data to information or perhaps more precisely the move from nonsemantic information to semantic information. For Bates (2005a), meaning-making is the move from Information 1 to Information 2.

So when we speak of making meaning from information, we are pointing to the "action" dimension of information – how information moves us and how we move with information. By surfacing meaning as a standalone concept in information experience, we are looking at the ways in which we do things with information. By referring to "making," we emphasize the active and agential aspects of meaning. Sometimes, to be sure, meaning seems to arise automatically (at the level of human experience, if not at that of neurons), but sometimes the person in question plays a role in bringing that meaning about. That is, for humans meaning is a matter of interpretation, and interpretation can be a protracted and laborious – above all active – process.

In practical terms, when we speak of meaning-making, we are usually talking about more than just the meaningfulness of a single proposition. In human experiences with information, we are generally not just dealing with "information" but actually with documents. Documents are bundles of information, spanning human and object (Gorichanaz & Latham, 2016). That is, the object supplies some information (e.g., the print in a book), and the person supplies some as well (e.g., state of mind); and though in everyday parlance we often equate the object with "document," in reality the information the person supplies plays a role in their experience with the object (and what they learn from it and what they may do next), and thus we are better off considering a document to be a kind of information experience rather than simply a thing. The meaning of a document, then, is at the simplest an amalgamation, but could be outright multifarious. In the next section, we will consider a particularly complex kind of meaning, nonpareil for our interests in information experience: personal meaning.

But first, it is worth pausing to reflect on the concept of relevance, so central to information studies (Nolin, 2009), as it bears on the discussion at hand. According to traditional theories, relevance is a matter of the topicality of a document as discerned from either the user's perspective or the system's perspective, stemming from an a priori dichotomy between the user and system (Hjørland, 2010). Moreover, we tend to assume that a document is either relevant or not relevant, ignoring the shades of meaning that may make something relevant or not (Taylor, Zhang, & Amadio, 2009). The observation that any given document is an amalgamation of information, any piece of which might be more or less relevant, gives further credence to criticisms of the received view.

Relevance is best understood not just in terms of some information's being "on topic," but in connection with meaning and therefore action (as I am defining "meaning" here). In *Public Knowledge, Private Ignorance*, Wilson (1977) observed such a connection. Information seeking, he wrote, is driven by personal concerns and interests; a concern is a person's "readiness to act, to exert control or influence" (p. 42), while an interest entails no intention (or perhaps possibility) of action. When it comes to concerns, information is relevant if it brings a person closer to, or helps them bring about, successful action. Consonantly, Kuhlthau (2004, p. 4) suggested incorporating notions of meaning and understanding with our ideas of relevance.

Contemporary notions of relevance have begun to do this. Work by Art Taylor shows empirically a spectrum of relevance criteria that people use in seeking information, such as affectiveness, authority, bias, history, novelty, and source (Taylor, 2012; Taylor et al., 2009). Hjørland connects relevance with information needs and tasks – not only the overt or expressed need but also the person's epistemological framework from which that need emerges (Hjørland, 1997). And so for Hjørland, "a document or a piece of information is either relevant or is not relevant to a given task relative to goals, values and interests" (Hjørland, 2010, p. 232). Separately, Arafat and Ashoori (2019, pp. 272–274) similarly suggest that relevance should not be considered just the relationship between a person's query and a document, but rather a function of a broader consideration of lived experience.

Even though dealing with an agent's epistemological status and goals may seem subjective, Wilson reminds us that, given the connection between relevance and action,

> …what information is relevant to a particular concern is a public, not a private, matter, with public standards of criticism. If I know your concerns, I have a basis for recognizing not merely what you are likely to want to know, but what you ought to know. (Wilson, 1977, p. 44)

I would contend that research in information experience can further the agenda of information retrieval through the concept of relevance; research on people's experience can bring to the surface their epistemological frameworks and draw the connection between information and action by way of investigating meaning.

9.4 INFORMATION AND PERSONAL MEANING

So far we have been discussing how meaning arises from interactions with information or technological artifacts. But other people – and even oneself – can be interacted with and conceptualized in terms of information, and so meaning can be made from and attributed to other human beings. This is personal meaning.

Like most animals, we humans seek out pleasure and try to avoid pain (Parfit, 1984). But this is not all we do; humans also seek out and have a need to experience, personal meaning (Baumeister, 1991, 2005; Steger, 2009; Wolf, 1997).

As Baumeister (2005) writes, humans are cultural animals; we seek happiness, which depends on meaning – this goes beyond the momentary and automatic nervous system responses that characterize most animals' being (Baumeister, 2005, p. 88). Baumeister (2005) describes the nature of human life as the seeking of control (in the form of money, power, possessions, and territory), belongingness, sex, helpfulness, and other aims – but above all, we seek meaningfulness. The need for meaning, he says, is fundamentally human. So while information studies is beginning to consider information from nonhuman perspectives in a possible "animal turn" (Hartel, 2019), the substance of our concerns, in light of meaning, is centrally human.

The question of personal meaning has a significant lineage in philosophy, literature, and religion. Most recently, it has been studied in psychology, constituting a major thread of what is now known as positive psychology. There has not been much discussion of personal meaning in information studies, though in HCI specifically most discussions of meaning-making seem to imply personal meaning, as reviewed by Mekler and Hornbæk (2019). It bears mentioning that in the tech industry, too, talk of "meaningful experiences" has proliferated in the past decade, and such experiences too seem to point to personal meaning.

So what is personal meaning, exactly? People sometimes talk about the "meaning of life," by which roughly two things can be meant: the meaning of biological life in general and the meaning of one person's life in particular. Personal meaning is the latter. Other philosophers and psychologists may also refer to this as "meaning in life" (George & Park, 2016; Martela & Steger, 2016) or simply (albeit confusingly) "meaning" (Landau, 2017; Smith, 2017; Wolf, 1997).

To begin, personal meaning is the sort of meaning that contributes to one's being a person. As discussed above, meaning can be defined as coordinated action within an environment; and when it comes to human experience, meaning is the way patterns of neural activity "evoke feeling-thinking responses in us" (Johnson, 2007, p. 243) as we live in our environments.

Person, in turn, refers to

> …a human being as a social and psychological being, as a human organism having a sense of its place among others of its kind, a sense of its own history and beliefs about at least some of its attributes. (Harré, 1998, p. 73)

Importantly, a person is not simply a biochemical entity – what makes a person *a person* is not simply their existing as a bundle of cells. Rather, persons are self-conscious beings – those for whom their own existence can be called into question (Heidegger, 2010). Following existentialist perspectives, personhood is characterized by projects, for example, quests for authentic being and life meaning (Kaptelinin, 2018).

Persons are both multiplicities and singularities, with each person comprising a single perceptual point of view and multiple personal and social attributes which change over time (Harré, 1998; Wright, 2016). The term *attributes* here is defined as "capacities to cause effects or susceptibilities to be affected"; attributes are relations (Wright, 2016, p. 55); or on an informational ontology, we might

think of them as pieces of information. Examples of attributes in persons include height and hair color, hobbies, linguistic abilities, favorite books, feelings toward particular family members, etc. – the concept spans the physical, psychological, and social. In addition to the present, attributes of an entity also include both past (no longer) and future (possible and potential) states. Attributes can be more or less tightly bound to each other (Wright, 2016). For example, a cat's (1) having long hair and (2) being fluffy are tightly bound attributes, while its (3) being gray and (4) sleeping a lot are not. Persons, as self-conscious entities that relate to our own relating (Heidegger, 2010; Kierkegaard, 1989), are very tightly bound bundles of attributes, and on some philosophical accounts, the more tightly bound one's attributes are, the *more of a person* one actually is (Wright, 2016).

Personal meaning, then, is how humans act to make their attributes more tightly bound. This can be expressed, for example, as the deep self-understanding that results from engaging with informational and technological self-care (see Chapter 8) – as these lead to new attributes that further bind one's existing attributes. Personal meaning is what makes one's life feel worth living (Landau, 2017; Wolf, 1997), which reveals the significance of Socrates' claim that "the unexamined life is not worth living" (Plato, 2002, p. 41).[2] Importantly, though, personal meaning is not an all-or-nothing category; rather, it comes in degrees (Landau, 2017).

Clearly, personal meaning is a multifarious concept, and several frameworks have been proposed for describing its components (George & Park, 2016; Martela & Steger, 2016; Mekler & Hornbæk, 2019; Steger, 2009). A recent one, by Mekler and Hornbæk (2019), developed in HCI based on a wide review of the literature in that field as well as psychology shows that personal meaning has the following five components:

(1) Connection: One's sense of belonging, feeling that their self and present experiences are connected to other experiences, people, objects, goals, memories, etc.
(2) Purpose: One's aims and goals in life
(3) Coherence: One's comprehension and sense made of life
(4) Resonance: One's immediate and intuitive sense that an experience feels right
(5) Significance: One's sense that life is worth living and has transcendent value

As a final note, personal meaning contributes to human flourishing even beyond the individual level – though discussions often mention only its individual aspects (Mekler & Hornbæk, 2019). As Stuart Walker writes, personal meaning encapsulates all those values that collectively "encompass our ways of acting in the world, ethical behaviors related to our social interactions and

[2]Even so, some scholars separate worthwhileness and meaning, seeing worthwhileness as an umbrella that includes meaning as well as happiness, virtue, and other attributes (Martela, 2017).

personal inner development" (Walker, 2011, p. 187). Personal meaning is thus related to broader concerns. For Walker, personal meaning contributes to social responsibility, environmental care, and economic issues – in a word, personal meaning is linked to *sustainability*. Indeed, Walker proposes that personal meaning should be considered a "fourth bottom line" of sustainability (the other three being social, environmental, and economic factors): "sustainability has to be relevant and meaningful to the individual person, as well as socially responsible" (Walker, 2011, p. 127). Light, Powell, and Shklovski (2017) take this even further, articulating how designing for meaning and sustainability fits within a rubric of designing amidst the myriad existential crises we are facing, including climate change, political issues, and threats of war. So if the prospect of focusing on personal meaning might seem solipsistic to some, here is revealed its wider value.

9.5 CONCLUSION

In this chapter, we have examined theories of meaning in information studies and considered some ramifications for information experience. Meaning has been defined as the way action is afforded and constrained within a particular context. This could describe the meaning of words, for example, which is borne out in how they relate to lived situations (e.g., what a person does next upon hearing an utterance); but it could just as easily describe the meaning of any sort of information. The picture becomes more complex when considering amalgamations of information, such as documents: the meaning of a book or even a short article likely cannot be captured in a simple phrase.

More complex still is personal meaning, the sort of meaning that contributes to one's being a person – more precisely, the meaning that contributes to one's being the person that one is. A lack of personal meaning is becoming a critical social issue in many societies today. As humans, we have a need to experience personal meaning, and yet it seems that meaning is becoming harder for people to develop, as we will see in the next chapter. For now, we can relate the discussion back to the practice of information professionals such as libraries.

In his recent book *Palaces for the People*, sociologist Eric Klinenberg has popularized the notion that libraries offer not only facts and novels but also social infrastructure: shared spaces for people of different political persuasions, air conditioning on hot days, community programs for building and expressing values, all of which contribute more generally to a community's resilience in tough times (Klinenberg, 2018). To be sure, those of us in information studies have long known this – perhaps even taken it for granted. And yet research and theory in information behavior has, with few exceptions, limited itself to considering "information" in terms of facts and figures. Rightly, this state of affairs has raised questions such as, "Why do we need libraries when we have Google?"

In answer, a few authors in our field have described the library as a purveyor of meaning rather than information. Nearly 40 years ago, Richard Langlois

sketched a theory of meaning for information studies, as mentioned above. In an early gesture away from information and toward meaning, he wrote

> The value to the [library] of the symbols it stores derives ultimately from the meaning (and, withal, the value) those symbols hold for the users. And the objective is to provide the most value, which is not necessarily the most 'information' in the nonsemantic sense, at the least cost. (Langlois, 1982, p. 399)

In other words, cramming more books into the catalog and offering access to more resources is not necessarily how to make libraries more valuable to the public. Similarly, Verdesca (2010) suggests that traditional reference services provided users with meaning, but in the digital age they only provide access. For Verdesca, it is the human interaction and the wholeness of the text that work together to offer meaning. Verdesca wonders whether the shift toward digital resources has privileged speed and quantity but missed out on the meaning libraries used to offer; as a step forward, he suggests attending to user experience in reference interactions. And finally, directly responding to the exigencies of the digital age, Weinberger (2016) offers a number of ways in which libraries already are and can more fully become centers of meaning for their communities. These themes will characterize the next few chapters of the book.

Chapter 10

THE GOOD LIFE

ABSTRACT

From the perspective of information ethics, one of the purposes of human life is flourishing. This means people ought to be free to engage in creative and flexible actions that allow the fullest realization of their potential as intelligent, decision-making agents – i.e., those actions that a person experiences as meaningful. Researchers have suggested that many people in the post-industrial West experience a lack of meaning in their lives, and this "crisis of meaning" is implicated in many of society's ills; consequently many people are not flourishing as they might. Flourishing relies on information access, processing, and understanding, as well as a particular meaningful experiential dimension of information activities. To speak of information experience, personally meaningful activities are experienced as self-constructive ones, characterized by focused curiosity and presence, and which have a central practice that is supported by peripheral practices. Examples of personally meaningful information behavior from the serious leisure hobby of ultramarathon running are discussed as illustration. In reaching for a more ethical information society, we should seek to infuse more of our information activities with deeper personal meaning.

Keywords: Justice; flourishing; crisis of meaning; ultrarunning; good society; purpose; leisure

10.1 INTRODUCTION

Today's world has been shaped by digital technologies and their capacity to store, transport, and process data. Observing the dynamics of globalization, some have called this a global information society. Whether we really live in a global society (and what that means in the first place) and whether the notion of "information society" best captures what is new about our epoch are, of course, subject to debate (Webster, 2006).

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However we gloss it, we can agree that something about today has changed the way humans, at least in post-industrial societies, live. Floridi (2013) has offered a number of concepts in this connection. He writes of re-ontologization: information technology changes what exists, what we know, and what is possible; it redesigns reality. He also writes of hyperhistory: whereas the historical era was that in which humans recorded events and facts for transmission to other humans, in the hyperhistorical era most of our information is read by machines rather than people.

In such a world, how should we be and act to live the best lives we can? What does it mean to live a good life? What does a good society look like? Is there a guiding moral principle or set of principles that we might abide by? We might be inclined to say no, given the differing cultural and legal milieux that are to be found around the earth, which are incompatible in many ways. But in an interconnected world, at least some convergences are desirable – perhaps even inevitable, depending on one's stance toward moral realism.

An interesting case is the development of the Universal Declaration of Human Rights (UDHR), which was ratified by the United Nations in 1948. Jacques Maritain, one of the writers of the declaration, recounted,

> Someone expressed astonishment that certain champions of violently opposed ideologies had agreed on a list of rights. 'Yes', they said, 'we agree about the rights but on condition that no one asks us why.' That 'why' is where the argument begins. (Maritain, 1949, p. 9)

The UDHR has lasted over 70 years now, and it stands as the most universally accepted basis that we have for articulating shared human moral values. It includes and defines such concepts as dignity, liberty, and equality; it speaks to rights of individuals and communities; and it outlines how these rights may be ensured. Of course, today's world is much different than that immediately following World War II. To consider how the UDHR fits with and may be extended within the global information society (by whatever name), the United Nations convened the World Summit on the Information Society in 2003 and 2005, with a follow-up meeting in 2015. Outcomes from these efforts include vision statements, declarations of principles, and the like.

Questions of fundamental values have permeated discussions of the good life and the good society alike. Responding to UDHR, WSIS, and millennia of philosophical discourse, scholars seem to be converging on justice as the intrinsic and foundational such value (Brey, 2018; Britz, 2008). To be sure, justice is not a new topic in ethics, and it is certainly not unique to the information society. Justice indeed is the topic of our oldest ethical treatises; for instance, it is the central question in Plato's *Republic*, authored around 375 BC, as well as in the Mahabharata, the ancient Sanskrit epic, which originated around the same time. In a discussion of justice specific to the global information society, Britz (2008) outlines three core principles of justice:

(1) All people must be judged according to the same standards and treated equitably.
(2) Each person should get their due.
(3) Unequal treatment can be justified where people are differentiated based on accepted, universal criteria (e.g., it is not an injustice that I am not an NBA player), but only so long as the information-poor and other marginalized people are not disadvantaged.

Beyond identifying these principles, Britz also discusses seven categories of justice: as recognition of others' humanity; as enablement of others' self-development and self-determination; as reciprocity across social relations; as participation of all throughout society; as distribution of benefits and burdens; as contribution of efforts; and as retribution for immoral behavior.

Information experience can be considered and discussed in terms of how people experience justice and injustice in the information society. In this chapter, I will explore the second category that Britz names, that of self-development and self-determination, particularly as it relates to personal meaning. This sense of justice was also championed by Norbert Wiener in *The Human Use of Human Beings*, where he proposed his "great principles of justice" (Wiener, 1954). For Wiener, human beings must, in order to flourish, be in charge of their own lives and be free to do those activities that engage them creatively and intellectually. This, indeed, is the very purpose of human life in Wiener's estimation, and because different people will pursue different activities, what results is a tapestry of human diversity. In other words, part and parcel to justice is the ability of individuals to pursue that which they find personally meaningful. This is the central focus of this chapter.

As an aside, it is worth mentioning the question of nonhuman justice. As described above, conceptualizations of justice and rights in general have been concerned only with human beings. To be sure, who counted as human in these discussions has shifted over time; in the arc of Western history, human rights have gradually been extended to non-Athenians, non-Greeks, non-Christians, non-Europeans, women, and so on. Since about 1970, the question of animal rights has become increasingly salient in public discourse and more recently that of the rights of rivers, mountains, and other natural features (Day, 2019). This phenomenon has been called the expanding circle of moral concern (Singer, 1981). Theorizing this expansion in informational terms, Floridi (2013) proposes that all information objects and organisms – from rocks and hard disks to human beings and algorithms – have moral worth simply by virtue of their information. For Floridi, moral worth is roughly a function of complexity (the amount of semantic information), and hence a human being is more morally concerning than any old rock; but even the rock is not worthless. What this means for the discussion at hand is that all information objects and organisms are morally bound by the entitlements and obligations of justice.

In this chapter, I will frame the issue of personal meaning as a crisis in Western society today, bound up with issues of mental health as well as our informational climate. As this is a societal problem, I argue that information professionals, such as librarians, have a duty to ameliorate it – i.e., to help people find meaning in their lives. To offer conceptual grounding to that task, I present a framework of informational flourishing as well as four themes that characterize personally meaningful information experiences. I use the serious leisure hobby of ultra-marathon running as an example. With this conceptual understanding in place, we can move toward the question of cultivating meaning, which will be explored in the next chapter.

10.2 A CRISIS OF MEANING

In the United States, as in other post-industrial Western nations, mental health issues such as anxiety and depression are becoming increasingly alarming, along with suicide, the tragic outcome of some such cases. According to the National Institute of Mental Health, anxiety disorders affect around 19% of US adults, yet only 37% of these receive treatment. To speak of depression specifically, over 7% of US adults experienced at least one major depressive episode in 2017 (National Institute of Mental Health, 2017). The suicide rate in the United States has been following a steady upward trend at least since 1999 (Stone et al., 2018); currently, about 13 of every 100,000 individuals, most of them suffering from depression, in the United States die from suicide, making it the 10th leading cause of death in America (Murphy, Xu, Kochanek, Curtin, & Arias, 2017). These statistics represent a trend seen in other nations, but the United States is unique among post-industrial Western countries in that the life expectancy of its citizens has been declining for the past few years. In large part this has been attributed to the ongoing opioid crisis (Solly, 2018). It is worth noting, however, that the opioid crisis is not isolated from the issues of depression and suicide (Martins et al., 2012).

Depression is little understood by the general public. Clinically, depression is a feeling of discouragement, hopelessness, demotivation, or disinterest, distinguished from simply "feeling down" in its extendedness (lasting at least 2 weeks) or severity (interfering with daily activities) (National Institute of Mental Health, 2017). Some of the misunderstanding around depression stems from the difficulty nondepressed people have in understanding depression. To this end, the writings of David Foster Wallace on the depression experience are eminently valuable – a famed author, Wallace himself suffered from depression for much of his life and died from suicide in 2008. In a passage in *Infinite Jest*, Wallace describes depression as the evaporation of meaning:

> Terms the undepressed toss around and take for granted as full and fleshy – happiness, joie de vivre, preference, love – are stripped to their skeletons and reduced to abstract ideas. They have, as it were, denotation but not connotation. The anhedonic can still speak about happiness and meaning et al., but she has become incapable of feeling anything in them, of understanding anything about them, of hoping anything about them, or of believing them to exist as anything more than concepts. Everything becomes an outline of the thing. Objects become schemata. The world becomes a map of the world. An anhedonic can navigate, but has no location. (Wallace, 1996, p. 693)

As mentioned, little more than one-third of those suffering depression and other anxiety disorders receive treatment. Part of the reason for this is the stigmatization of depression, stemming from its misunderstanding. Depression is, for instance, often seen as a personal weakness. Even medical accounts which characterize depression as a chemical imbalance may be incomplete, as depression may have an evolutionary basis (Rottenberg, 2014). With another view, Ann Cvetkovich sees depression as a symptom of politics – an affliction brought on by the nature of modern society. In this characterization, Cvetkovich seeks to expose "the ambivalent status of the quest for middle-class respectability that is so

frequently the cause of depression or sadness for white people as well as people of color" (Cvetkovich, 2012, p. 122). While Wallace (1996, 1998) described his experiences with depression through fiction, Cvetkovich explicitly weaves her analysis with memoir. In her book, she reveals that she no longer considers herself depressed; along with swimming, yoga, and nurturing her social life, Cvetkovich credits the improvement of her condition with her finding a creative outlet in knitting.

Both Wallace and Cvetkovich draw a connection between depression and meaning. Indeed, recent research suggests that a lack of personal meaning is a key factor in depression and suicide (Oishi & Diener, 2014). Indeed, some have suggested that we are currently in a "crisis of meaning," as an inordinate number of people lack a sense of personal meaning and thus find their lives to be unsatisfactory (Landau, 2017; Smith, 2017; Storr, 2018).

Technology, and social media in particular, is sometimes implicated in this crisis. One reason for this may be the way social media is conducive to perfectionist thinking. Perfectionism is a personality trait typified by a person's pursuit of – perhaps obsession with – the rare, difficult, and flawless. On social media, people are pressured to appear successful, beautiful, adventurous, etc., and, seeing such content in endless streams, people experience dissonance and dissatisfaction when their own lives do not seem to be as good as other people's (Curran & Hill, 2019; Hellman, 2016; Saunders & Eaton, 2018). While some psychologists have pointed out that perfectionism may be adaptive in that it motivates a person to set and achieve goals (Hamachek, 1978), many argue that the negative aspects outweigh the positive (Flett & Hewitt, 2002). In particular, recent literature has focused on how perfectionism can lead a person to conclude that any flaws in their achievements or in themselves make their life meaningless (Landau, 2017; Smith, 2017; Storr, 2018).

Speaking to the crisis of meaning more generally, others have discussed how people today, beset by information overload and enthralled by on-demand culture, feel distracted and unable to engage deeply with the world (Lanier, 2018; Pentina & Tarafdar, 2014) – more in the passenger's seat than the driver's seat of their lives. Recent analyses suggest that time spent on technology is a major cause of depression, self-harm, and suicide attempts, particularly among adolescents (Twenge, 2020). Demonstrating this, one experiment limited undergraduates' use of social media to 30 minutes per day, showing significant reductions in loneliness and depression after a 3-week period compared to the control group (Hunt, Young, Marx, & Lipson, 2018).

Personal meaning is just one aspect of well-being; a larger body of literature looks at the interaction between technology (again, mostly focused on social media) and psychological well-being more broadly. A review of the empirical literature on social networking sites and psychological well-being shows that, while studies reporting on such negative effects constitute a minority of the literature, such findings have been validated (Erfani & Abedin, 2018). To give one example, Verduyn et al. (2015) suggest that some social media platforms afford a sort of browsing that undermines well-being.

A struggle though it can be finding meaning in one's life has been associated with positive well-being (Zika & Chamberlain, 1992). More recent psychological research has, moreover, supported the hypothesis that life meaning indeed leads to positive well-being (García-Alandete, 2015). This view motivates the search for ways to facilitate the cultivation of meaning. Fortunately, some work has been done to this end, primarily in psychology and philosophy. In the rest of this chapter and in the coming chapters, I will discuss how information – building on that prior psychological and philosophical work – can be a force for cultivating meaning and consequently for helping other people do so.

10.3 IS IT OUR PROBLEM?

At first blush, it may seem that information studies has little business offering solutions to those suffering depression. Such a notion, however, stems from an overly limited conceptualization of information and consequently of the role of information professionals. Librarians offer a clear example. Indeed, just as our understanding of information has begun to open up in recent years, so have the duties of librarians. For instance, librarians are increasingly being faced with challenges previously ascribed to social workers (Townes, 2015). Particularly in urban settings, librarians routinely offer services far beyond what the term "information provision" traditionally captured; in Philadelphia and other cities, for instance, librarians have been administering naloxone to victims of opioid overdose (Freudenberger, 2019). The basis for such activities is articulated in the policy manual of the American Library Association (ALA), which intends to articulate the role of librarians in the United States:

> The broad social responsibilities of the American Library Association are defined in terms of the contribution that librarianship can make in ameliorating or solving the critical problems of society; support for efforts to help inform and educate the people of the United States on these problems and to encourage them to examine the many views on and the facts regarding each problem. (American Library Association, 2019, p. 7)

In their policy manual, the ALA further describes this social responsibility in terms of encouraging lifelong learning by offering accessible, diverse resources, and services for all. Just like information, learning need not be merely cognitive; learning can address emotional concerns. In the same way, diverse resources should address as many aspects of human need as possible – recalling the Jesuit maxim *cura personalis*, "care for the whole person" – especially those pertaining to such a widespread social issue as depression and other mental health issues. As described above, the majority of those suffering depression do not seek help from the medical world and thus live undiagnosed, which presents an opportunity for the library to help.

Fortunately, empirical research and decades of clinical practice demonstrate that it is possible for people to cultivate personal meaning, and this has been shown to lead to positive well-being (García-Alandete, 2015) and alleviate depression (Reker & Wong, 1988). What's more cultivating personal meaning is beneficial to all people, not just those suffering ailments, given that personal

meaning is a basic human need. And given that information technology plays a central role in contemporary life and has been implicated in the etiolation of meaning therefrom, it seems clear that information researchers, professionals, and designers have an opportunity – if not an obligation – to help others discover and build personal meaning in their lives. As we have seen, this need is connected to the overarching value of justice and the prospect of the good life. Understanding how to go about doing that will take some groundwork.

10.4 FLOURISHING WITH INFORMATION

For the Ancient Greeks, the good life was characterized as *eudaimonia* (εὐδαιμονία). In the past, this was most commonly rendered in English as "happiness." This is, for example, the notion behind the "pursuit of happiness" named as a private right and public duty by the framers of the US Declaration of Independence in 1776 (Conklin, 2015). But the connotations of words shift over time, and today scholars tend to use "flourishing" as a more precise translation. Broadly, a eudaimonic life is a life lived in pursuit of and accordance with virtue, but not without good health, some beauty, and enough wealth – an idea expressed in the proverbial "healthy, wealthy, and wise," famously printed in Benjamin Franklin's *Poor Richard's Almanack*.

Assuming that we want to live the good life, we might say that for humans the purpose of life is to flourish. How might we understand this in terms of information? Floridi describes both information and goodness with reference to metaphysical entropy. Briefly, entropy is associated with evil, while its opposite (negentropy or complexity) is associated with the good. Floridi writes:

> Both in thermodynamics and information theory, entropy is a syntactic and quantitative concept: neither information nor entropy refers to the actual meaning, content, interpretation (semantics), or to the existence and nature (ontology) of the system. … We are concerned with the semantic and ontological nature of information. For example, as the infosphere becomes increasingly meaningful and rich in content, the amount of information increases and (what one may call, for the sake of clarity) metaphysical entropy decreases; or as entities wear out and finally disappear, metaphysical entropy increases and the amount of information decreases. (Floridi, 2013, pp. 66–67)

In information experience, just like Floridi's information ethics, we can interpret entropy not in the engineering sense of a measure of syntactic properties, but rather in terms of meaningfulness. For this, Floridi uses the term "metaphysical entropy." He goes on to say,

> Metaphysical entropy refers to any kind of *destruction* or *corruption* of entities understood as information objects (mind, not just of semantic information, or messages), that is, any form of impoverishment of *being*. (Floridi, 2013, p. 67)

Here Floridi admits a broad definition of information, defining the infosphere as the ontological layer that includes relations between humans and all sorts of technologies and modes of action and change, from books and articles to works of art and deep experiences.

The flip side of entropy is termed exentropy, negentropy, or complexity. When we think of metaphysical complexity, to adopt Floridi's use of the term "metaphysical" here, we are pointing to an increase in meaningful information – not just an increase in bits, but of the kind of information that fruitfully guides or forms a person. Floridi's position here, which I also adopt, is further supported by theorists in evolutionary psychology. Tooby, Cosmides, and Barrett (2003) contend that the purpose of life is reducing metaphysical entropy, saying that "the second law of thermodynamics is the first law of psychology." Also, Bawden (2007) has previously worked to connect the syntactic and semantic notions of information; he proposes the notion of "organized complexity" – and here "organized" seems to do the same work that Floridi intends with "metaphysical."

As mentioned in the introduction, Floridi (2013) proposes that all information objects and organisms have moral worth simply by virtue of their information. For Floridi, moral worth is roughly a function of complexity (the amount of information), and hence a human being is more morally concerning than any old rock; but even the rock is not worthless. What this means for the discussion at hand is that all information objects and organisms are morally bound by the entitlements and obligations of justice. Another way of putting this is that all members of the ontic trust are responsible to help each other flourish – to grow in terms of metaphysical complexity. Some people carry this out by devoting their lives to polishing rocks – and we shouldn't consider this a waste of one's life, so long as there are other people in the society doing other things. In the case of information professionals, what we polish for the most part is other minds, and doing that involves curating information objects of many kinds.

Human flourishing relies, first of all, on information access, processing, and understanding. Thus we can understand barriers to access, processing and understanding as barriers to flourishing. Throughout its history, information studies has focused on removing barriers to access; but today's issues of information overload and misinformation demonstrate that attention to processing and understanding are also sorely needed. Research on these questions as they intersect with information experience has only just begun. Smeaton, Bruce, Hughes, and Davis (2017), for instance, report on a pilot study of the information experiences of the disadvantaged; the study involved two single mothers who had intermittent internet access via prepaid data plans on their smartphones. These mothers experienced the internet as endless (there's no limit to what can be found there) and essential (one can't live without it today), yet also inadequate (getting important things done can be difficult) and uncontrolled (anyone can find or publish anything, raising issues about, e.g., real vs fake). Smeaton et al. (2017) demonstrate that, first, information access needs to be understood as multidimensional, including technological, financial, temporal, cognitive, and perhaps other aspects. But they conclude that access is not enough; the socioeconomically disadvantaged also may need help processing and understanding information.

More deeply, flourishing relies on personally meaningful experiences. That is, a person must experience some aspects of their life as personally meaningful, whether or not someone else would find meaning in those same things. In my research, I have begun to uncover some of the characteristics of personally

meaningful experiences with information (Gorichanaz, 2019a). I examined people's experiences doing three types of personally meaningful activities: reading the Bible, running an ultramarathon, and creating a self-portrait. There were four common themes that characterized these experiences:

(1) Self-construction: The activities were experienced as part of the person's self, inextricable from whom the person is.
(2) Centripetal force: The experiences involved a central practice along with a number of peripheral activities that supported or enhanced it. These peripheral activities may have been unrelated to the central practice at first, but through a sort of centripetal force the person experiences them as relevant to the central practice.
(3) Focused curiosity: All the participants experienced their activities as being guided by curiosity – a focused curiosity, where they let themselves wander, but with respect to a particular topic or question.
(4) Presence: The participants made choices about technology and format to allow themselves to be more present and attentive during the central experience.

To further illustrate these themes, in the next section, I will describe informational flourishing specifically in ultramarathon running.

10.5 INFORMATIONAL FLOURISHING IN ULTRARUNNING

Writing at age 32, Søren Kierkegaard reflected on a moment of epiphany:

> You are getting on, I said to myself, and are becoming an old man without being anything, and without really taking on anything. Wherever you look about you on the other hand, in literature or in life, you see … the many benefactors of the age who know how to do favours to mankind by making life more and more easy, some with railways, others with omnibuses and steamships, others with the telegraph, others through easily grasped surveys and brief reports on everything worth knowing… When all join together in making everything easier in every way, there remains only one possible danger, namely, that the ease becomes so great that it becomes altogether too easy; then there will be only one lack remaining, if not yet felt, when people come to miss the difficulty. Out of love for humankind, and from despair over my embarrassing situation, having accomplished nothing, and being unable to make anything easier than it had already been made, and out of a genuine interest in those who make everything easy, I conceived it as my task everywhere to create difficulties. (Kierkegaard, 2009, p. 156)

We tend to think that difficulties are to be gotten rid of, but it may be that, to really thrive, humans require obstacles and challenges to work to overcome. To be sure, life still presents any number of difficulties for all of us. Even Kierkegaard, privileged and bourgeois in many ways, suffered from depression and struggled with his faith. But his insight in this passage suggests the danger of things becoming too easy – at least on some dimensions – a danger that is also captured in works such as *Brave New World*, the novel by Aldous Huxley, and *Wall-E*, the Pixar film.

I often wonder if the rise of ultrarunning is connected to these issues. Leisure running boomed in the 1970s, and it continues to grow in popularity. Running short distances may be understandable as a healthful practice, but health and exercise cannot sufficiently explain the rise in ultramarathon running. In 1980, there were 629 ultramarathon finishes in the United States; in the year 2000, there were 12,877; and in 2016, the most recent year in which these data were published, there were 88,075 (*UltraRunning Magazine*, 2016). This trend represents growth of about 7% per year, and the sport's growth seems to be continuing. The Western States Endurance Run, one of the world's premier 100-mile footraces, continues to see record numbers of applicants each year.

Clearly there is something about ultramarathon running that people find meaningful. I began studying the sport from an information perspective in 2015 (Gorichanaz, 2015b), and then in 2016 I conducted an interview study with five participants from Kettle 100, a 100-mile race in the Midwestern United States (Gorichanaz, 2017b). These interviews were conducted in the days following the race, and the participants represented a range of ages and backgrounds. The crux of each interview began with the open question, "Tell me about your experience at Kettle 100," and I probed further based on the participant's responses. In a later study, I revisited the empirical material collected in 2016 as part of a larger analysis of information in personally meaningful activities, including also Bible reading and art-making (Gorichanaz, 2019a). Both studies used interpretative phenomenological analysis, an idiographic and hermeneutic qualitative methodology that employs semistructured interviews to explore how people understand their lived experiences. As described in the previous section, the findings from this study included four experiential themes: self-construction; centripetal force; focused curiosity; and presence. Here I offer some examples and further illustration of these themes specifically regarding ultrarunning.

To begin with self-construction, an interesting aspect of this theme is that for most participants, running was not part of the person's self-concept for their whole life. Rather, it was something they discovered and then began to cultivate as a personally meaningful activity. Helen's story expresses this well:

> I started running about 7 years ago, just to get out of the house, really. I had two little children, and I was pushing them in the stroller and just trying to get some space in my head to think. I always noticed I was pushing them as fast as I could, and then I just started gradually running. It just grew. You think you can't do it, and you start running from one sign to the next, and then you enter a race.

Life is a journey, as the cliché goes, and ultrarunners incorporate their relationship to running as part of their life journey. Engaging with information, whether during a race or before or after, also contributes to this journey and one's self-construction. The observation of the myriad forms and types of information involved leads us to the next theme, centripetal force.

Running, of course, involves the central practice of lacing up one's shoes and pounding the pavement day after day. But fully understood, running is not limited to training runs and races. Runners also read magazines, engage in social media discussions, research new products and services to support their sport, and

write reports of their race experiences. There are myriad activities related to the central practice of running; and the central practice seems to have a kind of centripetal force, pulling more and more parts of an athlete's lifeworld toward it. For an ultrarunner, who must be significantly dedicated to running to bear that name, more and more aspects of their life come to be seen through the lens of the sport. In our interview, Nestor related his experience in ultrarunning to his finishing graduate school:

> I read somewhere that a lot of ultrarunners are people who have completed several degrees or have achieved their doctorate or have gone onto higher education in some way shape or form. And I feel like one of the reasons why I completed my master's degree is because I wanted that sense of accomplishment. I wanted that little notch in my belt. And I feel like I've been ticking off each of these races. … I definitely want to continue reaching higher and higher. There is a quote that really resonated with me, and I've got it posted on my wall at home. It's from that book *Born to Run*, and there's a section in it that says, "Why the hell would you run a 100 mile race?" and the guy's response was, "Why does anybody ever climb Everest? It's because it's there." So the quote on my wall is "Because it's there." I'm here right now. So what else can my body do? What's actually possible? How far can I push myself? What are my actual limits? Continuing to find those and continuing to improve. What am I absolutely capable of?

In that quotation, Nestor demonstrates the centripetal force of ultrarunning in his life, as well as his curiosity, which is the next theme. As an ultrarunner, he is interested in discovering his limits, seeing how far he can push himself. He also describes reading books and forming analogies related to the sport. This was typical of the ultrarunner participants in this study; they regularly monitored certain information sources as a way to encounter information on ultrarunning – from new race opportunities to updates from friends and so on. The theme of focused curiosity can be seen in how ultrarunners fall down the proverbial rabbit hole of information about their sport, in a more or less focused way. Penelope told me:

> I'm pretty active on Runner's World Online… Sometimes I read the articles on there, sometimes I go onto other subforums… There's an ultramarathon forum – I don't tend to go on there much, but sometimes I read stuff there because they may have interesting topics or race reports or things like that. So that's probably my main one. Social media or Facebook, I probably have a million different running related websites I follow, but Facebook is selective with whatever sites it wants to show me, so that varies on what I get exposed to, but sometimes
>
> I use that to find out about races or know about deadlines. But sometimes I may go on to see what people are posting, because sometimes some people may post race reports on there, or sometimes the sense I got of the terrain, or at least what the environment would look like… In terms of magazines and stuff, I have subscriptions to *UltraRunning Magazine* and *Runner's World*… I read them very sporadically… I have books too, I have a whole section of running-related books and that may go through phases in terms of when I'm reading them or not… I do read blogs, but if I'm looking for anything specifically for a race, I'll just google "race reports" on that. That's how I end up on blogs.

The final theme discerned in my study was presence. The participants expressed that being present in the moment is a central part of running. They made choices with technology in order to be more engaged in the present experience – for instance, not wearing headphones so they could better enjoy the scenery of a new trail. Beyond portable audio players, today there are numerous

devices for runners to track their heart rate, cadence, speed, distance, and altitude, and having access to this information modulates the running experience. The question of which technologies allow a person to be more present (or less) is personal; in this study, Nestor and Odysseus mentioned that heart rate monitoring helped them be more attuned to their bodily experience, while they found GPS tracking to be distracting. As Odysseus said:

> If I had a GPS and I start paying attention to my GPS splits, I find it much harder to maintain an appropriate pace and much easier to overdo it, because I want to hit that 8-minute mile here and maintain it when my body is telling me don't do that.

All in all, the four themes discussed here seem to be related to participants' flourishing as ultrarunners. This discussion helps us begin to understand the qualities of personally meaningful experiences and how information is involved in personal meaning. Further research is needed to clarify whether these themes are exhaustive and better understand how they are related. If the ultimate goal is to help people experience more activities as personally meaningful, then we must also better understand the causal direction: do these qualities cause an activity to be personally meaningful, or is it the other way around?

10.6 CONCLUSION

We began this chapter by discussing justice and human flourishing, two parts of the good life. An essential element of the good life, from the first-person perspective, is experiencing personal meaning. Unfortunately, we seem to be in the midst of a crisis of personal meaning, where many people are not finding meaning in their lives.

In his novel *The Book of Laughter and Forgetting*, Milan Kundera observed:

> It takes so little, so infinitely little, for a person to cross the border beyond which everything loses meaning: love, convictions, faith, history. Human life – and herein lies its secret – takes place in the immediate proximity of that border, even in direct contact with it; it is not miles away, but a fraction of an inch. (Kundera, 1980, p. 206)

Conversely, we might say, it takes only very little to cross the border back. By articulating these issues in terms of information, I have begun to show how librarians and other information professionals might play a role in helping people infuse more of their information activities with deeper personal meaning. We will continue to explore these questions, with an emphasis on the applied aspect, in the next chapter.

Chapter 11

CRAFT

ABSTRACT

Craft has been described as a personally meaningful orientation toward an activity – this orientation is what distinguishes craft from mere labor. This conception of craft can be traced back to the Greek poiesis*, or revealing. Poiesis entails both passive and active components: passively, poiesis denotes being receptive to what is given in the world; actively, it involves the trained judgment of decision-making. Information activities can become more meaningful, then, if they are infused with this craft ethic. Fundamentally, this is a particular orientation of a person toward their world, one of the finding distinctions that matter to a person.*

Keywords: Making; craft; cræft; poiesis; art therapy; meaning

11.1 INTRODUCTION

Seeing information as something experienced suggests that becoming informed is not merely a cognitive process, nor is it passive. Even so, the digitization of documents seems to foster a mentalistic view of information, abetted by popular opinion as we turn to the internet for more and more of our information needs. And so, though it continues to be crucial, the notion of library as place has come into question. In the face of budgetary stricture, libraries must demonstrate their social impact and relevance more than ever before. To that end, there is a growing interest in the possibilities of makerspaces (by many names) as sites for learning and information service. This interest is coeval with a growing interest within information studies in the information aspects of leisure pursuits, suggesting potential synergy.

Beginning outside libraries, the maker movement has developed over the past few decades (Anderson, 2012). According to Chris Anderson, the roots of the movement lie in the entrepreneurial spirit of our time, inspired by figures such as Steve Jobs, along with the advent of small-scale alternatives to commercial

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production and, of course, the web. The discourse on makerspaces has emphasized sharing and learning (Barniskis, 2014), making it a short leap into the library world. Focusing on libraries in particular, Fourie and Meyer (2015) review the empirical literature on makerspaces, finding that most studies focus on implementation techniques and reflect on transforming the library as physical space. Research has not yet investigated the link between makerspaces and information provision and access (e.g., literacy training, guided inquiry, bridging the digital divide, community support), which is an important consideration (Fourie & Meyer, 2015). From this gap, Fourie and Meyer call for research on how libraries and other institutions play the role of information arbiter through makerspaces. They pose two questions in particular: First, how do people experience themselves in makerspaces, and how does this affect their self-efficacy and information behavior? And second, how can makerspaces contribute to information literacy?

Though the nature of the activities in makerspaces has not yet been examined in detail, research on information in serious leisure pursuits may shed some light, as many makerspace activities could also be considered through the lens of leisure. As Hartel (2005, p. 313) writes, serious leisure is "highly informative and involves knowledge acquisition." In her doctoral dissertation, for instance, Hartel (2007) described the information phenomena in the hobby of gourmet cooking. Through exploring home cooks' documents and processes, Hartel (2007) developed a thick description of the hobby, highlighting information processes (such as developing an esthetic sensibility and curating a personal culinary library) that would have been unnoticed by more restrictive conceptualizations of information. Since Hartel's introduction of the serious leisure perspective to information studies (Hartel, 2003, 2005, 2007), research at this intersection has proliferated. In 2009, *Library Trends* devoted a special issue to the topic (Fulton & Vondracek, 2009). In that issue, Robert Stebbins, founder of the serious leisure perspective, discusses the three main forms of leisure – serious, casual, and project-based – and how they can be approached in information studies (Stebbins, 2009). Though Stebbins identified serious leisure as the richest type of leisure for information research, casual leisure investigations have also been found to yield useful results (Elsweiler, Wilson, & Lunn, 2011).

Though the information behavior research on serious leisure goes some way in helping us understand the experience of information in makerspaces – and in making more generally – most research adopting the serious leisure perspective also takes a third-person, sociocognitive perspective. To examine these phenomena from the first-person perspective, some additional conceptual tools are needed. In this chapter, I will introduce the phenomenological concept of craft, or *poiesis*, as a way to understand leisure and making from the first-person perspective. As we will see, craft is a locus not just for learning, sharing, and skill-building but also for cultivating personal meaning.

11.2 CRAFT AND MEANING

For many people, the word "craft" has connotations of domesticity and femininity. Perhaps the word conjures images of popsicle sticks, brightly colored pipe

cleaners, cardstock, and glitter glue. We tend to see craft in contrast to art or design; we may take craft to be amateurish, cheap, and everyday – paling in comparison to the expert glam of art and design.

But the notion of craft is being reclaimed today, beginning particularly with a new generation of food and drink manufacturers. It may have started with craft beer, which positioned itself in contrast to commercial brewing, but today it is common to see all manner of food and drink described as craft, from cheese and ice cream to pizza and salad. In this context, "craft" is an ambiguous term, but it is broadly associated with being small scale, taking creative risks, and having local commitments; craft food and drinks are often made with limited ingredients and traditional techniques by highly skilled people and sold at premium prices (Waehning, Karampela, & Pesonen, 2019).

In his book *Cræft*, archaeologist Alex Langlands discusses the histories and meanings of various traditional British crafts, including haymaking, bee skeps, thatch roofs, and so on (Langlands, 2018). He uses the archaic spelling "cræft" to capture the deeper meaning of the concept, what the tenets of the craft food and drink movement are beginning to hint at. As Langlands writes, in Old English, cræft had to do with knowledge, power, skill, wisdom, and resourcefulness (Langlands, 2018, p. 9). Alfred the Great, a British king in the ninth century, wrote of cræft as a person's organizing principle for living a moral life (Langlands, 2018, p. 17). This resonates with our discussion of personal meaning in the previous chapters.

It is also worth noting that the traditional Japanese concept of *ikigai* (生き甲斐) is quite similar to Alfred the Great's usage of cræft. Now an everyday term in the Japanese language, ikigai originated in the Heian period (794–1185 AD), and it refers to one's reason for living, or what makes life meaningful and worthwhile for a particular person (Mitsuhashi, 2017). Activities that qualify as ikigai are freely chosen, though sometimes spontaneously (Nakanishi, 1999).

There is ample empirical support for the thesis that craft enhances life meaning. A review of the positive psychology literature concludes:

> Happiness and life satisfaction, two spheres of subjective experience of concern to psychologists articulating a vision of the good life, are influenced in deep ways by the goals that people are committed to. (Emmons, 2003, p. 122)

In a review of the occupational therapy literature, Hammell (2004) finds that a person's occupation can contribute to meaning and quality of life, even though extant theories of occupation emphasize meeting extrinsic needs (e.g., monetary success). For instance, LeBlanc (2008) presents an interview-based study of six lifelong papermakers, finding that the work was far more than just a job, but indeed a life-enhancing outlet for creative expression which contributed to their understanding of work and its meaning for them. Tubbs and Drake (2007) synthesize their own careers in occupational therapy and suggest that, as craft entails processes directed toward a particular small-scale goal or improvement, the practice of craft gives people a sense of efficacy that they can do the same in their own lives on a broader scale. In like manner, Reynolds (1999) demonstrates how craft can empower individuals through a case study of a client's processing

of unresolved grief through tapestry-making, even though the client had never practiced the craft before. And Pöllänen (2013), in a study of the narratives of leisure crafters, finds that the meaning behind crafting lies in its being holistic and intentional, particularly in the sense of achievement gained by it. In a follow-up study, Pöllänen (2015) articulates how leisure-based crafting can, in particular, help people cope with negative feelings.

While craft, particularly in the sense of cræft or ikigai, does not necessarily involve making a physical object, the most central examples of craft do. In his examination of meaning, Baumeister (1991) highlights that the things we find most meaningful are those that last the longest, particularly those that outlast us individually, such as our children or artworks. Philosopher Miguel de Unamuno similarly argued that the drive to create things that will outlast the individual is quintessentially human. He characterized this drive as "tragic," writing in *The Tragic Sense of Life*:

> Whenever we are invaded by doubt, and our faith in the immortality of the soul becomes clouded over, the longing to perpetuate our name and fame, to grasp even the shadow of immortality, grows more ardent and painfully intense. Hence the tremendous struggle to distinguish oneself, to survive somehow in the memories of others and of posterity. And this struggle is a thousand times more terrifying than the struggle for life. And this struggle gives its tone, color and character to our society, where the medieval faith in the immortal soul is fading. (de Unamuno, 1990, p. 59)

This observation illustrates why Baumeister (2005) differentiates meaning from happiness; having a meaningful life does not necessarily entail perpetual happiness. Japanese filmmaker Hayao Miyazaki said it well, in a documentary about his studio:

> The notion that one's goal in life is to be happy, that your own happiness is the goal, I just don't buy it. … I don't ever feel happy in my daily life. Really, isn't that how it is? How could that ever be our ultimate goal? Filmmaking only brings suffering. I can't believe I actually want to do another one.

For Miyazaki, filmmaking is deeply meaningful, if not always enjoyable. So craft is not so much about experiencing positive affect as it is about building one's skills. If I may quote another famed Japanese craftsman in this section, Chef Jiro Ono says in the 2011 documentary *Jiro Dreams of Sushi*:

> Once you decide on your occupation, you must immerse yourself in your work. You have to fall in love with your work. Never complain about your job. You must dedicate your life to mastering your skill. That is the secret of success and is the key to being regarded honorably.

Here Ono brings together the themes of meaning, skill, craft, and ikigai, which we will continue to explore in the next section.

11.3 CRAFT AND POIESIS

In Chapter 9, we defined meaning in general and personal meaning in particular. Then, in Chapter 10, we discussed the crisis of personal meaning in today's

societies and the obligation and opportunity for information professionals to ameliorate the crisis. In this chapter, I have suggested that one way to offer personally meaningful experiences with information is through craft. As we are starting to see, craft is more a matter of mindset than whether you use your hands. To help us understand this, we can connect craft to the much older concept of poiesis.

In their book *All Things Shining*, philosophers Hubert Dreyfus and Sean Kelly consider how one might find meaning in secular society (Dreyfus & Kelly, 2011). They write that an implicit belief in the sacred once permeated the world – in ancient times, even the ordinary was imbued with wonder – and this offered a site for meaning to earlier humans. But today, our societies are more cynical and mediated, and Dreyfus and Kelly suggest that our sense of wonder has disappeared. As de Unamuno (1990, p. 59), quoted above, observed, "the medieval faith in the immortal soul is fading." Dreyfus and Kelly assert that the world has not lost its sacredness, but rather that we have lost our skill for encountering the sacred within it – "sacred," here, being understood quite broadly. Finding meaning, then, is a matter of nurturing the skill of encountering the sacred.

More recently, philosopher Iddo Landau has also argued that finding meaning is a skill – not something that you either have or don't, but something that you can cultivate and work on (Landau, 2017). But while Dreyfus and Kelly (2011) focus on the secularization of humanity as a threat to meaning, Landau is more concerned with the way our sociotechnical infrastructure relates to meaning, such as the way social media affords perfectionism, mentioned in Chapter 10. Langlands (2018), too, suggests that digital technology narrows our sensory experience: "We're increasingly constrained by computers and a pixelated abridgement of reality that serves only to make us blind to the truly infinite complexity of the natural world" (p. 11). If we hope to broaden our perception, to rediscover the sacred, and to build meaning in our lives and help others do the same, then, these writers contend, we must practice craft. In the preface to *Scrolling Forward*, Levy (2016) provides an interesting example of this; he describes how, after graduating with a PhD in computer science in 1981, he took up calligraphy and bookbinding in search of "richness of perspective" (p. xxxv) that he felt was missing in his life.

Our discussion of cræft and ikigai lead us to an even older concept: *poiesis* (ποίησις). This Ancient Greek term is often translated as "making"; however, the Greek *techne* (τέχνη) is also translated as "making," and these words are quite different. While techne is about physical manipulation and the application of knowledge through some set of processes, poiesis is a matter of bringing forth, or letting-be-revealed (Heidegger, 1977). Poiesis involves both passive and active aspects: passively, poiesis denotes being receptive to what might be perceived in the world; actively, it involves the trained judgment of decision-making. Heidegger (2010, pp. 69–70), too, hints at this in his discussion of useful things; for Heidegger, being involves discovering the "what for" of useful things and cultivating the skill of perception for seeing things as useful.

Dreyfus and Kelly (2011) contend that opportunities for poiesis abound and that seizing them is our prerogative. The substance of their book is on cultivating poiesis through reading classic fiction, but they envision a much wider field for

poiesis. As an example, they describe the making of one's morning coffee. As an everyday task, delegated by many to Mr Coffee or Starbucks, making coffee can easily be mindless and meaningless. But, with poietic attention – that is, imbued with ritual and craft – making coffee can alternatively be a site for meaning: selecting particular beans, preparing them in a certain way, brewing the coffee using a considered method, using special equipment, etc. Then, drinking the coffee presents another host of opportunities: sitting in a comfortable place and manner, savoring the aroma, appreciating the color, etc. Dreyfus and Kelly describe a person's cultivation of poiesis in coffee consumption as learning to make distinctions that matter to them.

> When one has learned these skills and cultivated one's environment so that it is precisely suited to them, then one has a ritual rather than a routine, a meaningful celebration of oneself and one's environment rather than a generic and meaningless performance of function. (Dreyfus & Kelly, 2011, pp. 218–219)

To be sure, coffee doesn't matter to everyone, and that is well. While I might find meaning in the preparation of coffee, you might find meaning in writing letters to an old friend. The point is that each person can (perhaps must) engage with their environment, taking into account their constraints, interests, etc., to discern what can be meaningful for them – and this is a skill that can (must) be built.

Thus Dreyfus and Kelly (2011) argue that a sense of sacredness and personal meaning emerges from the practice of craft. In its deepest sense, then, craft entails developing the skills of trained judgment, i.e., poiesis, rather than necessarily making something in the sense of technical production, or techne. In other words, craft is a skill and a mindset. In the same way, computer scientist and productivity expert Cal Newport has described how the principles of the craftsman's mindset can be applied to mastering a wide variety of skills through deliberate practice and focused "deep work," which improves one's sense of personal meaning (Newport, 2016).

The understanding of craft as poiesis is broader than traditional notions. However, in recent decades, a broader view of craft has been called for in visual studies. Art, craft, and design, traditionally considered distinct pursuits, have a complex and interrelated history, and they overlap more than not (Greenhalgh, 2002). Indeed, attempting to distinguish them has been said to be irrelevant (Lees-Maffei & Sandino, 2004). Recent conceptual work in design research and knowledge management has examined models of art, craft, and design and concluded that the implementation of experiential knowledge is their unifying concept, calling for the association of craft with knowledge rather than with any particular type of product (Niedderer & Townsend, 2014). In this way, "craft can be described as distinct knowledge that is intuitive and expressed through making and doing" (Pöllänen, 2013, p. 219), and it is at once emotional, physical, intellectual, sensory, and experiential. This notion has been captured in a panoply of terms; in addition to Pöllänen's writings, it has been variously articulated as "designerly ways of knowing" (Cross, 1982), "tacit knowledge" (Gascoigne & Thornton, 2014), and "craft-based ways of knowing" (Prior, 2003). Whether these are all synonyms or point to different phenomena remains to be discussed.

11.4 CRAFT AND INFORMATION

Craft may be meaningful, but does it have anything to do with information? Does craft involve information seeking, use, organization, understanding, etc., and perhaps might craft activities be informational in themselves?

Throughout the discussion above, there have been some hints that we should answer these questions in the affirmative. We have discussed examples of craft that entail the production of information artifacts, such as artworks and films; and some craftspeople, such as the gourmet cooks studied by Hartel (2007), seek and organize recipes, books, etc., as part of their craft. In addition, we have seen that craft has some relationship to knowledge; and as theorized in information studies, knowledge derives from information. Moreover, based on discussions in the previous two chapters, we can say that meaning arises through information in the first place; and so if craft is meaningful, then there must be information somewhere. And finally, craft – or poiesis – is about a particular experiential orientation to the world, including but also going beyond those parts of the world that we would identify as "information."

In this section, we review some of the literature in information studies on the relationship between craft and information, with an eye toward supporting the meaningfulness of craft for its participants. We will focus on work that, to a greater or lesser extent, takes a first-person perspective in its research approach. Much of the work in information studies that relates to craft, such as that employing the serious leisure perspective, takes a third-person perspective and consequently does not shed much light on the question of meaning.

A few studies explore the experience of seeking information to support craft. Frank (1999), for instance, reports on the information seeking and browsing of art students in academic libraries. Frank's analysis of focus group data reveals that students valued their browsing experiences and bears suggestions for how libraries can support browsing, given the visual nature of artists' information needs. Another study, on the information seeking of professional designers, suggests that designers browse for inspirational information continuously through a personally curated set of go-to sources (Mougenot, Bouchard, & Aoussat, 2008). Given the abstract nature of their information needs (e.g., searching for an embodiment of a certain mood), direct searches are not always possible, and designers need different sorts of information systems to support their searches (Mougenot et al., 2008). Hemmig (2008) came to similar conclusions in his review of the literature on artists' information seeking; while artists do have information needs regarding specific visual references, technique, marketing, and trends, they also need information for less specified inspiration. In a study of online information seeking to support crafting, Torrey, Churchill, and McDonald (2009) also had similar findings; additionally, they identified two ways crafters "translate" digital information into their embodied craft practices – putting projects on the back burner on one hand and taking a "just keep moving" approach on the other – and how crafters build community through digital information about their craft, for example, by congregating around domain experts.

In this research area, the distinction between novices and experts has emerged as salient in terms of information seeking behavior. Torrey et al. (2009) report that skill level is an important factor in crafters' searching for online information about new techniques. One's skill level may also relate to when and how one seeks information. It has been found, for example, that junior designers tend to rely on external sources of information, whereas senior designers work intuitively, based on experience (Mougenot et al., 2008). Similarly, Court (1997) had similar findings in a study of engineering designers, concluding that engineers make extensive use of personal experience and knowledge in their work. Court identified four different ways in which memory was used: to retrieve direct data, to retrieve knowledge, to help locate external data, and to recall processes. In my own research on artists' information behavior, I also found that the artists' lived experiences, including their memories and non–art-related activities, constituted significant sources of information and inspiration for their art-making (Gorichanaz, 2020).

Based on these findings, in the craft context, information professionals should think of their work as providing inspiration as well as information. Reframing this most basic of assumptions might have wide-ranging effects in terms of system design, as it may lead us to reconsider notions such as relevance and efficiency. Next, these findings suggest that level of expertise in a craft is related to differences in information behavior – analogous to the "leisure career" posited by the serious leisure perspective (Hartel, 2005). Information professionals, then, should consider level of expertise as a key dimension in identifying user groups. Novice crafters, for example, may need more support in finding external information, while expert crafters might better be supported in activating their internal information. A question for further research is whether it may also be helpful to do the opposite: instructing novices on tapping into their intuition and memory, as a nudge toward expertise, and helping experts encounter external information that they may otherwise not seek out.

Next, a body of work considers how a craft activity itself can be informational. A landmark early study in this space is the doctoral dissertation of Tidline (2003), which demonstrates how choices about information design are part and parcel to art-making. Tidline presents a narrative analysis of the information practices of artists, finding that the chosen medium of expression is seen as significant and that engaging with other artwork is a constitutive part of the creative process.

Two other studies illuminate the informativeness of craft activities in the sense of information-as-process; that is, they show how people learn and grow through practicing craft. Self, Dalke, and Evans (2013) present findings from an interview study of designers of various levels of expertise, looking particularly at their use of tools in completing tasks. The authors conclude that designers' work is highly contextualized and that expert designers see their tools as effective in the particular context of the activity at hand rather than in a general way, whereas novice designers tend to have a more all-purpose understanding of their tools. Self et al. (2013) suggest that focusing on context and situatedness of given design activities is a route to supporting design education. In another study, Groth (2015) reports on a practice-led research project in which she analyzed video

recordings of her own experience throwing clay while blindfolded. She uses critical incidents in the throwing process as keyframes for her analysis, outlining a process by which clues from her sensory experience affect her emotions and consequent actions. Incidentally, this model is identical to the one that emerged from a study of my own information experience during a 100-mile footrace (Gorichanaz, 2015b), which was also an investigation of an individual's experience of corporeal and other forms of information in a craft activity. Groth concludes, based on this model, that experience and emotion are central elements in the process of gaining expertise in craft.

This work begins to show that craft is not only informational but also meaningful. In connection with the growing issues of mental health discussed in the previous chapter, this discussion shows how craft may be a route to helping people cultivate a deeper sense of life meaning. In practice, craft and information have already intersected in makerspaces, suggesting that makerspaces might provide a venue for the investigation of these issues. Indeed, what Fourie and Meyer (2015) intuit as lacking in the information studies makerspace literature is the same thing Hammell (2004) found lacking in the occupational therapy literature: a recognition of the capacity for craft to contribute not merely to career advancement and monetary gain, but to life meaning. But research advances can also be made in everyday life information behavior. Torrey et al. (2009), for example, discuss how online communities of craft information find satisfaction in supporting each other in their endeavors, sharing information, and so on.

Several studies in the field of human–computer interaction also contribute in this regard, with Daniela Rosner being a leader in this area. Rosner and Taylor (2011) report on participant observation study of a restorative bookbinding apprenticeship, revealing the importance of the human relation to physical material in human–information interaction. "What it is that makes a technology functional and evocative is invariably woven into how the technology wears and becomes remade over time" (Rosner & Taylor, 2011, p. 4). Goodman and Rosner (2011) explore how gardeners and knitters respond to the introduction of digital tools in their work with a combination of rejection of that which purports to "cut labor" – highlighting the meaningfulness of the activity itself – and acceptance of that which allows wider distribution of craft products. Fox, Ulgado, and Rosner (2015) describe how crafting in feminist hackerspaces helps participants to work out their place in society, as women in technology, and establish self-efficacy that can be applied in the wider world. Saegusa, Tran, and Rosner (2016) and Rosner, Ikemiya, and Regan (2015) report on research-through-design explorations of the implementation of a computerized engraving tool for ceramics, revealing the nature of this craft as centrally process-based.

Finally, I want to highlight one study in particular – from the museum studies literature – that demonstrates the deeply meaningful nature of craft. In this project, Overgaard and Sørensen (2015) sought to discover "how a museum, especially an art museum, could find new ways to use the space and collections to make the museum more accessible for new audience groups" (p. 188), echoing the reasoning that ushered in library makerspaces as discussed above. Overgaard and Sørensen chose to focus their efforts on mentally vulnerable adults, who in

previous research were found to feel socially excluded and lonely, but who "said that they achieved a form of self-healing when expressing themselves through art or music" (Overgaard & Sørensen, 2015, p. 189). Inspired by these findings, Overgaard and Sørensen put together a series of participant observation workshops in which participants learned about the work of Storm P., a famous Danish artist whose work told the story of the socially underprivileged, and then created their own artworks, finally showing these works in a culminating exhibit. These workshops offered a way for mentally vulnerable adults to convene with others in similar situations while practicing a craft and engaging with their nation's cultural heritage.

> The hope was for the participants to feel appreciated and valued for the work they did at the museum and for them to regain a sense of purpose in life, through the social community that they become part of at the museum. (Overgaard & Sørensen, 2015, p. 195)

In this work, Overgaard and Sørensen (2015) found that participants were overwhelmingly positively impacted through the workshops, developing a sense of community and confidence, which "became a contributing factor in their journey toward regaining a purposeful life" (p. 198). Several participants even stayed on subsequently as volunteers at the Storm P. Museum as a way to remain continually involved. As the authors explain, the success of their project hinged on social interaction – of participants spending time in dialogue with others like themselves. This framing, perhaps, hinges on their conceptualization of mental vulnerability as primarily a social issue. Surely human interaction is of major importance, but Overgaard and Sørensen do not discuss how the personal act of art-making may have also contributed to the participants' sense of increased well-being. However, as quoted above, the authors recognized that self-expression through art can lead to healing, and thus this would seem to merit further investigation on its own, even apart from the social aspects of the workshop.

11.5 CONCLUSION

This chapter has explored the intersections between information and craft. While "craft" has many connotations, from the first-person perspective the term is defined as a particular experiential orientation toward an activity. Craft experiences can be deeply meaningful for people. And these activities need not be overly complex. In the 2016 Netflix mini-series *Cooked*, Michael Pollan shares, "Of all the things I've learned how to make, making a decent loaf of bread has been the most satisfying."

With the context of the previous two chapters, we can see that one route for information professionals to help people build meaning in their lives is to offer opportunities to experience craft for themselves and to build their skills in a craft of their choice. The next chapter provides further insights into how such opportunities can be designed.

Chapter 12

DESIGNING FOR MEANING

ABSTRACT

For all that many technology designers today gloss their work in terms of "creating meaningful experiences," most design is focused on efficiency, productivity, self-indulgence, and pleasure-seeking, and little discussion has been had on what "meaningful experiences" actually means. Still, there is an opportunity and a need to design for meaning. In the research literature, there are some precedents for this, rooted in the Slow Technology movement. That research suggests, for instance, that personally meaningful designs should make space for evolution over time; be upgradeable, maintainable, and replaceable; and afford focused rather than distracting use. This work has room to be deepened and expanded. To begin, we can look to paradigms in psychology and philosophy for techniques to cultivate personal meaning: Life Review and poietic judgment. Two design strategies that emerge from this are noticing and purposing. But perhaps more important than following any particular strategies is the embodiment of a particular designerly mood conducive to engaging users with personal meaning.

Keywords: Slow Technology; life review; poiesis; mood; irony; personal meaning; sustainable design

12.1 INTRODUCTION

In the previous chapters, we looked at what "meaning" means, how meaning connects with the good life, and how meaningful activities are experienced as craft. In this chapter, we turn to the question of designing personally meaningful experiences.

This presents some difficulties, as personally meaningful experiences may not be the result of a simple recipe combining a list of ingredients; they take some initiative on the part of the end user as well. For an analogy, we can look to what philosopher Jean-Luc Nancy wrote regarding the beautiful and the sublime in art. Whereas a work of art might be called beautiful because of certain aspects of its

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presentation, Nancy argues that art can never be called sublime in itself; rather, art can only offer the possibility of a sublime experience to a viewer (Nancy, 1993). Carrying this idea to our context, we likely can't design personally meaningful experiences per se, but rather we can only offer a platform for a person to cultivate such experiences for themselves.

Another wrinkle: As Martela and Steger (2016) discuss, frameworks of personal meaning such as that articulated by Mekler and Hornbæk (2019), which we considered in Section 9.4, provide a means for describing and evaluating personal meaning once it is there, but they do not show the antecedents for it or necessarily how to cultivate it in the first place. So if the question is designing for personal meaning, we will have to look elsewhere than the existing definitions *of* personal meaning. It may be for this reason that, as Mekler and Hornbæk (2019) point out, to date most recommendations for designing for personal meaning have been superficial. Kaptelinin (2018, p. 10), too, writes that "there has been relatively little attention to systematic conceptual analysis of meaning making."

In this chapter, I provide some ways in for designers who want to offer personally meaningful experiences to their users. First, I discuss the scholarly context and some prior work in this area, which has been predominantly in the field of human–computer interaction (HCI). Next, I bring in the literature on antecedents to personal meaning, suggesting that designing for personal meaning should focus not on the aspects of personal meaning but rather on its antecedents. In this light, we can understand efforts in psychology and philosophy for helping people develop meaning as appealing to these antecedents. I discuss two broad paradigms for this: the Life Review intervention from psychology and poietic judgment from philosophy. Finally, I describe a particular mood that designers should inhabit when designing for personal meaning.

12.2 SLOW TECHNOLOGY AND THE TURN TOWARD MEANING IN HCI

Of all the areas in information studies, broadly construed, the one that has made the greatest contributions to the question of designing for personal meaning has been HCI. Originally, HCI was concerned primarily with engineering for usability, i.e., helping people accomplish their tasks more quickly and easily. In recent decades, the field has seen its concerns embrace bigger questions of human experience, including aesthetics and emotion (Bødker, 2006; Grudin, 1990; Harrison, Sengers, & Tatar, 2011; Mann, 1997; McCarthy, Wright, Wallace, & Dearden, 2006; Norman, 2004). Arguably, such concerns entered the remit of HCI with the Slow Technology movement, beginning with Hallnäs and Redström's seminal article (Hallnäs & Redström, 2001). Slow design affords understanding as well as self-reflection by stimulating people to attend more to the personally meaningful aspects of an interaction than to the less meaningful parts (Grosse-Hering, Mason, Aliakseyeu, Bakker, & Desmet, 2013).

Recently, HCI scholars have called for more attention to questions surrounding that of meaning, such as issues of worth (Cockton, 2006), embodied

experience (Svanæs, 2013), and the existentialist themes of death, identity, isolation, freedom, and meaning (Kaptelinin, 2018). To cite just one metatheoretical enjoinment in this vein, Kou, Gui, Chen, and Nardi (2019)

> …call for more attention to self-transformation even when the primary design goals are social or technical transformations. It would be valuable for designers to critically engage with their own work, asking how the technology intersects with self-realization and self-transformation.

And while comparatively few researchers in HCI have examined meaning directly, there have been calls for further research that does so (Lukoff, Yu, Kientz, & Hiniker, 2018).

In the past few years, there have been empirical studies in HCI to help the field understand meaningfulness. First, Mekler and Hornbæk (2016) reported on a study contrasting experiences of momentary pleasure with lasting good (hedonism vs eudaemonia), finding that experiences of lasting good – i.e., personally meaningful experiences – involved working on personal goals, positive affect, and long-term importance. Next, Lukoff et al. (2018) examined what makes some smartphone interactions more meaningful than others. They found that when people used their phones out of habit and for passive social media consumption, their experiences were less meaningful. Moreover, participants felt a loss of autonomy in these experiences. Here habituation and passiveness suggest a lack of engagement, self-efficacy, and projects of worth.

Besides theoretical and empirical work, there have been a number of design proposals in HCI related to personal meaning. Such work includes designing for personal reflection, storytelling, life-relevant learning, ambiguity, and rarity. While authors of such work tend to refer to meaning in passing, such as in their introductions, the bulk of this work relates only to (what are implied to be) particular aspects of personal meaning and lacks an overarching theoretical strategy. It is my hope that bringing these discussions together in this chapter under the rubric of personal meaning will contribute to better informed discussions on these topics and consequently stronger designs.

To begin with designs encouraging personal reflection and storytelling, examples include AnyType (Devendorf & Ryokai, 2013), a system allowing people to create letterforms by photographing objects in their environment; GoSlow (Cheng et al., 2011), a smartphone app design with various features to encourage introspection; and Photobox (Odom et al., 2014), a wooden chest equipped with a photo printer that encourages reflection on the past. Designs for helping children engage in storytelling have also been discussed, seeing personal reflection as related to story (Panjwani, 2017; Saksono & Parker, 2017). Related to this is design work on life-relevant learning (Clegg et al., 2012), which is said to contribute to personal meaning in children by allowing them to choose their own approach to exploring shared topics in educational settings (Anastopoulou et al., 2012). Outside the specific paradigm of life-relevant learning, there have been efforts to integrate design into people's lives through location awareness. For example, Noising Around enabled students to use mobile devices for measuring and analyzing sound levels around their schools (Wyeth & MacColl, 2010); and Ambient Wood achieved something similar in woodland settings (Rogers & Price, 2008). Such approaches respond to the problem

that much technology is designed in highly structured ways, giving users little flexibility for exploring their own curiosity (Wyeth & MacColl, 2010).

Next, several authors have highlighted how ambiguity in design can afford meaning by allowing users to understand objects in personal and contextualized ways that may not have been predictable by the designer (Boehner, Sengers, & Warner, 2008; Gaver, Beaver, & Benford, 2003; Sengers & Gaver, 2006). An oft-cited example of this is Drift Table (Gaver et al., 2004), which does not define its own purpose and thus enjoins users to complete the object by interacting with it. And finally, some authors have examined how the physical qualities of technological objects contribute to personal meaning, what can broadly be referred to as rarity, the quality of something's having particular value for someone. Walker (2011) contends that personally meaningful objects have three aspects: high quality, durability, and upgradability. These aspects are echoed in Jung et al.'s study of how objects achieve "heirloom" status – or, more poetically, become *ensouled* (Jung, Bardzell, Blevis, Pierce, & Stolterman, 2011). Expanding on these aspects, Walker articulates a number of design values for personally meaningful objects:

- Evolve continuously as technology and tastes change
- Have upgradable and replaceable components
- Be able to be maintained, repaired, and upgraded locally
- Foster more considered and less distracting use

To this list, Jung et al. (2011) would add that the meaningfulness of an object is a function of both its physical qualities and a person's built-up experiences with it. Centrally, both Jung et al. and Walker argue that the goal is to give technological objects inherent value *as objects*, "over and above their utilitarian value" (Walker, 2011, p. 99), i.e., rarity.

12.3 PERSONAL MEANING AND ITS ANTECEDENTS

As discussed in the previous section, the field of HCI has begun over the past several years to discuss designing for personal meaning. We've seen in the previous chapters that such discussions are part of a broader trend across many scholarly disciplines toward exploring personal meaning. Of note, there is debate about which concepts under investigation are aspects of personal meaning and which are precedents for personal meaning. As Martela and Steger (2016) summarize, concepts such as values and projects of worth may actually be better considered precedents for personal meaning, rather than aspects of it. These conversations are important for designers because it may be that we cannot design for personal meaning per se, but we can only design for its antecedents. As mentioned above, Mekler and Hornbæk (2019) point out that to date most recommendations for designing for personal meaning have been superficial – and this may be due in part to confusion between aspects and antecedents.

To give a formal definition, the antecedents for personal meaning are the attributes a person must have (recall from Section 9.4 that a person can be

construed as a bundle of attributes) in order to experience personal meaning. In psychology and philosophy, several antecedents have been discussed, and there is an ongoing question about which concepts are valid, how they fit together, which (if any) are must-haves and which are nice-to-haves, etc. (Martela & Steger, 2016). However, the present state of these discussions does offer some welcome starting points for designers, who are generally more concerned with what works than with what is ultimately metaphysically true. We should also remember that personal meaning is not all or nothing, but comes in degrees (Landau, 2017). Thus it may be that, even if ultimately only one of these antecedents is truly necessary for some level of personal meaning, it is likely that the more of these one has, the better. While in many domains it is possible to have too much of a good thing, it seems dubious that one's life could be "too meaningful."

Here I offer a list of a number of antecedents for personal meaning synthesized from the literature, and I attempt to map them to the five aspects of personal meaning defined by Mekler and Hornbæk (2019) (see Section 9.4), namely connection, purpose, coherence, resonance, and significance, as depicted in Fig. 12.1. I present these antecedents in a logical order, with each antecedent being supported by the previous one; thus I suggest that the first antecedent in the list, having values, is the ultimate underlying antecedent. However, further

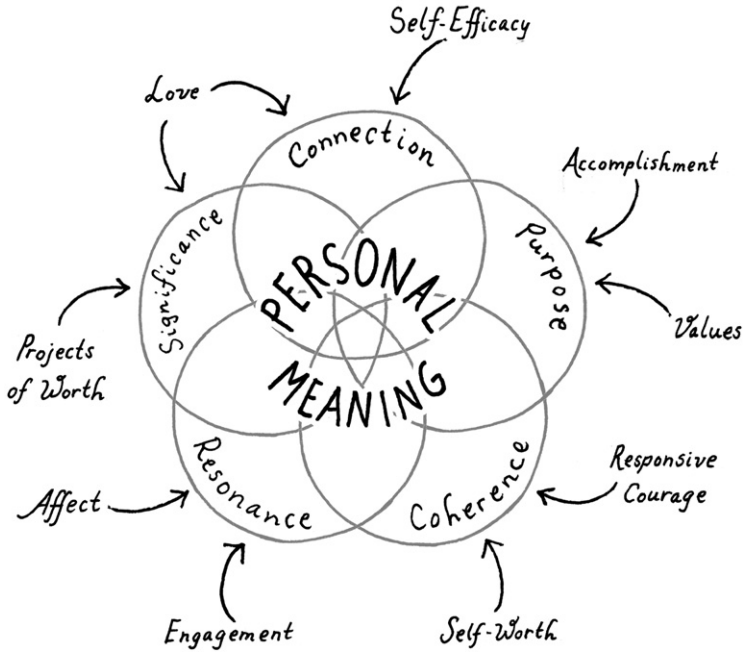

Fig. 12.1. How the Antecedents for Personal Meaning Identified in this Chapter (Outer Text) Contribute to the Dimensions of Personal Meaning (Circles).

research should test this claim. For the present, the ordering of this list may be considered simply hypothetical.

12.3.1 The Antecedents of Personal Meaning

The first antecedent is having **values**, which means that we seek to have some basis for judging good and bad, and then to view our own actions as good – whether by doing good actions or rationalizing our prior actions as good (Baumeister, 1991; Krause & Hayward, 2014).

Next, personal meaning depends on one's participation in **projects of worth** (Wolf, 1997). A *project* is an undertaking with some purpose and complexity, which a person brings toward completion over a span of time. A project's *worth* depends at least partly on one's values. Put differently, each of us has a sense that some things are more worth spending our time on, and other things less. There are likely certain projects that most, if not all, humans find meaningful, such as building relationships and pursuing intellectual accomplishments (Wolf, 1997). Others may be idiosyncratic; one person may deem it worthwhile to prepare their morning coffee by pour over with hand-ground beans while another opts for Starbucks. In my own research, I have explored how projects of worth entail *centripetal force*, meaning that peripheral practices and activities may get pulled into the project (in the case of the morning coffee, a person may find themselves researching and sourcing the best beans), as well as *focused curiosity*, meaning that a person is guided along a perhaps-unforeseen path in carrying out their projects (Gorichanaz, 2019a).

Engagement is the next antecedent, and it is related to projects of worth. At their best, our projects of worth engage us actively – we find them gripping and exciting, rather than boring or alienating (Morgan & Farsides, 2009; Wolf, 1997). At these times we feel *especially alive* (Wolf, 1997) and *involved* in the world (Leontiev, 2006). This is related to *presence*, or the feeling of truly being there for this life experience (Gorichanaz, 2019a). Building on the feeling of engagement, another antecedent includes other **affective components** that are relevant, such as happiness and satisfaction (Reker & Wong, 1988).

Next is **accomplishment**. While simply pursuing projects of worth can be meaningful, we also gain meaning specifically from completing and having completed those projects (Frankl, 1985; Morgan & Farsides, 2009). Part and parcel to this is our ability to see the results of our work as well as the reason behind what we did (Frankl, 1985).

Relatedly, personal meaning depends on **self-efficacy**, or our belief that we are able to make a difference in the world, whether that be on great or small scale (Baumeister, 1991). Another way to describe this is in terms of agency (Leontiev, 2006). Seeing one's accomplishments may contribute to this, but the deeper value of self-efficacy is understanding oneself as causally connected to the rest of the world (Baumeister, 1991).

Another antecedent is **self-worth**, which is connected to but distinct from self-efficacy. To experience meaning, we must consider ourselves to be valuable (Baumeister, 1991). It is not just that we are engaged in projects that are worth doing, but

that our very lives are worth living. Part of this is the sense that one is living authentically – fully owning oneself in terms of both history and possibilities (Leontiev, 2006). Relatedly, research has shown an element of *self-construction* that occurs in personally meaningful activities, as one's engagement in such activities comes to form part of their self-concept (Gorichanaz, 2019a). Experiencing self-worth also involved reconciling the past, including coming to terms with any experiences or facts that have in the past challenged one's sense of worth (Krause & Hayward, 2014).

Next, personal meaning requires **responsive courage**, or one's ability to choose our reactions and attitudes to situations, particularly difficult ones (Frankl, 1985; Stockdale, 1993; Wong, 2014). Parts of this are the practices of humor and irony, which are means of managing life's difficulties (Frankl, 1985; Lear, 2011; Nagel, 1971).

The final antecedent to personal meaning is **love**, defined here as an intensification of inner life in which we transcend ourselves through the other – whether that other is another person, an animal, an activity, or something else (Frankl, 1985; Smith, 2017).

As antecedents, these attributes open the door for – or perhaps even afford or cause – personal meaning. Given the five-part framework defined by Mekler and Hornbæk (2019), it seems that each of these antecedents corresponds to one or more dimensions of personal meaning. These linkages are depicted in Fig. 12.1. For example, love contributes to significance, as it is a matter of transcendence and finding meaning outside oneself, and connection, as it manifests relationships among oneself and other aspects of the world.

This framework clarifies many questions about designing for personal meaning. For example, Mekler and Hornbæk (2019, p. 10) discuss the troubled prospect of designing for coherence: "maintaining a sense of coherence is generally beneficial, but deliberately targeting designs at undermining the experience of coherence…may afford opportunities to… gain new insights." In other words, designing for coherence doesn't mean that designs should always express coherence; rather, as this framework suggests, one must design for *the antecedents of* coherence, which may involve some messiness. To give another example, Mekler and Hornbæk (2019, pp. 8–9) discuss how the relationship between reflection and meaning is unclear. As we will see in the following section, reflection can be understood as contributing to a person's senses of accomplishment, self-efficacy, and self-worth, which are antecedents to personal meaning. More broadly, this framework emphasizes that the antecedents discussed so far in the literature are only part of the picture of personal meaning; deeper personal meaning also requires attention to the "the intuitive and unreflected experience of resonance" (Mekler & Hornbæk, 2019, p. 9), which constitutes an alluring area for further research.

12.4 TECHNIQUES FOR CULTIVATING PERSONAL MEANING

If the attributes discussed above are the antecedents for personal meaning, then cultivating personal meaning entails fostering these attributes. Psychologists and philosophers over the past few decades have developed techniques for doing so; these techniques will be discussed in this section.

12.4.1 Life Review in Psychology

In psychology, the key technique for helping people cultivate personal meaning is the Life Review intervention, which was developed several decades ago (Butler, 1963; Maercker & Bachem, 2013) and has since seen many variations (Westerhof, Bohlmeijer, van Beljouw, & Pot, 2010). In Life Review, people are guided through reminiscence and storytelling over a number of sessions, each with a theme (e.g., hands, friendship, desire). Life Review has been shown to help with death preparation, identity development, and interpersonal bonding (Maercker & Bachem, 2013). Originally, Life Review was predominantly used with elderly people to alleviate depressive symptoms (Butler, 1963). Nowadays, it is used with many populations, and reviewing memories is seen as a helpful process for personal development at all ages (Pasupathi, Weeks, & Rice, 2006). Since its inception, the link between Life Review and personal meaning has been maintained and stressed.

Aspects of Life Review said to contribute to personal meaning include learning from adverse experiences, remembering solutions to past problems, and integrating memories into a coherent life story (Cappeliez, Rivard, & Guindon, 2007; Krause, 2004; Smith, 2017). On the framework of antecedents given above, Life Review contributes to:

- *accomplishment*, as Life Review helps people recall and appreciate the projects they have completed in their lives and see the meaning of those projects (Frankl, 1985; Morgan & Farsides, 2009)
- *self-efficacy*, as seeing one's accomplishments can help one understand their agency (Baumeister, 1991)
- *self-worth*, particularly as the technique entails coming to terms with challenging parts of one's history (Krause & Hayward, 2014).

Building on concepts from Life Review, we might envision designing systems that help people anticipate, engage with, and then review the purposes behind their various projects in life. According to existential philosophy, being human is a matter of being engaged in projects (Kaptelinin, 2018), but most of the time we go about these projects unconsciously (Heidegger, 2010). Part of living authentically is choosing one's projects consciously and engaging with them actively (Heidegger, 2010; Su & Stolterman, 2016). As Zimmerman (2009) writes, this is a matter of helping people become the people they want to be. Designers can help people live more authentically by helping users engage with purpose before,

during, and after a project. Before, designs can help people identify new projects of worth; during, designs can support people's tasks and projects (both short-term and long-term) (Zimmerman, 2009) and obviate distractions (Lukoff et al., 2018); and after, designs can help people reflect on what has been done and why. This may involve, for example, making people's long-term goals more present in their daily lives (Zimmerman, 2009), using machine learning to predict a person's purpose in using a system and supporting that purpose through dynamic interface changes (Lukoff et al., 2018), and encouraging people to move on once their purpose is achieved (Lukoff et al., 2018).

An example of a system that incorporates these principles is Reverse Alarm Clock (Ozenc et al., 2007), discussed by Zimmerman (2009). This design helps parents teach their children responsibility around sleeping and waking. The clock shows only the sun or moon rather than the precise time; and children are taught to stay in bed when the moon is out, optionally get out of bed if the moon is gone, and get out of bed if the sun is out. The system gives children autonomy such as choosing their wake-up music and initiating the moonrise, in addition to giving them some flexibility in when they get out of bed. The system provides a balance of constraint and autonomy appropriate to small children; and over time it helps instill the children with healthy sleeping routines and a better sense of when rules should be followed and when they might be broken (e.g., when one is sick or has had a nightmare) (Zimmerman, 2009).

12.4.2 Poietic Judgment in Philosophy

When it comes to philosophers, there are lively debates about whether our lives can be meaningful in the cosmic sense (Landau, 2017; Nagel, 1971). But even if nothing we do "actually matters," philosophers still seem to agree that we can discern and experience meaning in our lives, whether that be through defying the absurdity of life (Camus, 2018), developing a capacity for irony (Lear, 2011; Nagel, 1971), or recognizing that even small, local actions and experiences can be meaningful (Landau, 2017).

As discussed in the previous chapter, Dreyfus and Kelly (2011) write that cultivating personal meaning is, at its essence, building the skill of encountering the sacred in the world – what can be termed *poietic judgment*. Landau (2017) offers practical advice for cultivating this trained judgment, chiefly in the form of questions a person can ask themselves, for example, "What characteristics in other people lead you to consider them as having meaningful lives?" (Landau, 2017, p. 206). Other strategies he outlines include practicing gratitude and sensitivity to beauty, letting go of perfectionism, and reflecting on the past (Landau, 2017).

These philosophers argue that opportunities for meaning abound, even in seemingly banal or menial situations, and even that seizing these opportunities is our responsibility. If we go through life with an eye toward the distinctions that are possible, and we work to decide which distinctions matter to us and then make those distinctions, these philosophers suggest that our lives will become more meaningful. This process contributes to:

- developing one's *values*, as making distinctions entails valuing some things over others (Dreyfus & Kelly, 2011)
- identifying *projects of worth*, as those values are applied to possible projects (Wolf, 1997)
- experiencing *engagement*, as it entails changing one's perspective on a situation to help them feel more involved and alive (Landau, 2017)
- feeling satisfaction and other *affective components* that contribute to meaning, as these arise in the context of an engaged perspective in projects of worth (Wolf, 1997)
- practicing *responsive courage*, as we identify which aspects of reality are under our control and which are not, and we respond accordingly (Lear, 2011; Nagel, 1971; Stockdale, 1993)
- building *love*, as love depends on loving particular, distinct entities, rather than general ones (Wright, 2016).

The philosophical practice of poietic judgment begins with opening one's attention and noticing distinctions that can be made. It can be stimulating to connect with the world in this way, and moreover it helps a person discover what is truly important to them. Designers have an opportunity to aid people's noticing practices, both within and outside of the designed interface. A recent example of this is the GIFT app (Spence et al., 2019), a system for the digital gifting of museum experiences. The system was designed explicitly to provoke new perspectives on familiar things, for instance by inviting users to look more carefully or see something from a different vantage. This guiding value influenced certain design decisions, such as the gifting interface being through voice so that users are not kept looking at their screens. Further guidance in design for noticing may come from work in contemplative studies, where many contemplative practices revolve around purposely directing one's attention – for example, attentional practice, better known as mindfulness practice (Komjathy, 2018).

Across Life Review and poietic judgment, then, all the antecedents for personal meaning that have been identified thus far may be addressed. To design for personal meaning, then, we might leverage certain aspects of Life Review and poietic judgment. Indeed, if we examine the prior design work in HCI reviewed above, we can see that, more or less, work on reflection, storytelling, and life-relevant learning implements aspects of Life Review, while the work on ambiguity and rarity implements aspects of poietic judgment.

12.5 A MOOD FOR DESIGNING FOR PERSONAL MEANING

It may be the case that every age fears that "the end is near," as the cliché picket sign reads. Regardless, this seems to be a common sentiment today in some circles, amid worries of climate change, technological dystopia, political hyper-polarization, and so on. Reflecting on this sense of world-threatening crisis,

Light, Powell, and Shklovski (2017) wonder how designers should respond. They question the assumption that designers might simply follow a set of techniques or best practices to overcome such large issues, a sentiment echoed by a number of others as well (Mekler & Hornbæk, 2019; Rosner, 2018; Walker, 2011). Rather, Light et al. (2017) suggest that designing in this context is more about inhabiting a particular mood. In its everyday sense, "mood" refers to a state of mind, atmosphere, or tone; in phenomenological philosophy, mood has a more specific meaning, which demonstrates its relevance to design: Mood is a person's sense for what is possible in a given situation (Heidegger, 2010, §29). I would suggest that designing for personal meaning is much the same as designing in response to crisis in this respect; it depends on more than simply following a series of steps. Rather, it depends in part on the way of being of the designer.

To that end, this section discusses some aspects of the mood a designer should inhabit in designing for personal meaning. This is not meant to be a "necessary and sufficient" checklist of qualities for a designer, but part of an ongoing conversation about the kind of people we should be to help make the world the kind of place we want it to be. *How* to inhabit each aspect of the mood is outside the scope of this chapter, but references are provided for the interested reader. In addition to Light et al. (2017), inspiration for the mood described here comes from a variety of sources (Floridi, 2013; Frankl, 1985; Hodge, Montague, Hastings, & Morrissey, 2019; Lear, 2011; Su & Stolterman, 2016).

To begin, Light et al. (2017) discuss how designers should:

- be attentive, particularly to things that make us uncomfortable – for these are grounds ripe for investigation and perhaps intervention
- be flexible, recognizing when current patterns will not serve us in the "Long Now," even if they seem to serve us in the short term
- look for their personal purpose, asking, "What small thing, given my particular situation and capacities, can I do to help make the world a better place?"
- recognize that we are all in it together here on Spaceship Earth, and so we should look for common purposes as well as our personal ones
- be wary of the well-worn track, and not value easiness for the sake of ease.

To this admirable list it should be added that designers must remember at all times that the people they are designing for are whole persons, rather than merely actors in particular social roles (or "users") (Hodge et al., 2019). Part of this is continually acknowledging that the people we design for also have their own agency and purposes (Lukoff et al., 2018).

Next, following insights primarily from the existential philosopher Søren Kierkegaard, designers should practice irony. This is not a matter of being combative or sarcastic, as that word is often used, but rather cultivating a particular response to the exigencies of life (Kierkegaard, 2009; Lear, 2011; Su & Stolterman, 2016). Opportunities for irony arise in the gap between, on one hand, our idealized visions for *how things should be*, and on the other, the reality of *how things actually are*. Frequently we fall short, both as individuals and as societies.

"Irony, for Kierkegaard, is the activity of bringing this falling short to light *in a way that is meant to grab us*" (Lear, 2011, p. 13). Faced with the unjust, difficult, or absurd, it is easy to slip into malaise, nihilism, or outrage. More difficult – and more generative, Kierkegaard would say – is becoming ironic. At its best, irony helps instill our lives with a sense of humility, deeper understandings, and a touch of humor (Lear, 2011). And as Frankl (1985) has written, experiencing such humor can give us the courage we need to move forward with purpose.

Another aspect of the designer's mood should be gratitude. A wealth of research in positive psychology associates gratitude with happiness, well-being, and meaning (Allen, 2018; Datu & Mateo, 2015; Emmons, 2007; Wood, Froh, & Geraghty, 2010). But more specifically, experiencing gratitude allows a person to perceive a wider range of possibilities (Fredrickson, 2004; Lambert, Graham, Fincham, & Stillman, 2009), which has obvious import for designers. On a practical level, designers have much to be grateful for: Designers are privileged with levels of freedom and agency – to say nothing of material comforts – that many people on earth do not have. Gratitude is a way to recognize and honor those privileges. Essays and books abound on how to cultivate gratitude in one's life (Andersen, 2013; Emmons, 2013; Razzetti, 2018).

Lastly, designers should be responsible. Numerous authors have written about the responsibilities designers have (Scott-Curran, 2016; Toscano, 2018), including to the craft, to fellow designers, and to end users. Codes of ethics and professional responsibility, too, generally outline certain responsibilities for designers. Design inherently has a moral component, as it involves creating something that does not yet exist, and so care should be taken that whatever a designer shepherds into existence is for the better (Brey, 2018). Evidently, design can contribute to good or to ill. Designers should acknowledge the seriousness of their vocation and approach their work with responsibility. This means, among other things, taking care to envision unforeseen consequences and responding respectably when things go wrong.

As a final observation, it is interesting that the aspects of the designer's mood as outlined here mirror some of the antecedents for and aspects of personal meaning discussed above. This suggests that designing for personal meaning may be personally meaningful in itself.

12.6 CONCLUSION

Nietzsche observed, "If you have a *why* for your life, you can get by with almost any *how*" (Nietzsche, 1997, p. 6). This idea resonated with Victor Frankl, who found this to be true of his fellow prisoners in Nazi concentration camps during World War II (Frankl, 1985). Some could bear it, but others could not. Personal meaning is part of one's "why"; and as we have seen in this part of the book, personal meaning is a human need for all of us, even outside the most trying "hows." Sadly, a paucity of personal meaning is one of the ills in many corners of modern society.

Information professionals have a duty to help people find and develop meaning. This may be readily accepted by librarians and others who have a social justice mission. But other areas of the information professions may be driven by other motivations. So it might be said that, in the tech sector, for instance, designing for meaning has no pull compared to designing for short-term economic benefit. Historically, this may have been the case; however, change seems to be in the air. As Lukoff et al. (2018) discuss, even profit-driven tech companies such as Facebook are beginning to acknowledge the long-term economic value of designing for meaningfulness. And as the academic concerns of HCI have historically made their way into industry in the years following (Myers, 1998), we might expect – or at least hope – that such will be the case when it comes to designing for personal meaning as well.

Future research should test and refine the mood and framework articulated in this chapter. In particular, the question arises of when following these ideas might be inappropriate. As mentioned, it seems unlikely that a person's life could ever be "too meaningful." Yet it could be the case that one can go too far in implementing the design principles discussed in this chapter such that the user is alienated and disengages. Where is that line? And more broadly, designers should remember that, while meaning is a need for human beings, not every interaction need be deeply personally meaningful. As Kaptelinin (2018, p. 5) writes, "What our everyday life is mostly comprised of is achieving meaningful goals that are not directly (or at all) determined by existential concerns."

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CONCLUSION

This book has presented a framework for information experience, from theory to design. It has been organized according to the broad frames of epistemology, ontology, and ethics, through which we examined the concepts of understanding, self, and meaning. In turn, we have looked at each of these concepts with a focus on epistemology, ontology, ethics, and design. Our journey has been something like looking through a microscope: First you make the coarse adjustment, and then you make the fine adjustments.

Where do we go from here? I mentioned in the introduction that the future seems bright for information experience. Recall that we can understand information experience as a phenomenon or object of study on one hand, and as a research approach on the other. Throughout the book, I have commented on interesting lines of research regarding information experience as a phenomenon. These threads are worth following because individual people, each with their own perspective on the world, are the ultimate end of information research and development, and designers of information systems, products, and services must take their experiences into account.

The future is likewise bright for information experience as a research approach. I see two main reasons for this. First, the first-person perspective has the capacity to reveal phenomena of interest that were overlooked in other perspectives. What might we learn by examining other areas of information studies with the research approach of information experience? Second, information experience offers a cohering force to the human-centered areas of information studies, which have to date been unfortunately quite siloed apart. In terms of "human-centered areas of information studies," in this book I have mostly discussed information behavior, information literacy, and human–computer interaction, yet surely there are other areas that I am ignorant of. Such is the nature of silos.

The research agenda of information experience is consonant with the iSchool Movement, particularly in how it recognizes and builds upon the conceptual synergies in many different traditional fields and disciplines. According to the movement's vision, iSchools share an interest in the relationships between people, information, and technology. Just as in this book, "information" here is understood broadly, encompassing both physical and digital spaces – from the World Wide Web to museums of natural history, from the artifactual to the experiential

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(Dillon, 2012). Information Schools are characterized by wide-ranging course offerings and faculty with diverse educational backgrounds and research interests (Lili, 2013; Wu, He, Jiang, Dong, & Vo, 2012).

To be sure, the iSchool Movement has been criticized. To give a recent example, Golub, Hansson, and Selden (2017) suggest that becoming an iSchool may be more about branding and symbolism than any practical outcomes, such as in terms of curricular offerings. This particular argument saw a rejoinder raising methodological concerns and making the point that for existing schools, becoming an iSchool is a gradual transformation (Nolin et al., 2018). Other perspectives have observed or questioned the added value of the iSchool marque compared to a traditional department of library and information studies, whether iSchools have a coherent object of study (and consequently what the term *information professional* can mean), and how iSchools are fitting into their university environments (Leazer, 2016; Raghavan & Babu, 2012). Another area of concern is that the ideology of userism (see Suominen, 2007) and the skepticism toward institutions, both endemic to the iSchool Movement, may be problematic for the future of the iSchools (Shaw, 2019).

Of course, these issues certainly warrant further research and conversation. So far, none of them seem insurmountable. Moreover, I can say, albeit anecdotally, that colleagues at a few different iSchools across the United States are observing that they are being sought out on their campuses as partners in multidisciplinary collaboration projects. Time will tell if these projects are successful in the long term. As today's biggest problems require coordination among multiple ways of knowing, and as increasingly our problems are entangled with digital information technologies, an iSchool is a natural ally. I expect that this will continue to become clearer as time goes on.

A large remaining problem for the information field is a communication issue. As a metadiscipline, the information field has proven difficult for outsiders (and even insiders) to understand. Notwithstanding the time dust takes to settle after any big change, I think the iSchool Movement brings clarity (or at least more clarity) to the information field. Perhaps this begins with the mission and brand, but in time it ramifies outward, having real-world effects. Surfacing information experience as a research area at the meeting place of many traditionally defined research areas is one way to support this trajectory.

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