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Theorizing digital experience: four aspects of the infomaterial

Introduction

Theorizing in the information systems field (IS) seems largely stuck in the late 20th century, according to three quite different assessments by thought leaders in the field (Gregor 2006; Mingers 2015; Grover & Lyytinen 2015). Although the issues raised vary –the ontological character of IS, Business School positivism, a 'mid-range' cul-de-sac – the prescribed solutions are in fact reasonably similar: a bolder, fresh approach to the nature of theory in, and thus the foundations of, the field. It is this project – this fresh approach - upon which I embarked some years ago (Kreps 2015; 2018a; 2018b; Kreps and Kimppa 2015; Kreps, Rowe and Muirhead 2020). Specifically, I am interested in finding new philosophical foundations, upon which indigenous theory can be built, within IS. This chapter presents an introduction to this ongoing work. Firstly, I introduce some of the philosophical underpinnings of the new approach, and then give a very brief outline of the notion of 'infomateriality.' This leads into an embrace of Varun Grover's four 'fundamental aspects' of 'the digital' that distinguish it from IT, and how these four aspects can be evidenced in the data gathered in a research project I undertook over the course of 2018, using diary studies to record individual experience of the digital world. The chapter concludes that the 'infomaterial' could offer a philosophical grounding upon which Grover's 'four fundamental aspects' can rest, and that together they represent a powerful philosophical and theoretical tool for understanding the digital world.

As Allen Lee put it in his 2001 Editorial in *MISQ*, "research in the information systems field examines more than just the technological system, or just the social system, or even the two side by side; in addition, it investigates the phenomena that emerge when the two interact." (Lee 2001 piii). Ray Paul echoed this in his 2007 Editorial in *EJIS*: "The IS is what emerges from the usage and adaptation of the IT and the formal and informal processes by all of its users" (Paul 2007 p193). This emergent 'socio-technical' interaction is the space where I believe some philosophical examination might help reveal new means of understanding such phenomena. It is, moreover, (a) more pressing that such new philosophical foundations be sought, because older, 'tried and trusted' understandings don't seem to be getting us very far (Grover & Lyytinen 2015), and (b) more fitting – because the nature of that interaction has changed quite fundamentally in recent years. As Grover depicts it the 'digital' is different from the old world of 'IT,' and needs a different approach (Grover 2018). The relatively recent shift away from a screen-focused experience of the internet, toward one mediated by myriad internet connected devices, some with screens and some without, constitutes a fundamental change in the nature of the relationship between the social and technological systems our field is devoted to understanding. The theoretical paradigms and approaches aligned to Web 1.0 – the read-only web, and to Web 2.0 – the read-write web, must be radically different to understand Web 3.0 – the newly *mangled* 'internet of things and people' (Kreps & Kimppa 2015). But the implications of this 'mangle' (Pickering 1995) run very deep. Orlikowski's ideas for the socio-technical (2002; 2005; 2006), and the relationship of her 'sociomateriality' with the sociological approach of Anthony Giddens (1984) and the ideas of Karen Barad (2007), whilst a good start, in fact merely reveal the great philosophical

vistas ready to be explored at the intersection of technological and social systems (Kreps 2018b). Much more, in short, must be chanced, if indigenous theory in IS is to evolve and have impact not just within but beyond our field.

My own project to discover and develop a fresh approach turns directly to the philosophical underpinnings of the relationship at the heart of information systems – between people and technology - and finds there some key and fundamental questions about the nature of existence.   Now, ontology – stressed by Gregor in her 2006 essay on theory in IS – in its original form of metaphysics, hinges, inevitably, upon the question of *our* existence. This is because *we* are the ones who are asking, and so in the end, this is where we must inevitably start. Therefore, it is in the nature of *experience* that we must begin. Such a view, indeed, goes back as far as Greek philosopher Epicurus (Oates, 1940; Furley 1967), whose unique formulation of the previously weaker notion of 'atomism' rendered it stronger against the criticisms of Aristotle - whose scholasticism was nonetheless to envelop Medieval Europe in circular reasoning for more than a thousand years. Not until Descartes, and perhaps even more fundamentally, Spinoza – one of the great rationalists of 17th century philosophy - did the Epicurean appreciation for the essential importance of the experience of the senses return to the search for knowledge, spawning the scientific revolution (Spinoza 2003; Israel 2002). Yet, as the 18th and 19th centuries of scientific advance unfolded, one question we might usefully ask is, 'Did this return to the testimony of the senses go too far?'

As Gregor relates, describing the early 20th century basis of *positivism* in IS, "At the base of logical positivism is the famous *Verification Principle:* only assertions that are in principle verifiable by observation or experience can convey factual information. Experience was thought to be the only source of meaning and the only source of knowledge." (Gregor 2006 p615). Yet in the next paragraph Gregor depicts the *interpretivist* tradition, quoting Schwandt, as one dedicated to "understanding the complex world of lived experience from the point of view of those who live it (1994 p118)". Clearly, *experience* is important; yet here it is claimed as the basis for two opposing traditions. On the one hand experience gives us access to clear factual information – the testimony of the senses as represented in the metrics of the measurement of external phenomena. On the other hand, it gives us access to the internal subjective and emotional world of sensation – how we are affected by what our senses reveal to us. In both cases it is our experience that is the foundation upon which knowledge is built, yet the two sets of knowledge seem to be opposed to one another: the one focused exclusively outward upon an 'objective' external world; the other focused exclusively inward upon a 'subjective' internal world. The common factor – the *experiencer* – is deemed an epiphenomenal irrelevance in the 'external' world (Thompson 2007 p5), and yet inescapably sovereign in the 'internal' one (Karakayali 2015). Both descriptions – the 'realist' and 'idealist' - of the *experiencer* cannot be correct: they are mutually exclusive.

Much western philosophy – certainly since the 17th century - relies upon the distinction between the objective and the subjective presupposed by the realist, and upon a hierarchy between them, with the politics of our academic institutions (science over the humanities) foregrounding the one over the other, and prescribing what is 'True' and what is 'False' (evidence-based fact over imaginary opinion). Hence the eventual development and victory of verificationism. Yet the voices of those saying that all this goes too far have simply grown louder over the course of the 20th century, giving rise, in IS, to interpretivism, by the end of it. It is, in short, the Enlightenment Project so heavily critiqued by Foucault (1970; 1972) that brought us this disjunction between the objective and the subjective in the nature of

experience. Now, undoubtedly, much of the academic pursuit of knowledge rests upon the foregrounding of 'evidence-based fact' over 'imaginary opinion', and the achievements of the scientific method must be acknowledged as without parallel in human history. Nonetheless, reasoned argument without recourse to evidence-based fact remains a vibrant part of society, let alone the aesthetic, romantic, and delightfully frivolous aspects of life without which it would surely not be worth living!? A good deal of experience, after all, is about enjoyment, entertainment, love, and friendship, all deemed merely meaningless "pseudo-statements" by the Vienna School of logical positivists (Carnap 1932 pp60-61).   As Mingers tells us, in IS, the problem with Business Schools attempting, since the 1960s, to attain academic rigor is that such positivist work is "rigorous in the sense of being highly quantitative and mathematical, but … far from the practical messy problems faced by real managers" (Mingers 2015 p 316).

Now, there is a growing school of thought in the information systems field – including John Mingers - leaning toward 'critical realism' as a philosophical approach through which we might begin to address some of the questions I have just raised. However, this is not the route that I have taken. Crucially, to my eyes, at the join of the personal and the material, where the experiencer is the receiver both of the objective evidence of the senses and the subjective evidence of sensation, there is also an experience of *time* that is different from the time that we measure. Critical realism does not seem, to me, to address this key issue. The time that we measure – as with all measurement – can, in theory, and in calculation, go in both directions. All measurement is reversible, by its nature. Yet of course, except in the novels of H.G. Wells, time is not reversible.

Experienced time, on the other hand, is something that is *lived*, and experienced – by the *experiencer* - as duration. It is, crucially, during the process of duration when *choices* are made, *by the experiencer.* The 'agency of the individual', as this is most often described – for all the (Foucauldian) social constraints of conditioning and interplay, and the physical constraints of material conditions – makes decisions during the unfolding of lived time. The individual agent takes part in key aspects of determination, through such choices. This fact renders existence profoundly *indeterminate,* and our role as choosers in its unfolding existential. This lived time, where free will is exercised, in the words of the great early 20th century process philosopher Henri Bergson, is called the *durée reélle,* an understanding of our experience of time that places it at the heart of a unified appreciation of existence both objective and subjective, an existence in relation to which we are neither epiphenomenal nor sovereign, an existence of which we are a key part, whilst still subject to its core material constraints (Bergson 2005[1889]).

I ground my search for new philosophical foundations on which indigenous theory in IS can be built, therefore, upon the oeuvre of process philosopher Henri Bergson. Dubravka Cecez-Kecmanovic gave a useful introduction to process philosophy in her paper, 'From Substantialist to Process Metaphysics—Exploring Shifts in IS Research' (2016). Process methods are also increasingly popular in organization studies (Langley and Tsoukas, 2010; Poole, Van de Ven, Dooley & Holmes, 2000; Hernes and Maitliss, 2010; Hernes, 2014). In adopting this approach, I am also consciously foregrounding the key importance of the field of IS within the wider transdisciplinary context, as one of the few areas of academic study devoted specifically to an understanding of the interface between 'us' and 'it', between the personal and the material. In IS, moreover, we study this interface in the special circumstances where the material is *manufactured*, and *technological*.   In this foregrounding,

crucially, a key element is an appreciation that there is personal time in the form of *durée*, for 'us', as well as clock time in the sequencing of bits and bytes, for 'it', and our understanding of the multifarious aspects of the relationship must reflect this.   The importance of this shift in understanding, I believe, is, moreover, nothing less than existential, in our present time, as I will describe further in the next section.

Infomateriality

From this philosophical work a new notion has been gradually arising that I am calling *infomateriality* (Kreps 2018a; 2018b; 2019; Kreps, Rowe & Muirhead 2020). It is distinguished from Orlikowski's sociomateriality in that:

> (a) it is not trying to merge two 'opposites' – the social and material – founded, as it is, in an ontology that does not distinguish between them so fundamentally;
> (b) although sharing this process ontology with Giddens' worldview (Giddens mentions "*durée"* as foundational in his introductory remarks (1984 p. 3)), it focuses more upon the physical and the durational, and less upon ephemeral social 'structures';
> (c) it acknowledges (a non-suffocating context of) Foucauldian networks of power relations and the mutual definition of the self in social contexts, against which individual agency must struggle, but whilst at the same time merging such relations with the physical constraints of our embeddedness within natural and built environments, such that the two are not entirely distinguishable for social science on the one hand, and physical science on the other; and
> (d) it acknowledges the key element of human meaning already inherent within 'information' (Checkland 1988 p239; Kreps 2017) as causal (Markus & Rowe, 2018), whilst laying stress upon the anthropogenic shift of digital transformation: that we live in a world we have made and are rapidly remaking (Kreps 2018b).

Infomateriality may be understood, therefore, as a condition of contemporary human societies in which our exchange of information, and the digital tools with which we now undertake that exchange – all the more so in the age of 'lockdown' - have become constitutive of the physical context in which we live. More than simply the instantiation of urban or virtual environments, the means by which we 'wayfind' through infomaterial environments are conditioned by the tools that we use, as much as by the environments themselves. The distinctions between mental and physical have become blurred, the realms interpenetrating to the extent that considering them separately becomes a distraction from clear understanding. The boundaries between Popper's 'Worlds,' as described by Gregor, are blurred in a process-philosophy supported view. She tells us, Popper's "World 1 is the objective world of material things; World 2 is the subjective world of mental states; and World 3 is an objectively existing but abstract world of man-made entities: language, mathematics, knowledge, science, art, ethics, and institutions" (Gregor 2006 p615). World 3, in the Anthropocene (Crutzen 2002), has become constitutive of much of the World 1 that we experience, where more than half the human population (World Bank 2019) live in urban environments ("After water, concrete is the most widely used substance on the planet" (Watts 2019)), and a sixth great mass extinction (Davis et al 2018) and complete reconfiguration of global climate (WMO 2018) is underway. Popper's distinctions between the objective - World 1 - and the mental - World 2 - are blurring by the day, and only even possible when one's philosophical world view persists in ignoring the realities of duration and free will, in the doublethink where mental states are not material whilst at the same time being impacted by the material (in our perceptions) and having impact upon the material (in our choices.)

The philosophical implications of the Anthropocene represent, in short, a foundational challenge to those such as the logical positivists, for whom free will is a part of theological debate.

How this notion of infomateriality may play out in our understanding of digital experience has been the subject of a funded research project which I describe in the next section.

Understanding Digital Events

As a British Academy Mid-Career Fellow, I ran a 12-month project across 2018 entitled *Understanding Digital Events: A philosophical and sociological study of virtual experience in the everyday*. This research - the UDE project - explored analysis techniques by which a philosophical approach based in a study of process philosophy might be incorporated into sociological studies of engagement with digital interfaces, and the techniques of designers and User Experience practitioners. The UDE project built upon my previous work exploring the philosophy of Henri Bergson and how it might be understood today in light of the advent of complexity theory: *Bergson, Complexity, and Creative Emergence* (Kreps 2015), and a growing fear that the products of the information systems field are built upon philosophical foundations that are profoundly anti-environmental and detrimental to human survival, a view expressed in the short polemic, *Against Nature: The Metaphysics of Information Systems* (Kreps 2018).

The project fieldwork consisted in three phases: recruiting participants, managing diary studies and undertaking interviews, and analysis of results. Recruitment was undertaken locally, through word-of-mouth and personal contacts. A former colleague, now retired, was invited to become a participant, and in turn invited members of a community group to which they now belong. Recent and current students at the University were invited - through LinkedIn, or in class - and the manager of a youth group focused on sports fitness, undertaking a separate project with another colleague, publicized the project in the group and helped recruit a number of others. In this way members of the community surrounding the University were drawn into the research, bringing in both those directly connected with it, and those connected only by association.   Sufficient for a small qualitative pilot study, this cohort of participants nonetheless reflected quite a broad cross-section of the local population. Diary studies were undertaken by each of these participants, detailing their mental and physical experiences using digital technologies, and were kept for 4 weeks, 3 entries a week, by most participants. Some of the participants were also invited to a semi-structured interview. To ensure ease of participation, an online web application accessible from any Internet-connected device was created to collect the entries. This combined a number of qualitative and quantitative questions to obtain insight into each participant's daily experiences, identifying their patterns of use and perceptions of digital technologies. Finally, a sub-set of the participants were interviewed, in part to follow-up on points raised in their diaries, and in general to explore further their attitudes to privacy, surveillance, and choice. All this data was then anonymized and imported into NVivo, where I have been able to query it in order to reveal many fascinating insights.

Grover's Four Aspects in the UDE Data

Varun Grover, at the SIGPHIL workshop at ICIS in San Francisco in December 2018, presented a fascinating story of how there has been a distinct shift from a 'world of IT' up until the end of the 1990s, to a 'world of the digital' since the turn of the millennium. He outlined how in fact these are two very different worlds, and the theories developed and used

in the IS field for understanding the world of IT are no longer adequate. The digital, as he outlined, is infrastructural, and subject to a unique economics. There are, for Grover, four 'fundamental aspects' of the digital that render it different from IT: (i) Embeddedness, (ii) Decoupling, (iii) Representation, and (iv) Generativity (Grover 2018). The research undertaken for this chapter involved taking Grover's four 'fundamental aspects,' generating a range of synonyms for each of them, and then querying the data from the UDE project with NVivo's own synonym function, to find comments from the diaries and the interviews that related to each of the four aspects. The rest of this chapter focusses upon this, and what implications it has for the notion of infomateriality.

Each aspect is readily understood with a few phrases (from Grover 2018) and some keywords, as shown in Table 1, and the synonyms brought many candidate comments in the data for each aspect to the fore.

Table 1 – Grover's 'Four Fundamental Aspects'		
Embeddedness	The digital "enhances affordances of physical objects; function is no longer constrained by form".	Synonyms such as Enclose, Contain, Connect
Decoupling	The digital "separates content from (packaging) delivery system; all forms of content can be syndicated".	Synonyms such as Dissociate, Differentiate, Separate, Syndicate
Representation	The digital represents "behaviors and states of people"; there is representation of "experience (time, space, interactions)". The digital enables representation to be enhanced at "various levels of granularity".	Synonyms such as Profile, Symbolize, Express, Embody
Generativity	The digital generates novelty through "networks and people; there is combinatorial complexity and unanticipated innovation".	Synonyms such as Develop, Release, Upgrade, Initiate, Expand, Engender, Create

A key approach to understanding the four aspects, revealed in Grover's presentation in 2018, is to use them to tell stories that link all four. Grover gave two examples:
1. "a device in car (embeddedness) delivered to insurance company (decoupling) can better tap customer behavior (representation) and combine with information - like potholes –to provide new products for customers (generativity)."
2. "Weight Watchers captures information from bar-codes, human health (embedded) delivered through its app/website (decoupling) to represent eating habits (behaviors) and generate new products (through social connections, point system, food delivery)." (Grover 2018)

When queried in the manner described above, the Understanding Digital Events project data revealed many such stories. A sample of just four of them are quoted below, (with the anonymized participant in brackets):

- "Having a device attached to the internet in your pocket is very useful and reassuring in a difficult situation. You can keep up to date with the current situation and find ways round problems" (B2-24)
- "Apart from the use of my mobile I also interacted with my smartwatch mainly to check my activity throughout the day. It helps since I work in an office and I sit at my desk most part of the day I get reminders once an hour to stand up to take a rest and a deep breath but I also try and hit my daily target for calories consumed. I find this activity quite fun." (A3-16)
- "Also today I used my Garmin fitness watch to track my time on a Parkrun. This then links to Strava the website for tracking recording and sharing information about runs [representation] (and rides too if you cycle). Strava is really helpful and easy to use and for a large event like the Macc Parkrun there were 60 or so runners with Strava accounts and you can see how you performed against them. If you run a route several times you can see how your performance has improved (or not). Part of the enjoyment here of course is the flow of endorphins after the run." (B2-20)
- "I'll be travelling this weekend so I used my mobile to check the places where I'm planning to go. I used Google maps and pinpointed several locations. Depending on the traffic and how much time is left I might be able to see them all. The app is easy to use and it will provide live traffic warnings which will help me decide whether or not I will try a different route (sometimes the app actually provides alternatives when there is heavy traffic)." (A3-16)

It is clear that Grover's four aspects can very easily be used to analyze this data. The four quotations from the data are repeated, below, with the four aspects in square brackets picking out the embeddedness, decoupling, representation and generativity in each quote:

- "Having a device attached to the internet in your pocket [embeddedness] is very useful and reassuring in a difficult situation. You can keep up to date [decoupling] with the current situation [representation] and find ways round problems [generativity]" (B2-24)
- "Apart from the use of my mobile I also interacted with my smartwatch [embeddedness] mainly to check my activity [decoupling] throughout the day [representation]. It helps since I work in an office and I sit at my desk most part of the day I get reminders once an hour to stand up to take a rest and a deep breath but I also try and hit my daily target for calories consumed [generativity]. I find this activity quite fun." (A3-16)
- "Also today I used my Garmin fitness watch [embeddedness] to track my time on a Parkrun. This then links to Strava the website [decoupling] for tracking recording and sharing information about runs [representation] (and rides too if you cycle). Strava is really helpful and easy to use and for a large event like the Macc Parkrun there were 60 or so runners with Strava accounts and you can see how you performed against them. If you run a route several times you can see how your performance has improved (or not) [generativity]. Part of the enjoyment here of course is the flow of endorphins after the run." (B2-20)
- "I'll be travelling this weekend so I used my mobile to check the places where I'm planning to go [embeddedness]. I used Google maps [decoupling] and pinpointed several locations [representation]. Depending on the traffic and how much time is left I might be able to see them all. The app is easy to use and it will provide live traffic warnings which will help me decide whether or not I will try a different route (sometimes the app actually provides alternatives when there is heavy traffic) [generativity]." (A3-16)

Discussion

One purpose of this chapter, therefore – to show in primary research data that Grover's four fundamental aspects can be accurately used to analyze narratives of digital experience – I believe is adequately shown in just the four examples above. The main purpose of this chapter, however, is to show that the notion of the 'infomaterial' may offer a philosophical grounding upon which Grover's four 'fundamental aspects' can rest. Together, I believe, they may represent a powerful philosophical and theoretical tool for understanding the digital world.

How then, does this play out? Table 2 shows how the four aspects sit within the context of the notion of infomateriality.

Table 2 – Grover's 'Four Fundamental Aspects' and Infomateriality		
Embeddedness	the enhancing of the affordances of physical objects by the digital	• Physical objects (digital devices) external to the experiencer in perception become internally coherent with the play of agency when the experiencer makes choices through interactions with these digital devices. • In the context of the digital devices embedded both in our material environment and in those very networks of social and power relations, the notion of embeddedness sits right at the core of the process-philosophy underpinning of the infomaterial: digital devices become limbs.
Decoupling	whereby all content can be repurposed and repackaged	• Emphasizes – and instantiates - the relationality of process philosophy: that the universe we inhabit is not one of 'fixed things' external to us, but one of continuous flow in which the objects that we perceive are but temporary eddies, brief clusters of energy in a quantum continuum. Molecules and atomic particles are constantly on the move and being exchanged. Almost every cell in our bodies is replaced over cycles as short as a few days or as long as a few years. • Celebrated quantum physicist Louis de Broglie wrote that Bergson was "Bohr before Bohr, Heisenberg before Heisenberg" in his depiction of a universe of flow forty years before quantum mechanics (de Broglie 1969, p. 47; Kreps 2015; 2018b).
Representation	whereby the digital represents experience	• Brings the internal into the external, displays the durational states of the experiencer in a range of facets both at macro and at micro levels, personal and agglomerate. • The 'profile' and the 'digital footprint' of the individual. • The calculations of the artificial intelligence algorithms by which our 'behavioral futures' are

		marketed, meanwhile, rely upon the agglomeration – the macro-view of our many wishes, relations, preferences, and whims – in sum (Zuboff 2019). • Our own self-worth, shockingly, seems increasingly dependent upon the number of 'likes' each imprint accrues in the digital 'front room' representing our selfhoods, unless our own sense of purpose can be strengthened (Rowe 2018). The more automated we become, the more the correlation between 'likes' and self-worth is strengthened (Burrow et al 2017).
Generativity	whereby innovations emerge from embedded, decoupled representations	• Probably the key differentiator between the 'world of IT' and the 'world of the digital.' • New ways of doing things, unforeseen outcomes, and whole new processes are emerging, and there is a pressing need to understand how best we, as aware human beings, should navigate this new realm. • The accent upon the *experiencer* in infomateriality renders the digital political.

Conclusion

Infomateriality, therefore, I argue, offers a Type 1 IS theory, in Gregor's terms - "theory for analyzing" (Gregor 2006 p620) – and an attempt, in Grover's terms, "To engage in two-way interaction between digital phenomena and abstract theory" (Grover 2018). Infomateriality makes *better* use of the notion of *durée* regarded as foundational by Giddens, and therefore also has deeper roots and clearer philosophical positions than Barad or the apolitical approach of actor-network-theory. The reality of free will at the nexus of the personal and the material in fact underpins – and could greatly strengthen - these other theories.

Key, therefore, to an understanding of the impact of the condition of infomateriality on human societies are:

1. If free will is as key to the nature of consciousness and the unfolding of reality as process philosophy suggests, then our digital experience can be regarded as positive inasmuch as it enhances or makes or allows space for us to be sufficiently mindful and reflective to reach decision points that instantiate and enact free will. Conversely, our digital experience can be regarded as negative inasmuch as we are rushed or pressured into accepting or acquiescing to situations that, given sufficient time, we would not have chosen, or are in effect tricked by hidden processes into activities and situations we would not have chosen had we been aware of all the facts. The age of surveillance capitalism, in other words, in which the digital has arguably been hijacked by forces of capitalist oligarchy, is inescapably negative: it seeks to *automate* us (Zuboff 2019).

2. The relationality of a world understood from a process philosophy approach, in which the multiple interrelationships of a shifting universe become the focus, in contrast to the distinctiveness of 'fixed things,' is redolent of a world understood in terms of

actor-network-theory.   Process philosophy understandings can indeed be read as underpinning the notion that 'objects' can be understood as '*actants*.'

3. Technological artefacts in our lives, therefore, need to be seen - to continue the theatrical metaphor inherent in the term, '*actant*' - as *co-directors* of our lives (Coeckelbergh 2019). The choices, in other words, that we make, when exercising our free will, are constrained and circumscribed not merely by the fundamentals of gravity, body shape, atmosphere, etc, but by the (digital) tools we ourselves have made.

Infomateriality, then, takes a position in favor of Slow Tech (Patrignani & Whitehouse 2014; 2018) and an ethical approach to our interactions with technology – promoting our ability to choose, and therefore solidly against the automation of our behavior through the hooks and nudges (Eyal 2014) that feed into the "behavioral futures market" that trades in our data in pursuit of behavioral modification for commercial gain (Zuboff 2019 p8). Its appreciation of the Anthropocene places it firmly in favor of Green IT/Green IS/Sustainable ICT. It is profoundly aligned with Tech for Good. It is also, I would argue, a far better means of understanding the nature of the digital, than any of the theories devoted to understanding the world of IT.

The data from the Understanding Digital Events project, moreover, clearly both supports Grover's ideas, and underlines the difference of digital to IT. As Grover urges us, we should "engage with theories that do NOT strictly fit with current conceptualization of the digital phenomena," (Grover 2018) and I have argued in this chapter that my notion of 'infomateriality' is an attempt to conceptualize this new milieu that bears serious consideration in the IS field. The interface of the personal and the technological is a philosophically rich nexus, and Allen Lee's "phenomena that emerge when the two interact," (Lee 2001 piii), and Ray Paul's IS that "emerges from the usage and adaptation" (Paul 2007:193), point us towards greater understanding of the nexus as a key aspect of our contemporary existence.

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