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Wither Interpretivism? Re-interpreting interpretation to fit a world of ubiquitous ICT

Completed Research Paper

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Abstract

Interpretivism in IS emerged in the 1980s. While at the time it presented an important alternative to positivism, the world has changed significantly since then, raising questions about its efficacy for IS relevant to the emerging world of ubiquitous IT. Some have suggested it should be abandoned because of its dualist inheritance from positivism. In this paper we explore a less radical approach of replacing the notion of interpretation at the heart of the approach with a non-dualist alternative. We explore how its problematic commitments to dualism, mentalism and individualism might be overcome by re-interpreting 'interpretation' using the holistic notions of 'equipment', 'world' and 'being-in-the-world' drawn from recent non-dualist work in IS. Such an 'evolved' interpretivism would retain key elements of the received view but repair others, allowing the existing acceptance and knowledge of interpretivism to be leveraged rather than replaced.

Keywords: Interpretivism, Positivism, Dualism, Ubiquitous IT, Non-dualist Ontology

Introduction

Interpretivism is an established research approach in the Information Systems discipline (Walsham 2006). It emerged in the 1980s with the advent of organization-wide information systems when IS researchers newly discovered the end-user as an important factor in explaining pressing new phenomena, such as a lack of IT adoption, or unexpected outcomes from IT applications in organizations. While interpretivism at the time presented an important alternative to established positivist approaches, the world has changed significantly since then. In a world of ubiquitous IT, where IT has increasingly become a normal accepted and often unquestioned part of work and life, not a novelty to be first implemented and then adopted, questions now arise about its efficacy.

Because interpretivism is largely formulated as a rejection of positivism it inherits certain philosophical assumptions that have now become problematic, most notably its dualist underpinnings. As a reaction, it has recently been suggested that the IS field should move “beyond interpretivism” (Introna et al. 2018) and adopt alternative non-dualist approaches, such as agential realism (Barad 2007), performativity (Introna 2013) or process philosophy (Cecez-Kecmanovic 2018). While such approaches without doubt enrich the IS field, we ask in this paper, whether and how interpretivism might be evolved rather than outright rejected, specifically by re-interpreting the notion of interpretation itself in a non-dualist way.

To this end we first examine how the established form of interpretivism fitted the emerging IS problematic when it emerged in the 1980s. We show that interpretivism connected well with the core IS concepts – IT-user, IT-artefact, and IT-task – that emerged to make sense of the new IT world of the time that included the agency of the end-user for the first time. We then demonstrate why the established form of interpretivism no longer fits the emerging phenomena that are of interest to IS now. As the traditional IS conceptualization of *a priori* separable entities - user, artefact and task - increasingly fails to account for the most basic empirical phenomena of work and everyday IT use (e.g. Orlikowski and Scott 2008b), interpretivism equally loses its efficacy due to the foundation it inherited.

We locate the problem in the deep commitment of the received notion of interpretivism to dualism, mentalism and individualism (as articulated more fully later in the paper). We suggest that each of these commitments might be overcome by reinterpreting the notion of interpretation *itself* using non-dualist approaches already available in IS. Specifically, we argue that the holistic notions of ‘equipment’, ‘being-in-the-world’ and ‘world’ from Heidegger’s existential phenomenology (Heidegger 1962; Riemer and Johnston 2014; Riemer and Johnston 2017) can provide an alternative to dualism, mentalism and individualism. We thus show that interpretivism can be evolved, by changing the notion of interpretation, while retaining many of its attractive core convictions.

The benefit of such an evolutionary approach would be that a now considerable acceptance and understanding of the interpretivist approach could be leveraged to research emerging IS phenomena, such as social media and new forms of mobile work, where the dualist separation of self from IT increasingly makes little sense to ‘digital natives’ (Wang et al. 2013), without the need to master an increasing array of philosophical positions challenging interpretivism in total.

We begin with an overview of interpretivism as portrayed in seminal IS papers and research methods textbooks used in the field. Subsequently, we compare the world of the 1980s with today’s world to demonstrate how changes in the phenomena and core IS problematics in the two eras have created the misfit diagnosed above. We trace this misfit to the dualism, mentalism and individualism of its notion of ‘interpretation’ and propose an alternative. We conclude by discussing which commitments of interpretivism would be replaced and which retained, and what this would imply for IS philosophy and research practice.

Interpretivism: A Representative Account

In this section we provide a representative account of interpretivism as a research position. We do not claim to present an exhaustive and systematic literature study. Instead, we assume the position of a student of Information Systems who wants to learn about research approaches and methods as she enrolls herself into the research practices of the field. Hence, we provide an account of how interpretivism is most commonly portrayed in seminal IS papers (Lee 1991; Orlikowski and Baroudi 1991; Walsham 1993; Butler 1998; Klein and Myers 1999), as well as in research methods textbooks commonly used by IS scholars (but not necessarily written by authors with a background in IS).

First, we concentrate on those conceptual IS papers that explicitly introduce interpretivism as a research approach, and that are commonly referred to in interpretivist IS research papers as authoritative sources. A comprehensive literature review of IS papers that employ interpretivism as their research lens is beyond the scope of this paper. Second, we analyzed a total of seven typical research methods textbooks, found on bookshelves in our own department, which has long held an interpretivist orientation. We find that these textbooks provide a good account of how interpretivism is commonly introduced; these textbooks also very much agree in their portrayal of interpretivism (and positivism).

Moreover, we note that interpretivism is by no means an IS invention; it emerged in parallel in the social sciences and other business disciplines, from which IS commonly sources its textbooks. The lineages of interpretivism can be traced to a number of roots, such as Max Weber’s notion of “an interpreting (“*verstehenden*”) sociology” (Weber 1981, 151), the works of cultural anthropologist Geertz (Geertz 1973), of sociologist Alfred Schutz (1954) on theorizing in the social sciences (Lee 2004; Lee and Hovorka 2015), and Berger and Luckmann (1967) on the *social construction of reality*. Interpretivism is also closely aligned with *hermeneutics* (Klein and Myers 1999) which evolved from the work of Gadamer (1989) who employed it to the problem of text interpretation.

Finally, a frequently cited foundation for interpretivism in business and IS is Burrell and Morgan’s (1979) seminal book on research paradigms. The authors are not only credited with introducing the term *interpretive paradigm* to organizational discourse (Klein and Myers 1999), but also with formulating interpretivism in opposition to positivism (as “anti-positivism”) using the widely employed *objective-subjective dichotomy* (Orlikowski and Baroudi 1991; Lee 2004; Becker and Niehaves 2007).

Overview: Interpretivism as anti-positivism

What stands out is that interpretivism, in both seminal IS papers and textbooks, is introduced not as a free-standing position, but generally as an *op-position* to positivism, in that it is said that “interpretivism

emerged from critiques of positivism and its limitations in relation to social science research” (Quinlan 2011, 98). In the following we will show how interpretivism is defined in direct opposition to the various characteristics ascribed to the positivist position.

It is worth noting that what is commonly known as “positivism” in IS and adjacent disciplines is largely an amalgamation of different philosophical positions, such as scientific realism, logical positivism, empiricism and behaviorism. While it is not our intention here to point out the incoherencies that might result from such a fusion of positions¹, we simply note that positivism, due to this heritage, is commonly described as “the application of the scientific model to the study of the social world” (Bryman and Bell 2003, 15), for the purpose of “theorising definite ‘laws’ in the same way as the physical sciences” (Saunders et al. 2012, 137).

Table 1 provides a juxtaposition between positivism and interpretivism as is typically found in seminal IS texts and popular textbooks. Note that the two positions are commonly distinguished using a number of different criteria or dimensions, the most common ones being 1) ontology: assumptions about the nature of reality and the world, 2) epistemology: assumptions about the nature of knowledge, 3) methodology: assumptions about the aims and nature of the research process.

Table 1. Composite account of interpretivism, as opposed to positivism (adapted mostly from Collis and Hussey 2009; Saunders et al. 2012)		
Dimension	Positivism	Interpretivism
Ontology (nature of reality)	Reality is objective and exists independently of any observer’s knowledge of it.	Reality is subjective, multiple, and socially constructed; it depends on perception and interpretation of the world.
Epistemology (what constitutes valid knowledge)	Only observable phenomena can provide credible data and facts. Knowledge is objective and independent of perception.	Focus is on the subjective meanings that actors attach to what is observable, and which influences their actions. Knowledge is subjective and depends on interpretation.
Methodology (assumptions about the research process)	Discovery of independently existing regularities or causal laws in behaviours, through controlled experiments, surveys and other methods that allow for generalization.	Interpretation of research subjects’ interpretations of the world (hermeneutics), to include subjective meaning as a factor in explanations of phenomena; facilitated through high-access methods such as case study and interviews. Researchers, as interpreters, bring their own context and values.

Ontology

Textbook positivism is based on *substantivist, realist* ontology, a view that holds that 1) the world consists of self-sufficient substances or objects with properties and 2) that reality is objective and independent of any human subjects observing it.

By contrast, interpretivism respects the “differences between people and the objects of natural sciences” (Bryman and Bell 2003, 16), in that “interpretive theorists believe that reality is not ‘out there’ but in the mind of people; reality is internally experienced, is socially constructed through interaction and interpreted through the actors, and is based on the definition people attach to it. Reality is not objective but subjective, reality is what people see it to be” (Sarantakos 1998, 36). What underpins interpretivism is thus the “belief that social reality is not objective but highly subjective because it is shaped by our perceptions” (Collis and Hussey 2009, 57) in that “we each interpret the world in our own way, and through our individual and unique interpretations” (Quinlan 2011, 96). Note that this view does not deny the existence of a world “out there”, but asserts that “reality” must always be understood from the point of view of the research subjects:

“This school of thought takes the position that people, and the physical and social artifacts that they create, are fundamentally different from the physical reality examined by natural science.

¹ We are aware that many scholars who see themselves as positivists would not fully identify with the often quite stereotypical accounts provided in textbook literature. A discussion to this effect can be found in Weber (2004). While the same can be said of interpretivists and respective textbook accounts, we believe it is nonetheless useful to provide a typical characterization as a way to expose the tacit assumptions that underpin each position.

Unlike atoms, molecules, and electrons, people create and attach their own meanings to the world around them and to the behavior that they manifest in that world.” (Lee 1991, 347)

Epistemology

The epistemological position that underpins textbook positivism combines a form of *logical positivism*, which holds that the perception of the world and theorizing about it can be held separate, which guarantees that knowledge is objective, and *empiricism or behaviorism*, which stresses that only observable phenomena provide credible data or facts from which such theorizing must proceed. Termed “scientism” (Klein and Lyytinen 1985), this view thus postulates that the social sciences must follow the natural science model (see Beck 1949) in undertaking research. It should thus strive to create objective knowledge. This implies that research is essentially value free and assumes a *view from nowhere* (Nagel 1986).

By contrast, interpretivism holds that, once the nature of the human subject as an active participant in phenomena is recognized, a new understanding of knowledge acquisition and research is also required. Simple observation cannot fully make sense of social phenomena because people’s behavior is influenced by how they view the world. Researchers must thus strive to uncover the meaning of people’s experience: “Interpretive research (...) attempts to understand phenomena through the meanings that people assign to them” (Klein and Myers 1999, 69). Consequently, interpretivism takes the position that the meaning people attach to objects and events in the world plays an important role in their behavior and actions. Interpretivism thus studies a different form of causation, one that aims to explain the connection between a subject’s interpretation of the world and their actions:

“Meaning and intentional descriptions are important, not merely because they reveal subjects’ states of mind which can be correlated with external behavior, but because they are constitutive of those behaviors” (Orlikowski and Baroudi 1991, 13).

Methodology

Textbook positivism aims to discover and theorize the mechanisms and universal laws that govern observable patterns in human behavior. Working on a strict separation between certain observable effects (dependent variables) and theorized factors (potentially) causing these effects (independent variables), the gold standard for carrying out positivistic research is the controlled experiment, while correlative research methods such as surveys are also deemed acceptable.

By contrast, “interpretive social science has the task of searching for the systems of meaning that actors use to make sense of their world” (Sarantakos 1998, 38). This puts the researcher, not in the role of an observer of reality as postulated by positivism, but in the role of an interpreter: “The researcher is interpreting other people’s interpretations in terms of the theories and concepts of the social researcher’s discipline – studying the social phenomenon as if through the eyes of the people being researched” (Matthews and Ross 2010, 28). As a result, “the researcher is part of what is being researched, cannot be separated and so will be subjective” (Saunders et al. 2012). The researcher’s own active role has to be acknowledged accordingly. As such, interpretivism is typically associated with more *involved* research approaches such as case studies or ethnography, and data collection methods that provide access to people’s meaning (Bryman and Bell 2003). Interpretivism thus favors data collection methods that provide access to meaning through language:

“The interpretive position asserts that the language humans use to describe social practices constitutes those practices. Thus, understanding social reality requires understanding how practices and meanings are formed and informed by the language and tacit norms shared by humans working towards some shared goal” (Orlikowski and Baroudi 1991, 14).

Why Interpretivism made sense in the world of the 1980s

“The 1980’s could go down as the decade of the user’: Editorial in Computer New July 17, 1986 (Friedman and Cornford 1989, 171).

In the practice of applying computer technology to business problems, two significant developments occurred at about the same time (the 1980s) that interpretivism was becoming influential among academics who studied this area. They were the emergence of the organization-wide information system, and a new

kind of employee who was essential to that new vision – the computer ‘end-user’². In the following we first describe the world of computing in that era. We will then argue that the appearance of the end-user as a relevant entity is directly linked to the formulation of the dominant conceptualization of IS. This conceptualization, and the realization that end-users play an important role in the successful application of computers in organizations, made interpretivism increasingly relevant for IS research because it acknowledged the agency of the end-user and their active role in the process of adoption and use of IT.

Empirical observation: the end-user emerges in the 1980s

The emergence of both the *information system* and of the *end-user* can be traced to on-going innovations in computer hardware and software that had their roots in earlier decades (Friedman & Cornford, 1989, Chap. 9) but now made computing more affordable and useful, consequently providing scale for mass computer sales³. First, continued decrease in the cost of computer hardware (both central processing units and peripheral devices) meant that computerization was not just viable for the largest organizations (governments, financial and research institutions) as in previous eras, but now for a larger cohort of smaller, more diverse businesses (retailers, distributors and manufacturers). But in addition, new developments in computer architecture (so called mid-range or mini-computers), operating systems (notably, multi-processing) and peripherals (random access storage disks and CRT-based terminals) led to new modes of interaction of people with the computer (Grudin 1990), particularly through terminals that could be located at sites outside the ‘computer room’, in places where the work that the computer supported actually took place.

Changes in software design paralleled this development (Friedman & Cornford, 1989, 115). More productive software development tools (3rd and 4th generation languages, and database management systems) and methodologies (structured analysis and design) led to a software industry developing industry-specific turn-key suites of applications (later called ‘enterprise systems’) to support a range of data-intensive organizational tasks, to track business transactions from initiation to completion, and to aggregate and present information about these events for decision-making (Sprague and Watson 1979). Specific selections of these applications were presented via menus to a new kind of computer ‘operator’ who was located at a terminal in the work area where the tasks supported by the menu of applications were actually performed. These computer ‘end-users’ occupied a specialist, largely clerical, role within the functional area, but because of new user-friendly program and interface designs, they did not need to be computer specialists as such (Friedman & Cornford, 1989, 183). These hardware and software developments gave the end-user the experience of interacting with a selection of task-specific software ‘tools’ running on the terminal ‘artefact’ located in the actual place of work, even though the programs actually executed on a central shared CPU and accessed a single shared database. In this way computing had left the computer room and entered the workplace, creating the end-user role.

The movement of information processing and consumption to more distributed regions of the organization also led to a new conception of the relation between information technology and work. The end-user at a computer work-station, accessing and updating a central database, became a key component in a computer-supported distributed organizational information *system*, as opposed to the centralized electronic data processing *task* that computers had supported in the batch-processing era of the 1960s to 1970s (Sprague and Watson 1979). The new idea was that information technology made it possible to maintain a virtual informational ‘model’, or representation, of the actual work-system (Weber 1997), and this ‘information system’ not only allowed managers and end-users to work smarter as a result of the information provided *about* the work, but also allowed information on the progress of the work to be gathered as a *by-product of* the work (Zuboff 1988), rather than *in addition to* the work.

The arrival on the business scene of the Personal Computer in the middle of this period continued the movement of computing to end-users. While microcomputers became available in the mid-1970s, they initially had little influence on mainstream business computing because of their stand-alone nature and lack of standardization. However, when IBM entered this market the brand imbued this formerly hobbyist item

² The term ‘end-user’ here refers to individuals who directly interact with the system as part of work, in contrast to ‘user’ which has multiple connotations (See Friedman and Cornford 1989, 185).

³ Our main source for this section is (Friedman and Cornford 1989). Additionally, one of the authors worked as an IT professional in this period.

with business legitimacy, particularly after the IBM PC AT (286) model, featuring hard-drive, IBM terminal emulation and the DOS operating system, arrived in 1984 (IBM 2019). Initially, they were largely used for stand-alone applications (spread-sheeting and word-processing) because of their incompatibility with other hardware and databases (Friedman and Cornford 1989, 232). However, they continued the movement of computing to the actual place of work. The feasibility of non-IT staff to create their own computer applications with PC tools led to more knowledgeable and demanding end-users and ultimately to the phenomenon of end-user computing (ibid., 281). At the same time, it created friction with centralized IT functions that saw end-user computing as a threat to the integrity of the organization-wide information system (ibid., 283). This tension was not fully resolved until networking of PCs with servers through local area networks, and later the Internet, matured in the next decade.

Despite the emergence of these important new ways of conceiving computerized work, some things remained largely the same as in earlier eras. Most people still had very little active engagement with computers, and if they did, it was almost certainly in the context of work or education. Those who did interact with computers at work were generally selected for their aptitude for this new kind of work. What they were able to do with the computer was highly circumscribed by their work role, and by the access they were granted to the capital intensive and specialized computing technology that underpinned the predesigned information system they served. Finally, this information system was still ‘owned’ in the strongest sense by business managers and systems developers who paid for it and created it. While its input/output interfaces spread from the computer department throughout the workplace, any system ‘use’ was still largely determined by managerial needs in a top-down way.

IS conceptualization: user, artefact and task as core concepts

Given these changes in computing, IS researchers in this era encountered a new kind of organization-wide information system, a socio-technical system that comprised computing resources (hardware and software), as well as an increasing number of computer end-users performing work tasks with the help of specific software tools, no longer merely a computer ‘machine’ operated by specialist technicians.

This change brought with it for the first time a focus on the role of the ‘end user’. Now the research subjects studied by IS were no longer just managers as the sponsors and main beneficiaries of ‘computerization’ but also employees who used the computer in *their* workspace. It was this change in computing which gave rise to the foundational IS concepts of IT-user, IT-artefact and IT-task (Benbasat and Zmud 2003).

Importantly, IS researchers still aligned naturally with the perspective of those key actors who had the greatest stake in, and control over, the relation between IT and organizing at that time: information technologist, senior business managers and incumbent management scientists. These actors gathered around IT as a high-profile, utopian – that is rational – solution to business problems. They were the key figures whose agency affected the phenomena IS researchers studied - defining the material, social and intellectual dimension of the problem of “design and use of IT” (IS as defined by (Nissen 1985)).

Yet increasingly managing with the new organization-wide information system was no longer simply a matter of having input to the design of an overarching computerized control system, but now had technical *and* social dimensions. With this came an explicit recognition of the role of the user who uses the IT artefact to accomplish particular IT-tasks. The emergence of the end-user subsequently set the problematic of early IS research, such as the realization that the expected benefits of IT could only be assured if the new computerized tools became widely accepted among those tasked with doing their work with the computer (Davis and Bagozzi 1989).

Interpretivism takes hold because it acknowledges end-user agency

In the wake of these developments, a stream of empirical research revealed unexpected outcomes of IT implementations in organizations (Orlikowski 1991), showing that computer workers would use their tools in ways that were not intended by IT designers or business managers who sponsored these systems. Termed “unfaithful use” (DeSanctis and Poole 1994) this realization pointed to the fact that IT-artefact and its users interacted in complex ways to bring about organizational outcomes (Orlikowski 1992). This brought acknowledgement of both the interpretive flexibility of the artefact (Bijker et al. 1987), and how users appropriate (not merely accept) technology into particular social contexts (DeSanctis and Poole 1994). Hence, a new recognition that IT was not merely a pre-given system but was amenable to interpretation required

the discipline to engage with the nature of organizational reality and its social construction, as end-users interpreted the artefact and what it was for in different ways thus causing unintended outcomes.

These developments reveal why interpretivism showed great fit with the emerging IS research problematic of the time, which was to explain how and why IS brought about outcomes that were unintended and unexpected by those promulgating its use in organizations:

- 1) Unlike positivism, interpretivism acknowledged the agency of the individual end-user, as a *thinking subject* with an active role in interpreting IT and thus in the social construction of organizational reality (ontology);
- 2) Interpretivism recognized that in order to fully understand the effect of IT on the organization, the researcher had to gain access, through *interpretation*, to the individual IT-user-subject's own interpretations of their use of IT-artefacts for IT-tasks (epistemology);
- 3) Interpretivism stressed that research could not be done at a distance but had to embrace *rich methods of enquiry* which broke with scientism and traditional methods prevalent in management science from which IS had recently split (Hirschheim and Klein 2012) (methodology).

Why Interpretivism no longer fits today's world of ubiquitous IT

“While in the past, users' acceptance and training might have been important issues in IS research, these issues will become irrelevant to the emerging generation of users for whom the notion of technology acceptance will be taken for granted.” (Yoo and Gothenburg 2010, 217)

We have demonstrated that the emergence of interpretivism in the late-eighties reflected changes in the world of IT at the time, most notably the emergence of the organization-wide information system as a socio-technical entity, and with it the role of the 'end-user' who became central to understanding pressing managerial issues at the time. We will now fast-forward to the present day and ask the question “Is interpretivism still adequate for making sense of the world of IT today?”

Our analysis will mirror the structure of the previous section. We begin with an account of today's world in which IT has now become ubiquitous, an infrastructure for working and living. We then show how the traditional IS concepts - user, artefact and task - increasingly fail to account for emerging phenomena of interest in this new IT world. This leads us to argue that interpretivism in its current form loses its efficacy in dealing with such phenomena. We locate the problem in key conceptual commitments – dualism, mentalism and individualism – that the position inherited when it first emerged in IS.

Empirical observation: IT has become infrastructure for work and life

Clearly the role of IT and information in business (and everyday life) has changed dramatically since the emergence of organizational information systems in the eighties. While a discussion of how we got to the present world of computing is beyond the scope of this paper (for this, see Friedman and Cornford 1989; Hirschheim and Klein 2012), we will describe and compare today's world with the world of the 1980s. This will give the basis for our argument that the traditional IS conceptualization, and with it interpretivism, are increasingly ill-equipped to deal with contemporary IS issues and the world of ubiquitous IT.

First, IT itself has changed radically. Today people seldom interact just with the device in front of them, or with a box this is wired to, but with a deep ecosystem of geographically distributed and networked IT beyond their device, organization and even country (Tilson et al. 2010; Kallinikos et al. 2013). Most of this complexity is hidden from a user. As a result, interaction with IT now occurs in a thinner and more transparent surface layer over this deep IT ecosystem. Graphical interface metaphors, mobile and wearable devices, and ubiquitous sensing and data transfer, have all transformed human-computer interaction (Tilson et al. 2010; Grudin 2017). This contrasts markedly with the world of the eighties when computing was made available to end-users for the first time through computer terminals, and later PCs. While 'the computer' was clearly identifiable back then, computing today has dissolved into a diffuse infrastructure of services accessed through a variety of devices, such as smartphones, tablets, and computers that are increasingly mobile. As a result, the identification of IT as a definite computing 'thing' is now often difficult.

Second, work carried out with IT has also changed significantly. While the original conception of computers as fast data processing machines is still central to the high-volume transaction processing applications

underpinning financial and commercial systems as a 'deep structure' that converts human behavior into aggregated information, a new conception of IT as media for communication and collaboration (Watson-Manheim and Belanger 2007) underpins a plethora of new peer-content business applications such as Enterprise Social Media (Leonardi 2015). Moreover, as IT spread beyond organizational boundaries, there has been a continued transformation of the nature of business and the boundary between work and non-work life (Bodker 2016), supported and partly brought about by these new IT-based communication and collaboration technologies. New conceptions of work now complement traditional industrial production models in the form of knowledge work (e.g. Schultze and Boland 2000), organized around flexible teams working in geographically distributed locations coordinated through IT (e.g. Majchrzak et al. 2000). This contrasts markedly with the world of the eighties when the computer was used for clearly delineated IT-tasks exclusively encountered in the context of organizational information processing. Today, work in many professions is inexorably underpinned and constituted by IT. In that sense IT is now often the 'milieu' amid which work takes place, not merely a tool used *for* work.

Finally, the relationship between IT and business management has changed as well. Over the past decades radical changes have occurred to the cost and usability of IT hardware and software. IT today is no longer confined to a select few 'end-users' in business but is available and used by almost everyone, at work and at home, at least in developed countries (Yoo and Gothenburg 2010). As a result, how IT fits into the task of managing a business presents quite differently. For the most part, IT today is not treated as a 'solution' to a definite problem, to be first implemented by IT departments and then adopted by business users in order to do their jobs, but as *already-implemented infrastructure* that must be appropriated in locally meaningful ways to best organize business practices. Moreover, many IT services are now easily available to everyone via cloud services, which challenges the role of IT management as the sole provider of IT. Finally, business managers today rely heavily on IT for their own work. This contrasts markedly with the world of the 1980s where top and middle managers resisted interacting directly with computers, as using keyboards or querying data were stigmatized as trappings of clerical work, left to lower levels. For them, the place of IT in managing the business was not conceptually distinct from the place of any other piece of capital-intensive plant – it was left to experts (the IT function) to ensure it was implementation and fully utilized by designated IT-users. However, in today's world of ubiquitous IT, the distinction between IT management and business management is increasingly blurred, because, as work is increasingly underpinned and defined by IT infrastructure, distinctions between work and IT are no longer clear cut either. In this world both IT and business managers are now concerned with shaping and managing IT-enabled work *environments*, while management itself increasingly happens with the help of the same IT.

As a result of these developments, rather than being a novel object entering the world of work and organizations, to be implemented and accepted, IT today has become normal, underpinning in often seamless and transparent ways much of what we do both at work and at home. Using IT (e.g. as smartphones) has become part of what it means to be a person in modern societies. For an entire generation of so-called 'digital natives' (Wang et al. 2013) the separation of self from IT, as captured in 'user' and 'use', no longer makes any sense at all.

IS conceptualization: core IS concepts no longer fit a world of ubiquitous IT

The net effect of the technological and organizational changes described above is a blurring of the distinctions that underlie the core IS concepts of IT-user, IT-artefact and IT-task. Firstly, interacting with IT is now *normal* and not associated with particular environments or specialist roles within organizations. So, both the 'use' of IT as a particular activity, and the 'IT-user' as a particular role - implying a certain skill-set and hierarchical position - no longer create useful distinctions in the new organization, particularly between manager and end-user or information producer and consumer.

Secondly, IT devices that people interact with are neither tools for specific tasks nor self-contained and clearly identifiable entities. An iPad taken in isolation and from a narrow technical point of view might still be understood as an 'IT-artefact'. Yet this same iPad when in use might be a system interface, a portal to a conversation, or a note pad in a meeting, depending on the context. In each case, the bounded iPad 'artefact' in my hand is merely the tip of an iceberg of invisible distributed hardware and software. Hence, the category 'IT-artefact' no longer picks out any practically useful class of self-sufficient objects in this new world.

Finally, the new organization of work and the role that IT plays in it, no longer allows a particular task to be labelled specifically an 'IT-task'. Acts of entering data into 'the system', or extracting and using

information from it, are now so routine and hidden that it is no longer useful to distinguish them as a specific kind of task, assigned to particular roles, and requiring particular skills. When work is defined by and inextricably bound up with the use of IT, it becomes impossible and analytically fraught to distinguish between artefact and task.

As a result, IT is now a pervasive infrastructure that is largely withdrawn from attention as actors engage in collective business practices that have *already* been deeply transformed and defined by IT (Yoo and Gothenburg 2010). In short, cutting up encounters with IT in organizational life using the traditional IS conception that its three core constructs represent actual and relevant entities in the world no longer gives much purchase on the phenomena at the forefront of IS. Accordingly, an emerging stream of research (Orlikowski 2007; Schultze and Orlikowski 2010; Scott and Orlikowski 2014) has pointed to the ontological inseparability of the core IS entities (Riemer and Johnston 2017), given that IT, work tasks and people's professional identities are increasingly defined in relation to each other (Orlikowski and Scott 2008b).

Interpretivism in its traditional form loses its efficacy

We have shown above that interpretivism emerged in IS at a time when computing 'escaped the computer room' and entered the workplaces of a much wider circle of 'end-users', who were tasked with using terminals and later PCs as part of a new organization-wide information system for the first time. However, with its strong focus on the end-user as the interpreting subject, whose agency was seen to be instrumental in emerging IS phenomena such as unfaithful use and unintended outcomes of IT adoption, interpretivism also tacitly inherited a certain conceptual position from the particular IS problematic of the time:

- *Ontologically*, by taking the reflective human subject (the end-user) as its starting point, interpretivism as received inherited a particular way of dividing the world, known as Cartesian dualism, which underpins much of everyday and scientific ontological understanding in modern Western societies (Spinoza et al. 1997). Cartesianism conceives of the mind as distinctly different and separated from the physical world (for an overview see Scada 2004). Thus, Cartesianism posits a dualism of a human subject whose mind 'in here' reflects on, and directs the body to act upon, a world of objects 'out there'. This tacit acceptance of Cartesian dualism insured that interpretivism was compatible with the separation of the IT world into IT-user (subject), IT-artefact (object) and IT-task (action).
- *Epistemologically*, it follows from the Cartesian separation of subjects from their world, that an individual's knowledge of that 'external' world must be mediated by 'internal' mental representations (beliefs, intentions, interpretations) (Johnson-Laird 1993). On this mentalist view, thought precedes action, so that mental deliberation must precede every instance of use of IT artefacts. It is the main proposition of interpretivism, as received, that researchers must gain access to mental representations that users form about IT (artefacts) and its involvement in their work (tasks).
- *Methodologically*, it further follows that interpretivism as received is individualist and subjectivist. Quite naturally, interpretivism "treats the single individual and his action as its basic unit" (Weber 1981, 158), and subjective meaning as key to explaining IS phenomena (e.g. Lee 1991). Interpretivism thus is "a position that prioritises people's subjective interpretations and understandings of social phenomena and their own actions" (Matthews and Ross 2010, 28). Consequently, it is the researcher's role to elicit how people structure their reality as a basis upon which to form the researcher's own theoretical constructs, "constructs of the constructs made by the actors on the social scene" (Schutz 1954, 266).

While quite fitting in the early days, when the end-user first entered the scene, today interpretivism in this form loses its grip on the world, as this world increasingly fails to adhere to the dominant IS conceptualization of clearly separated entities - user, artefact and task. As a result, this dualist, mentalist and individualist foundation now stands in the way of making sense of a world of ubiquitous IT in interpretivist research.

Firstly, the underlying dualism of interpretivism is increasingly at odds with IS phenomena in a world of ubiquitous IT. While under such an assumption "technology is treated as a specific and relatively distinct entity that interacts with various aspects of the organization" (Orlikowski and Scott 2008a, 7), technology in today's world has largely become infrastructure on the basis of which organizing, and indeed everyday life, takes place. For example, the question "what is Facebook?" seems simple enough. But is it actually possible to isolate a technology entity with distinct properties as the 'Facebook' *artefact*? Or is Facebook rather a collection of diverse IT-enabled *activities* that people engage in when going about their everyday lives? And depending on one's own access to and role in Facebook, will this question not be answered in

manifold different ways, given that Facebook can be a communication tool (e.g. Walther et al. 2009), an advertising platform (e.g. Lee et al. 2018), a self-help community (e.g. de Souza Tacco et al. 2016), a place of bullying, trolling and abuse (e.g. Ophir et al. 2019), or an embodiment of modern surveillance capitalism (Zuboff 2015)? How then would we uphold the distinctions between artefact, user and task, when activity and technology co-constitute each other (as neither can be understood without the other) and when who we are and how we view the world is increasingly shaped by our living with such technologies in quite existential ways. As a result, the clear distinction between IT object and interpreting user subject also breaks down when (the use of) IT becomes the very basis on which such interpreting takes place.

Secondly, a mentalist epistemological foundation is increasingly at odds with how IT is effortlessly and seamlessly integrated in everyday activities, where ‘use’ of IT is not necessarily accompanied by reflection or attention, or even awareness of IT, and more often not even experienced *as use* of any particular distinct artefact. Riemer and Johnston (2017) have recently demonstrated in their analysis of a failed field project, that when the researchers initially adopted the traditional mentalist IS assumption - that users would be able to readily give an explicit account of their ‘use’ of the ‘IT artefact’ - it failed to account for the most basic, everyday phenomena of working with IT, because IT for experienced users was “withdrawn from experience, and un-thematized during normal activity” (p. 1073). The implication of this finding is that when interpretivist researchers set out to investigate users’ mental interpretations of their use of IT, they will increasingly fail because the notion that these users’ relationship to the world is always mediated by mental representations is at odds with how they actually experience IT in their own everyday world.

Thirdly, even though interpretivism stresses the *social* construction of reality, its individualistic methodological foundation renders any social phenomenon a ‘problem’ to be explained. Rather than a starting point for theorizing, on this view sociality can be located nowhere other than in a collection of interactions between individuals and their cognition, making this a weak form of sociality often referred to as ‘inter-subjectivity’ (Reckwitz 2002). Elaborate approaches are then needed to account for the “subjective processes (and meanings) by which the intersubjective common-sense world is constructed” (Berger and Luckmann 1967, 34). This lack of an *inherently* social dimension to interpretivism is a barrier to making sense of how IT, as infrastructure for work and life, is *always already* socially interpreted through its place in social activity (as in the Facebook example above). Research approaches that take individual cognition as their starting point will thus struggle to account for inherently social IT phenomena, such as social media.

It is not our intention here to offer a solution to these difficulties within the received interpretivist position. Instead, we point out that it is the *a priori* split between an individual human subject and the material world that brings them about, and that as a result interpretivism will increasingly have difficulty making sense of a world in which this distinction no longer actually corresponds with how IT is implicated in life.

Reinterpreting interpretation for a new kind of Interpretivism

To move beyond the dualism, mentalism and individualism that characterizes interpretivism currently, we need new ways to describe the emerging phenomenon of ubiquitous IT that reject the underlying Cartesian dualism that we have diagnosed as the problem. In this section we propose the concepts ‘equipment’, ‘being-in-the-world’ and ‘world’ that derive from Heidegger’s (1962) non-dualist existential phenomenology⁴, and which have been used in IS previously (Introna 1997; Mingers 2001; Riemer and Johnston 2014; Riemer and Johnston 2017). Utilizing these concepts will allow us to both connect more fully with emerging IS phenomena in a world of ubiquitous IT, and to rethink the very meaning of ‘interpretation’, as a basis for reformulating interpretivism rather than abandoning it.

We choose Heidegger’s work over other non-dualist alternatives, such as Actor Network Theory (Latour 2005), Agential Realism (Barad 2003; 2007), or practice theoretical approaches⁵ (Reckwitz 2002; Schatzki

⁴ Heidegger’s existential phenomenology differs markedly from Husserl’s because it takes phenomenology to the ontological level, whereas Husserl’s project was focused on individual experience as the source of meaning.

⁵ While many practice approaches evolved from Heideggerian roots they do not necessarily preserve the same non-dualist ontological foundations. Often, instead of taking practice to be a holistic entity akin to Heidegger’s world, ‘practice’ is understood as merely ‘action’ or ‘activity’. Hence, we choose to employ Heidegger’s concepts directly as they provide a precise and fully worked out non-dualist account of interpretation in its widest (holistic) sense.

2002; Nicolini 2012), because his work has the notion of ‘interpretation’ at its core and provides powerful alternatives to all three problematic issues (dualism, mentalism and individualism) identified earlier.

An alternative conceptualization for IS: Equipment, world and being-in-the-world

In a world where IT has become a normal part of life and of doing business, we are not just surrounded by various IT artefacts, but always and already involved with IT: what we do and who we are have become co-constituted by IT (Orlikowski and Scott 2008b). Normally, neither managers nor employees stand apart from this world and view it as external; rather we ‘view’ this world from within, involved with it and as a part of it in existential ways. As a result, IT is now more than just some ‘thing’ we ‘use’; it becomes part of a shared background against which we understand our world, others, and ourselves.

To do justice to this new world we need new concepts to replace the ‘IT-user’, ‘IT-artifact’ and ‘IT-task’. For this we draw on three Heideggerian concepts of 1) ‘equipment’, for a new conception of what IT is when in normal use, 2) ‘being-in-the-world’ as a way of knowing the world as an involved actor, and of 3) ‘world’ as a nexus of social and material involvements. We will show that these concepts can provide a more natural account of the new world of ubiquitous IT than is possible with the dualism, mentalism and individualism that currently characterize interpretivism.

Riemer and Johnston (2014) have demonstrated that Heidegger’s notion of *equipment* is a powerful alternative to the notion of the IT artefact. Equipment is a way to conceptualize what IT is when it is already in normal use in a local context, in a world in which IT already has its place. The term captures the observation that, for the most part, we do not encounter things in our everyday world in an explicitly reflective (present-at-hand) way, but in an entirely practical, (ready-to-hand) way, as a means for particular activities. The name for entities encountered in this way is *equipment*. For example, in fluent activity a management accountant does not encounter a spreadsheet application as a discrete software object, but as equipment for both doing what an accountant does (financial modelling and planning) and for being what an accountant is (a rational professional planner). Thus, equipment is constituted through its involvement with other equipment (IT, desks, offices), typical activities for which it is used (analyzing, advising), and a social identity to which it belongs (the accounting professional) (Riemer and Johnston 2014).

Hence, while in thought we are capable of experiencing the world in dualistic and external ways, as a mind ‘in here’ viewing a world of other subjects and objects ‘out there’, for the most part we deal with the world in a non-reflective and non-deliberative way, by being immersed in skilled interaction with equipment and with other people. Importantly, this phenomenon is more basic than, and underlies, any experience in deliberation.

Heidegger (1962) coined the term *being-in-the-world* to name this most basic condition of humans, which is to *always already be in the world*. Importantly, ‘being-in’ is not the ‘in’ of a thing *in* a container, but the ‘in’ of *involvement*. Whereas Cartesian dualism sees the mind and world as separate substances in a spatial containment relation, which necessitates a mentalist account of knowing, being-in-the-world denotes a relationship whereby humans and world, like players ‘in’ a game, are so intimately involved that they cannot be understood separately from each other. This involvement is made possible by the skillful familiarity that we grow into, as we are raised in a particular culture or way of life and learn to deal with the world competently long before we have explicit beliefs about it as thinking subjects (Spinosa et al. 1997).

The whole of our involvements with equipment and others is finally captured in Heidegger’s notion of a *world*, as in the world of business, the world of sport, the world of academia, our family world, etc. Importantly, this notion of world contrasts fundamentally with that of Cartesianism, where world, akin to ‘universe’, refers to the totality of discrete physical entities ‘out there’. Rather, for Heidegger world is the totality of significance or meaning of the *holistic nexus* of equipment, activities and identities, each depending for what it is on the others within the whole (Riemer and Johnston 2017).

Furthermore, each human grows up in, or becomes enrolled into, multiple such worlds associated with the various practices they are competent in, as per the examples above. As such, *worlds* form the background against which ‘I’ can understand myself, as variously a manager, professor, mother, or modern citizen. Where for Descartes to be an ‘I’ was to think - to be a mind - for Heidegger to be human is to be practically involved in a shared world where “I am what I do” (Dreyfus 2007). Thus, we depend essentially for our identity on the shared social and material worlds we occupy, by doing what ‘one’ should do to be a competent practitioner in each, and by understanding equipment in the way that ‘one’ uses it in that world.

The ‘world’ of ubiquitous IT understood in non-dualist terms

We now show that the concepts of ‘equipment’, ‘being-in-the-world’, and ‘world’ from Heidegger, provide a much more natural account of the phenomena of ubiquitous IT than is possible using the usual dualist, mentalist and individualist commitments of interpretivism.

For managers today, IT is no longer mainly a ‘solution’ to be first implemented and then adopted by employees in order to do their jobs, but already-implemented *equipment* that underpins work and organizing. Employees encounter IT in the course of their everyday work not as a distinct ‘IT-artifact’, but as a practical means in an inconspicuous, ready-to-hand way. As a holistic concept, equipment thus signifies how IT is understood performatively within-the-world and thus contrasts markedly with the notion of the IT artefact, defined by properties (or features). While IT will still be encountered as a discrete object sometimes by some professionals - in choosing a software package, in learning, or when equipment malfunctions (Dreyfus 1991) - these are increasingly becoming the marginal cases. The more central phenomenon for IS now is that IT is becoming equipment and receding from our attention as an object of concern and becoming a peripheral background on which work and organizing take place. The new phenomenon of interest is that we engage in activities *already* co-constituted by IT, where IT no longer stands out as something “to be used” for a certain “task”. Thus, understanding of IT as equipment provides an alternative to the dualist ontology at the heart of traditional interpretivism.

At the same time, IT increasingly becomes part of who we are, constitutive of our identities as managers or employees in particular professions, some of which would not exist in their current form without the IT that underpins them. As IT becomes part of our self-understanding, as a normal means for being who we are, we will find it increasingly difficult to step back and create the reflective distance assumed in the traditional dualist conception that distinguished user, artefact and task as separate entities. Instead, the notion of *being-in-the-world* better captures the character of our familiarity and involvement with IT and the world, and provides an alternative to the mentalistic account of knowing that underpins traditional interpretivism.

Finally, Heidegger’s notion of *world* as a holistic nexus of equipment, activities and identities, underpinning and making intelligible the social practices that make us who we are, emphasizes that our existence is always both social and material through and through. We can only be individual on the basis of always already being involved in such social worlds, and the problem of explaining social phenomena starting from a collection of individual isolated intellects, disappears. Such an already-social conception of the technology-immersed actor can make new sense of social IT phenomena such as Facebook in ways not available to the individualist orientation of traditional interpretivism.

Whither Interpretivism?

This non-dualist alternative understanding of our involvement with the world of IT finally allows us to also re-interpret the notion of *interpretation* itself. By moving away from a predominantly individualistic, mentalistic, and subjective notion of interpretation, we arrive at a more foundational, performative and inherently social notion of interpretation. On this ‘interpretation’ of interpretation, the ‘world’ itself (and any entities within it, including ourselves) are *always already* interpreted by virtue of how we understand them practically *as* something (equipment) *for* something (activity) *toward* being someone (identity). Hence, what IT is, the way it is commonly used, and how it is implicated in who someone is professionally, are all practical and social interpretations that belong to each other within a local world. Consequently, such interpretations do not merely reside in the head of any interpreting ‘subject’, but are *performed* day-to-day on the basis of the social and material practices that comprise our being-in-a-world.

It is of course possible to experience the world *as though* we have stepped outside of it, such as during thoughtful deliberation, when we experience ourselves as subjects ‘in here’ contemplating an exterior universe of objects ‘out there’. But any such ‘self’ and any such ‘objects’ depend for what they are on their place in a particular local world (Riemer and Johnston 2017). In fact, it is only on the background of our lived familiarity with - our ‘being-in’ - such worlds that we can interpret any entity *as* the entity it is. Note that this does not deny the importance of material qualities, but it means that any qualities that are picked out are always an *interpretation* on the basis of this precognitive, practical, background understanding of being-in-the-world.

Such a position will overcome the problems with the received interpretivism we outlined earlier. Firstly, it provides much needed clarity to the ontological status of IT. Because the world is no longer conceived as a collection of independently existing objects ‘out there’, but a holistic nexus of involvements that co-constitutes at once what material and social entities are, IT-in-use can now be seen as an already interpreted entity – equipment – that is at once material and social. Secondly, it demonstrates that our experience of being a subject standing apart from a world of objects, while possible, is derivative and founded upon a more basic practical engagement with the world through activity. This explains how everyday use of IT can evade our conscious experience and be missed or misunderstood by the IS researcher (Riemer and Johnston 2017). Finally, such a position is *inherently* social, which provides new possibilities for theorizing social IT phenomena. It shows that, rather than the ‘social’ being a sum of individuals interacting, being an individual person in the first place is made possible only by already being part of a social and material world.

On this reinterpretation of interpretation, the interpretivist researcher will set out to investigate, not how particular subjects ascribe meaning to IT in the world ‘out there’, but how IT in a particular world under study is *already* socially and practically interpreted, and how IT-as-equipment, activities, and people’s identities become what they are as part of such a local, holistic world. Armed with this new interpretation of interpretation, the interpretivist researcher will be attuned to how the being of entities is always locally performed as a practical accomplishment in subtle yet important ways in each concrete context, rather than fixing them a priori (Riemer and Johnston 2017).

Methodologically, the interpretivist researcher will thus complement interview-based data collection, which provides access to users’ explicit accounts of IT, IT use and work, with richer methods that allow access to how IT is inexorably implicated in everyday activity, such as observations of how people use IT, or analyses of digital traces of IT use captured by IT systems (Behrendt et al. 2014; Hafermalz et al. 2015). However it will not be the objective of such observational methods to catalogue ‘user behaviors’ at a distance, but to gain, as much as possible, an inside understanding of how IT is practically understood within the local world by its users – to map out the holism that constitutes each local world (for more details see Riemer and Johnston 2017). The aim will be to establish both what IT has become in the local world (how it has been performatively interpreted), and how it is implicated in enacting a particular user identity.

Discussion and Conclusions

It has been suggested that the IS field must move “beyond interpretivism”, given its dualist underpinnings and its failure to address novel phenomena (Introna et al. 2018). A variety of replacement research lenses have been suggested including agential realism (Barad 2007; Orlikowski 2010), performativity (Introna 2013) and process-philosophical approaches (Cecez-Kecmanovic 2018) or post-humanism (Haraway 1987) and sociomateriality (Suchman 2007). Each of these approaches has shed its own light on emerging IT phenomena. However, given its wide acceptance in the IS field and its well-understood nature, in this essay we have asked whether and how interpretivism might be retained in altered form by reinterpreting the notion of interpretation itself along non-dualist lines.

Rather than to throw the baby out with the bathwater and abandon interpretivism altogether, we have shown that a non-dualist notion of interpretation is available from recent work in IS, and that interpretivism based on this notion would make interpretation foundational to all of the traditional dimension – ontology, epistemology and methodology. In the following we compare such an alternate non-dualist revision of interpretivism with its traditional form, to demonstrate which commitments would be altered and which would be retained.

On the ontological dimension, interpretivism would be altered by abandoning the dualist distinction between ‘world’ and interpretation thereof. This is achieved by adopting a non-dualist notion of world, not as an all-encompassing collection of self-sufficient entities ‘out-there’, but as a holistic nexus of equipment, activities and identities relevant to the IT-related practice as understood by practitioners in a specific research context. Such ‘worlds’ are the socially and performatively pre-interpreted background against which entities encountered by individuals are understood in their involvements with them. In this way, interpretivism would retain its current commitment that ‘reality’ is multiple and socially constructed, because worlds are multiple and social. However, ‘social construction’ would no longer be understood as an inter-subjective overlay on ‘a world out there’, because ‘worlds’ thus revised are already social at base and themselves social achievements. This resolves a long-standing ontological inconsistency in interpretivism.

On the epistemological dimension, how such ‘worlds’ can be known would be revised accordingly. Knowing would not be primarily understood as an individual, mental act, but rather as a practical and embodied (and sometimes reflective) achievement. Our everyday, practical familiarity with our local worlds (our being-in-the-world) would provide the most basic level at which anything can be known as anything at all, either practically or reflectively. Thus, knowing is always primarily interpretation on the background of lived experience of some social and material shared practice world, contrary to the current implicit assumption that knowing is at base individual and subjective. As a result, such a revised understanding of knowledge would allow for both differences in individual viewpoints and, at the same time, capture how members of a local world share much of their knowledge of how to act in their world, often unreflectively. At the same time, it focusses attention on differences between local worlds, such as in cross-case comparisons. What interpretivism would retain is, firstly, its basic conviction that knowing is the result of interpretation, while ‘interpretation’ is now understood more broadly as inherently social and performative. Secondly, it retains the basic tenet that interpretations drive people’s actions: yet actions are now seen as inherently meaningful and purposeful within a local world, and thus as both a source, and result, of knowledge.

On the methodological dimension the focus of the interpretivist researcher will change accordingly, away from primarily studying individual interpretations, to studying the nature of the local world. Consequently, researchers will strive to obtain an inside understanding of the world of their research participants. This will involve tracing how IT has become equipment *for* local activities *in pursuit of* (professional) identities of the participants, and how these entities together constitute the local practice world. Moreover, given that these performances are often embodied and not fully accessible to reflection, immersed observational methods will have to complement interviews as data collection methods. Interpretivism will retain the notion that the researcher is the main research ‘instrument’, who brings their own beliefs and values to the research, now not understood as subjective prejudices to be overcome, but as the distance between the *worlds* of researcher and participants to be navigated. This will involve a subtle methodological trade-off between the ‘opacity’ of practices to outsiders, and the ‘blindness’ of participants to their own tacit practices (e.g. Reimers et al. 2013). Finally, interpretivism will retain its focus on ‘meaning’ as its prime construct, with the caveat that meaning is now embedded in the world rather than in individual minds.

To IS philosophy we contribute a careful analysis of the history of interpretivism in IS and an analysis of its foundational commitments. We have demonstrated how replacing this foundation with a non-dualist alternative opens a space for rethinking the notion of interpretation itself. This is significant, because by making interpretation the most basic principle that unites what there is in a ‘world’ and how we know the world, such a revised interpretivism would dissolve the distinction between ontology and epistemology, effectively resulting in an onto-epistemological position (see Barad 2003), as advocated by some critics.

To IS research practice we contribute an initial exploration of a revised interpretivist approach more suited to investigating the emerging IS phenomena in a world of ubiquitous IT. Our analysis revealed such a revision as an evolution rather than a radical over-throw. This is significant because evolving the approach could allow IS researchers to also evolve their research practices, rather than to adopt entirely new ways of doing and teaching research. More methodological work is needed, such as to connect existing methods of embedded and ethnographic enquiry to the requirements of such a revised position.

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