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A Conceptual Clarification

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Digital Work: A Conceptual Clarification

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Abstract

This paper provides a typology of digital work – a popular term still lacking a clear meaning. We show how previous attempts to capture the essence of digital work struggle to provide a meaningful yet comprehensive understanding of what differentiates traditional from digital work. We draw on prior literature to argue that digital work requires three rationales to be fulfilled: process (How?), outcome (What?), and objective (Why?). Based on this, we highlight three variations – digital enabled work, digital engaged work, and digital embedded work. This typology allows us to define digital work more clearly and enables future research to adequately study and theorize digital work. Furthermore, this typology permits considering alternate classifications for activities and actors in work that traditional work conceptualizations fail to include.

Keywords: Digital work, typology, conceptual discussion, digital embedded work, digital enabled work, digital engaged work.

1. Introduction

Digital work is increasingly used in scholarly lexicon in contemporary times (Baptista et al., 2020; Mrass et al., 2017; Orlikowski & Scott, 2016). Studies ranging from sociology (e.g., Gerber & Krzywdzinski, 2019), human resources (e.g., Isari et al., 2019; Kuhn et al., 2021) to information systems (e.g., Baptista et al., 2020; Orlikowski & Scott, 2016) and management (e.g., Colbert et al., 2016; Dittes et al., 2019), among others, have made attempts to theorize digital work. The usage of the concept in this prior literature reflects a shift in what constitutes and characterizes work. In particular, digital work is used to convey an evolving relationship between received knowledge of work and digital technologies across different areas. This includes various new types of work that did not exist before the Internet, such as being a "Youtuber", an "Instagram influencer" or a "Facebook cleaner"; it also includes new professions such as data scientists, social media managers and chief digital officers; as well as reconfigurations in existing professions, such as the digitalization of legal and medical work. These are exciting times in the world of work.

Despite this increasing engagement with and utility of the digital work concept, there remains no clear articulation of what it is and what makes digital work different from the established concept of "work". It is unclear what constitutes digital work and what delineates the diverse perspectives of digital work found in the nascent literature in this area. On the one hand, there seems to be some agreement that digital work is different from what has come before (Orlikowski & Scott, 2016) – e.g., tele- or virtual work, mobile and flexible work – and subsumes various forms of platform-based gig and crowd work (Mrass et al., 2017). On the other hand, it is unclear what really distinguishes the concept from others and whether there is a need for it. Perhaps the term "digital work" is just another fad and too broad to be useful? We believe this is not the case. However, the lack of conceptual clarity about what digital work is (and is not) and the lack of a clear understanding of the distinctive dimensions of digital work hinder the field's engagement with this important phenomenon.

We argue that attending to this is important if we are to achieve and maintain cumulative knowledge building on which scholarship is built (Kuhn, 1970). Given the accelerated growth of all forms of digital work through the COVID-19 pandemic, this becomes particularly important. For some, digital work is the use of digital technologies in the process of work (e.g., Mrass et al., 2017). While for others, it is work in which the outcome is a digital technology (e.g., Gandini, 2016). While not surprising, it is problematic that the rising usage of the concept is accompanied by equally rising diversity in how different bodies of knowledge construe it. This confusion in our understanding of what we mean when we say "digital work", in conjunction with its increasingly diffused use, puts the concept's future utility at risk. There is a risk of the concept becoming meaningless due to too many different and conflicting definitions being associated with it. There is also the risk of the concept becoming an empty label – used by many, but with little substantive development of the concept over

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time. Either fate risks diluting the concept's usefulness and leaving this research domain without a common reference core to build on.

The purpose of this paper is to explore what digital work means. In this conceptual piece, we revisit the ontology of work and query the existing literature on the role of digital technology in work. Consequently, we draw on existing literature and observations of the usage of the term digital work to develop a framework for conceptualizing digital work. Our conceptualization synthesizes the objectives, processes, and outcomes under digital work to put forward three perspectives and three corresponding shades of digital work. Our theorizing provides a platform for scholars across disciplines interested in the future of work to have a shared understanding of digital work and guidance for future research.

2. Ontology of work

Only through work, have humans made history and created civilizations – and the particular characteristics of human work distinguish humans from machinery that has no further history (Schrecker, 1967). Many attempts have been made within various academic disciplines – including sociology, psychology, and religion – to define what work means; however, there is little consistency in the terms' substance (Karlsson, 2004). Yet, there is a central tenet of considering work as activities carried out towards a goal – even though what constitutes the activity, goal, or outcome varies depending on which academic discipline or perspective is involved. A claim from the late 1970s – "work is well known experientially, yet little understood conceptually" (Cummings & Srivastva, 1977, p. 5) – still holds true today.

One stream of thought understands work as a set of activities. Most definitions within this stream consider goal-direction as an essential criterion for identifying work activities (e.g., Lukács, 1948, 1973; Marx, 1970). Other definitions within the same stream go beyond goal-direction, arguing that work comprises more than the activities needed to reach the goal and includes the instruments or tools that humans use that empower them to formulate goals (Ruben & Warnke, 1979). Furthermore, some understandings of work consider only certain activities, such as those oriented to executing managerial instructions, but not the managerial activities as work (Weber, 1978).

An alternative perspective focuses on the social relationships through which individuals perform activities. This view focuses on activities "that produce something of value for other people" (United States Department of Health, Education and Welfare, 1973). For example, in a work relationship, an individual performs activities (=work) designed to reach goals defined by others (Gross, 1958). This implies that "one is always with others and for others" (Marcuse, 1973, p. 17). While this perspective allows considering a broad range of activities as work, including a housewife's activities, an emphasis lies on employment relationships in which work functions as a means to secure status and material survival (e.g., Marshall, 1907; Mingione, 1985, 1985, 1991). This implies an external necessity that causes human beings to work (Kosík, 1976). Furthermore, it provides the grounds for the "burdensome character" of work that emerges from the priority given to the goals, and not those who perform the underlying activities (Marcuse, 1973).

Additionally, work is seen as a source of human identity and meaning. Sociologists argue that our understanding of what work is, informs the meaning that we assign to human beings (Karlsson, 2004). The Catholic church understands work as an obligation but at the same time argues that "human work is key, probably the essential key to the whole social equation" and "a good thing for man" as work might be useful, enjoyable, and lead to fulfillment (Pope John Paul II, 1987). In line with this, work is regarded as a relevant source of self-definition in our modern society (Ghidina, 1992; Goff et al., 2016). However, not all work qualifies for this. While some work serves as an individual's primary self-identification, others might fail to do so, and a third category of work is even oppressive and threatens an individual's dignity (Berger, 1964). This implies that work may serve as a source of one's rise and fall in the societal hierarchy (Braude, 1975).

The boundaries of work are often difficult to define. While the concept ranges from unfree labor, such as slavery or mandatory in-prison labor, to non-market work, including household labor or home-farming, the central focus of most conceptualizations of work is limited to paid employment or wage labor (Vallas, 2011). Within the scope of this paper, we follow this predominant understanding of work as financially compensated activities only. However, we need to acknowledge that in digital times, the work-non-work boundary is blurring even for financially compensated work (e.g., through the use of work-related technologies in non-work hours, Schlachter et al., 2018).

3. Digital Technology and Work – The current rationales of digital work

The ubiquity and pervasiveness of digital technology in today's world have arguably catalyzed the rise and usage of the digital work concept (Baptista

et al., 2020; Dittes et al., 2019). Indeed, the digital work concept is evoked to capture the salience of digital technology within a work context. Arguably, digital work is a conceptual label that has risen out of the necessity to find a way to grasp the nuanced shifts in the forms and nature of work that prior conceptualizations fail to do sufficient justice to (Orlikowski & Scott, 2016). Thus, it suffices to note that whenever digital work is used, it is to signal a prevailing essence of digital technology in a particular work setting (Baptista et al., 2020; Gandini, 2016; Mrass et al., 2017).

Although the inherent relationship between work and digital technology is established in prior literature, the wide breadth of the application of digital technology in work makes it both a strength and a weakness in delineating between regular work and digital work. In short, digital technologies are now applied to some extent in almost all work. For example, a cleaner uses a scheduling app on their smartphone to keep track of their appointments, while a doctor uses an electronic health record system to input patient notes. That does not necessarily make their work digital work, however. Yet, keeping digital technology as a core component in characterizing digital work provides a useful starting point for defining and delineating digital work from other work forms as we will demonstrate.

A review of prior literature (see Table 1) on digital work reveals three main rationales for relying on digital technology as the defining element of digital work. These are – process, outcome and objectives rationales. The process rationale captures "how" the work is being carried out. In the context of digital work, the "how" is predicated on the role of digital technologies in doing work. In this sense, digital technology is seen as a tool that enables or facilitates the act of carrying out work. Prior research has taken this predominantly technology-mediated lens to conceptualize digital work. This logic of thinking about digital work can be identified in previous studies on telework, virtual work (Raghuram et al., 2010), mobile work, and sharing and gig economy (Kuhn & Maleki, 2017). This rationale describes how digital technology is a more or less sophisticated tool (Orlikowski & Iacono, 2001) deployed in carrying out digital work. A few studies have unpacked the role of technology as a facilitator of work in more detail (Bailey et al., 2012; Sørensen, 2011). For example, Bailey et al. (2012) show how digital technologies may play the role of means, medium and/or substitute.

The outcome rationale reflects the extent to which the output of work activities is digital. This captures the "what" in such work contexts. Unlike the process rationale, the outcome focuses on the essence of digital technology as the end product of work rather than seeing digital technology as a tool. Hence, digital "objects is the end rather than the means in this rationale. Many studies on digital work under this rationale focus on the product or outcome of the work, and what makes the outcomes of digital work different from non-digital work. From this viewpoint, the main distinguishing characteristic of digital work is the creation of digital goods (Durward et al., 2016) or the "regime of immaterial production" (Gandini, 2016, p. 134). While IS scholars have focused on unpacking the often hybrid nature of technological objects (Faulkner & Runde, 2013) and digital innovations (Briscoe & Mulligan, 2014) as both material and immaterial, management scholars have focused more on the political economy of immaterial production, where much of what could be considered as output of digital work (e.g., online content) remains unrecognized as a product of labor and is often unpaid (Ekbia & Nardi, 2017).

The objectives rationale highlights the motive and underlying purpose of work. In other words, it reflects the "why" that characterizes the work. Very often, the reason to do any kind of work is the expected reward in return for the labor, primarily the financial compensation. However, in the context of digital work, the objectives are defined not only by the workers' desire but also by the extent to which digital technologies play a role in determining or shaping the objective. Many digital technologies cause new accumulation logics that cause power shifts and changes in human behavior, such as surveillance capitalism (Zuboff, 2015) or data capitalism (West, 2019). The objectives rationale considers such direct and indirect influences of digital technologies on individuals, businesses, and society. The rationale takes its point of departure from the process and outcome rationales by refocusing our attention on the influence of digital technology on why work is arranged or structured the way it is. In contrast with the process rationale that focuses on the application of specific digital technologies in the doing of work, the objectives rationale is more focused on digital technology as a driver influencing why work is carried out the way it is in order to be able to leverage existing and future digital trends (Gaskin et al., 2010; Kittur et al., 2013). In other words, this rationale captures why work is organized according to an overarching digital logic (e.g., modularity), which may or may not involve the actual use of digital technology in performing the work. The rationale here is not about providing people with better digital tools to do their work but about work arrangements that enable leveraging (or responding to) advances in digital technology.

4. Issues with Prior Rationales

While each of the digital work rationales from prior literature provides a window to an aspect of digital work, the challenge is that none of them captures the phenomenon as a whole. Since the ideas have been formulated by different, usually non-overlapping, communities of scholars, each rationale provides a specific analytical lens while missing the relevance of the others or, otherwise, provides a definition so inclusive as to include virtually all forms of work that make use of digital technology.

The process rationale suggests that when work involves using digital technology in its performance, it becomes digital work. While this provides a useful starting point for conceptualizing digital work, its usefulness is challenged because most work in the digital age is mediated by technology. Thus, there is a need to conceptually delineate what makes technology-mediated work digital work. Furthermore, this conceptual finesse is needed to avoid the situation where digital work becomes synonymous with *almost all* work and loses its definitional power.

In contrast to the extensive inclusion criteria of the process rationale, the outcome rationale focuses specifically on the products of work. This usefully highlights that the outputs of digital work differ from the outputs of non-digital work and draws attention to the possibility that many activities of digital creation previously not considered as work (e.g., making Youtube videos) should perhaps be viewed as such. Thus, the perspective narrows and expands scholarly understanding of digital work. Taken in isolation, however, the outcome rationale forgets that work is about more than production (i.e., work and labor are not synonymous).

The objectives rationale provides an interesting additional lens on digital work where there is a shift in emphasis, where digital technologies are relegated to the role of an outside force. Classifying work as digital under this rationale requires that the purpose behind the work being carried out in a particular way is related to digital technology or, more broadly, digitalization. Although this provides a relevant perspective in helping us frame the work of, e.g., agile coaches, who may be excluded from digital work according to other definitions, it ends up presenting scholars with a very vague boundary for identifying what work qualifies as digital work and what does not.

Furthermore, all three rationales would struggle to include emerging forms of work such as algorithmic work, robotic work, or AI-driven work, where the agency is with non-human actors who delegate tasks to humans (Fügener et al., 2022) as a form of digital work. In summary, we conclude that a singular rationale for conceptualizing digital work fails to do justice to the phenomenon. Instead, we posit that a unifying, multi-dimensional rationale is needed. For this, we propose adopting a plural perspective in the theoretical articulation of digital work.

5. Toward a Theory of Digital Work

By unpacking the process, outcome, and objectives rationales underlying different definitions of digital work, we highlight three salient perspectives that can explain different shades of digital work. These perspectives are a) conduit, b) strategic, and c) creator perspectives. They emerge at the intersection of any two of the rationales underlying digital work. The perspectives lend themselves to identifying three corresponding shades of digital work: *digital enabled work, digital engaged work, and digital embedded work.*

To explain the typology we put forward in this paper, we draw on examples of various digital work cases represented in prior literature and in contemporary work settings. We also build on the rationales of digital work highlighted earlier:

- Process rationale (how?): Is the work being done with digital technology as a tool?
- Outcome rationale (what?): Is the output of the work a digital technology/artifact?
- Objectives rationale (why?): Is the job taking place because of the influence of digital technology?

With this analytical frame, we present an overview of the shades of digital work that emerge by taking a plural perspective in Figure 1. We unpack each of these shades next.

Table 1. Prior Perspectives on Digital Work

Rationale	Sample references	Illustrative examples
Process logic: ***How*** is work done? Digital work is done by technology as a facilitator and/or enabler	Bailey et al. (2012), Duggan et al. (2020), Howcroft & Bergvall-Kåreborn (2019), Kuhn and Maleki (2017), Raghuram et al. (2010), Watson-Manheim et al. (2002)	– Telework (work by means of telecommunications technology) – Virtual reality sales work (sales work substituted by VR) – Gig/sharing economy work (work mediated by platforms and apps, e.g. Uber

Outcome logic: ***What*** is work done **for**? Digital work produces outcomes that are material, immaterial, and/ or hybrid	Briscoe and Mulligan (2014), Durward et al. (2016), Ekbia and Nardi (2017), Gandini (2016)	– Software development, Open source, Instagram influencers, Data scientist (mostly immaterial digital value, e.g., software, algorithms, content) – Computer engineering, IT maintenance (mostly material value, e.g., hardware)
Objectives logic: ***Why*** is work done? Digital work is motivated by workers' intentions, and/or technology's influence on work arrangements	Baiyere et al. (2017), Gaskin et al. (2010), Kittur et al. (2013), Moon & Sproull (2000)	– Work of chief digital officers – Agile development work – Distributed work

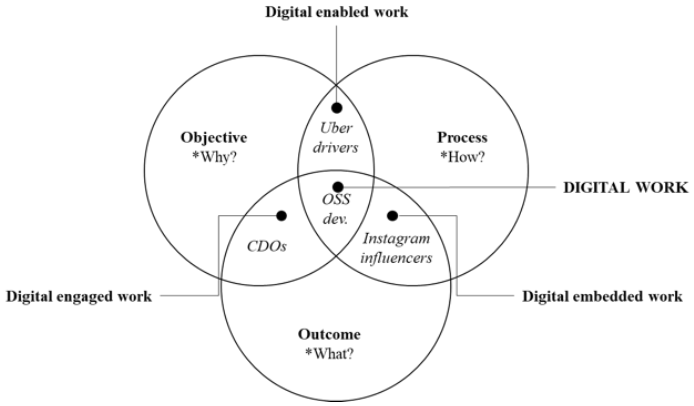

Figure 1. Shades of Digital Work

5.1. Digital Enabled Work – The Conduit Perspective

Digital enabled work combines the process and objective rationales. Here, digital technologies influence, if not determine, how humans conduct work. In other words, work is organized and shaped by digital technologies. At the same time, work in its present form occurs due to the technologies' existence.

Uber drivers offer a fitting illustration of digital enabled work. For example, Uber drivers work for four main reasons: (1) to have scheduling flexibility, (2) to transition between other types of work (or full-time employment), (3) as a hobby, and (4) because they have no other choice (Rosenblat, 2018; Rosenblat & Hwang, 2016). Without digital technologies such as navigation systems, GPS, or the app that connects drivers and riders, Uber drivers' work would not exist (instead, "traditional" roles such as certified cab drivers would face less competition). However, the technologies do not only enable Uber drivers' work, they also determine how the work is conducted. The outcome of their work is not digital, however. Uber drivers work by registering online as "driver partners". The company positions drivers as partners with messages like "be your own boss" and "get paid in fares for driving on your own schedule" (Rosenblat, 2018, p. 645). Once approved, active drivers can log into Uber's system via a smartphone app to indicate that they are available to receive ride requests from passengers. When active Uber drivers receive a ride request through the system, they have about 15 seconds to accept it or reject it. When Uber drivers accept a ride request, they risk that the ride's fare will not be profitable; yet, drivers are not shown destination or fare information before they accept a ride. In addition, drivers risk "deactivation" (being suspended or removed permanently from the system) for canceling unprofitable fares. Uber drivers work by fully accepting the app's terms of service, which can change anytime.

Further, Uber drivers work by competing for passengers and by maintaining a high customer rating score. After every Uber-mediated ride, passengers are prompted to rate drivers on a one- to five-star scale and are given the option to add specific comments on driver performance. In Uber's system, this consumer feedback generates instantaneous evaluations that allow Uber to track worker performance and intervene with poor performers. These ratings serve as the basis for deactivation notices or suggestions for improvement to underperforming drivers. To remain active on the system, drivers must meet an average rating target of around 4.6 out of 5.0 stars (Rosenblat, 2016; Rosenblat et al., 2017). Many drivers express that they are not always sure what they are being rated on and have tried to compensate for anticipated negative ratings by offering snacks, water, or a phone-charger cord (Raval & Dourish, 2016; Rosenblat & Stark, 2016). The uniformity of this behavior may stem partly from Uber's training videos, which make

explicit recommendations for drivers' behaviors (such as providing bottled water or phone chargers).

In sum, the "why" of digital enabled work is driven by digitalization (e.g., rise of platformization, online labor platforms, sharing economy platforms), which typically enables the process of carrying out work via digital technology and highlights digital technology as the reason (i.e., objective/purpose) why the work exists. Essentially, the "how" and "why" of this form of work are informed and enabled (and disabled) by specific digital technologies (e.g., Uber app for drivers and its algorithms) in minute detail. However, the outcomes of this form of work remain largely non-digital (physical transactions, services, goods). In this digital enabled work perspective, digital technology is the conduit of work. Additional examples of digital enabled work include AirBnB hosting or online teaching –these work activities are similar to driving an Uber in that the work only exists because of digital technologies and rely on digital technologies to work, but the outcomes are non-digital.

5.2. Digital Engaged Work – The Strategic Perspective

Digital engaged work comprises work that exists because of digital technologies and that produces a digital artifact or technology as an output. That is, it encompasses the objective and outcome rationales. This form of work's existence is driven by emerging opportunities or challenges that digitalization trends and technologies drive, which opens up a space for activities that foster the creation and recombination of digital technologies/objects.

This shade of digital work is illustrated well by functions supporting organizations in their digital endeavors, such as chief digital officers (CDOs) or agile coaches, whose work purpose and outcomes are influenced by digital technologies, but whose work processes may not necessarily depend on the use of digital technologies for their performance. For example, CDOs work to drive the transformation of a traditional organization into a digital one (Singh & Hess, 2017). Another objective of the role is to help companies stay relevant and competitive in an age of increasing digitalization. This has become necessary for many organizations as digital transformation endeavors fundamentally change corporate strategies, which forces them to make changes to core competencies – requiring top management attention as well as central coordination and orchestration (Firk et al., 2021). CDOs work to create business value and business innovation through digital technologies. CDOs have business objectives rather than working in the back office IT. Their work fosters output that is typically digital technology solutions that are customer-facing in contrast with the rather inward-looking view of the traditional CIO. Typically, they hold positions in a company's leadership (e.g., Board of Directors) and work closely with the CEO (Singh & Hess, 2017). The CDO role thus includes supporting top management in formulating and executing a dedicated digital transformation strategy (Tumbas et al., 2017). In some cases, they strive to harmonize the different digital activities within different units into one digital unit.

In sum, the "why" of digital engaged work is driven by digitalization (e.g., organizational digital transformation initiatives), while the "what" of this form of work is engaged with the production of further digital outcomes (e.g., digital innovations, specific systems, or data-driven business models). However, the process of conducting the work is not necessarily determined via digital technology (e.g., interactions with other people can take place physically or be mediated via technology. However, technology as a tool choice is only an option but not a prerequisite for the work to take place). In this perspective, digital technology is the "X" the work is about. Hence, this form of work represents a strategic perspective, where although the work exists because of digital technology and the work influences the creation of digital technology, the process of performing it is not fully dependent on digital technology. Further examples of digital engaged work include Agile Coaches, UX designers, or any occupation involved in creating and maintaining the digital infrastructure, such as digital hub managers or hardware engineers. All of these occupations have in common that they only exist because of digital technologies and create outcomes that are, at least in parts, of digital nature, but the work processes have many non-digital elements.

5.3. Digital Embedded Work – The Creator Perspective

Digital embedded work refers to work with processes requiring digital technologies and outcomes that are digital in nature. That is, it is characterized by the process and outcome rationales. This implies that in addition to digital technologies playing a pivotal role in the process flow of the work, they form an important part of the outcomes created by this form of work. A typical example of digital embedded work is that of Instagram influencers. While Instagram influencers need social media to do their work (process) and the outcomes they produce are largely digital (e.g., viral content), the purpose (why) of their

work (shaping opinions, revenue from celebrity status) is not dependent on digital technology but precedes it.

Instagram influencers are a type of micro-celebrity (Senft, 2013) who have accrued many followers on social media and frequently use this social capital to gain access to financial resources (Abidin, 2015). Influencers utilize and strive to understand the algorithms that govern visibility on social media to grow their follower base. Influencer marketing revolves around the idea that influencers can leverage their digital platform to impact their followers' beliefs and practices so long as they can captivate and maintain their attention with the digital content they produce (Hearn & Schoenhoff, 2016).

In this form of work, the objective or motivation for doing the work is not digital technology. Rather many Instagram influencers aim to get paid and make a career out of "being me" (other motivations include the desire to become famous for something, passion and fun, and a desire for independence), and successful influencers can make a living off it. As part of Instagram influencers' self-branding activities, they rely on digital technologies to play the "visibility game" with Instagram's algorithms (Cotter, 2019). Influencers emphasize the importance of gathering information about how algorithms function as they create and position their digital content. For example, information to support visibility may include topics like which hashtags to use, what time to post, and how best to increase engagement. Information related to acceptable behavior includes topics like what kind of actions are algorithmically interpreted as "spammy" or which tools comply with Instagram's Terms of Use (Cotter, 2019). Influencers often question the merit of information disclosed by others and recognize that Instagram constantly obscures information about its algorithms and updates them, making it difficult to "prove" various claims. However, this makes engagement with digital technology a pertinent component of the process and outcome of their work.

In sum, like with digital enabled work, the "how" of this form of work is enabled (and disabled) by specific digital technologies (e.g., Instagram app for influencers and its algorithms). The difference with digital enabled work is that the "what" of this form of work (e.g., popular Instagram posts that many followers like and comment on) is deeply embedded in those same enabling (disabling) technologies (e.g., the popularity of a post depends on how Instagram algorithms display it to various followers). However, the "why" of this form of work is not determined digitally (e.g., celebrity culture is driven by human psychology rather than technology). In this perspective, digital is (one of) the media in the creators' arsenal. An additional example of digital embedded work is Youtubers or TikTokers who produce entertainment and educational videos (outcome: digital content) using digital cameras and software (process: digital tools). Again, while the outcome and process of work are digital, the why precedes it.

5.4. Digital Work – Enabled, Engaged, *and* Embedded

Based on our conceptualization, digital work occurs at the intersection of digital enabled, digital engaged, and digital embedded work (see figure 1). In digital work, digitalization and digital technologies present the reason and means for this type of work and the work's outcomes are digital. To be clear, this is not to dismiss the other forms of work that may have been labeled as digital work in prior literature. On the contrary, our conceptualization offers additions to our conceptual vocabulary that can help characterize these *forms of work as shades of digital work*. Hence, the view proposed in this piece contributes conceptual clarification that should inform future scholarship in recognizing whether some form of digital-technology-related work is indeed "digital work" or if it should be better classified as one of the three shades of digital work – i.e., digital enabled, digital embedded or digital engaged work.

Many new occupations, such as data scientists and "algorithmists" (algorithm auditors), illustrate this "full" form of digital work. However, roles that have been around for decades can also fulfill these criteria. For example, Open Source Software (OSS) developers. Many OSS developers enjoy coding, and they only engage in the work that is most interesting to them (Bagozzi & Dholakia, 2006; Hertel et al., 2003; Lakhani & von Hippel, 2003; Shah, 2006). This group of contributors finds it rewarding if they can help other people in solving digital technology-related issues. However, they might also feel obliged to give something back to the community, as they have previously benefited from the help of community members (Bagozzi & Dholakia, 2006; Shah, 2006; Wu et al., 2007). OSS developers work by hierarchy-free, community-based coordination of many voluntary, free contributions. As a result, the numbers of volunteers contributing to OSS projects tend to be large (Mockus et al., 2002; Raymond, 1999; von Krogh & von Hippel, 2006). The Apache project, for example, builds on the contributions of almost 400 individuals that helped to solve 695 fixes and submitted in total 6.092 new codes (Mockus et al., 2002). Since they are volunteers, none of them is guided or restricted by employment relations (O'Mahony, 2003), which enables the volunteers to

choose tasks they have a real passion for – and consequently complete with high levels of care and creativity (Raymond, 1999).

The way OSS communities organize themselves challenges the conventional wisdom regarding managing and coordinating such a complex and uncertain environment (Dahlander & Magnusson, 2005). For example, in the Apache project, the "Apache Group," an informal team of volunteers (in their free time on top of at least one "regular" job) shared the responsibility of guiding the software's development and coordinating the contributions by making use of simple ICT technologies such as e-mails (Mockus et al., 2002). To become members of the Apache Group, volunteers had continuously contributed to the community over time and were nominated and voted by other community members to serve in this role (Fielding, 1999). To make decisions, the Apache Group, like most other OSS communities, relies on votes and a culture of open discussion (Shah, 2006). Finally, OSS developers work to improve the digital outcome of their efforts (the software) within the control of their community. The objective is to create something useful to satisfy one's and others' needs in the best possible way (Bagozzi & Dholakia, 2006; Dahlander & Magnusson, 2005; Moody, 2002; O'Mahony, 2003).

In sum, the "why" of digital work is driven by digitalization (e.g., new technology trends), while the "what" of this form of work is engaged with the production of further digital outcomes (e.g., specific systems, new algorithms, etc.). The processes of work are also enabled digitally (e.g., via e-mail, software development kits, etc.). In this perspective, digital technology is a conduit of work, a created output, and an underlying strategic objective for why the work exists. In addition to OSS developers, cybercrime specialists are a good example of the "full" form of digital work as they use digital tools (process), produce digital outcomes (cybersecurity), and only exist because of digital technologies and their misuse (cyberattacks).

6. Conclusion / Implications for future research

This paper provides a typology of digital work by distinguishing traditional and digital work from digital – embedded, engaged, and enabled work. This typology allows us to define what digital work is and is not while incorporating insights on this topic from prior research. This conceptual nuance enables future research to specify the shade of digital work under study. The proposed sub-variations further allow for distinct deep dives into specific shades of digital work.

Furthermore, the proposed typology overcomes the challenge of traditional framings of work, which would fail to consider activities such as making Youtube videos as work, or would consider digital technology in only a limited capacity as a tool in the process of work or as an outcome of work. Instead, our typology suggests that in many cases, digital technologies and trends serve as the X that work is fundamentally about and, thereby, as *generators* of work (Baird & Maruping, 2021; Klein & Watson-Manheim, 2021).

With the rising capability, capacity, availability, and affordability of digital technologies to perform activities, we need to develop a more open-minded understanding of work. Furthermore, we need to understand the consequences of non-human work on traditional work – a field offering manifold opportunities for future research. For example, as agentic technologies become smarter and their use grows in both scale and scope, we may need to outline and add a new shade of digital work - the *digital generated work* – to our typology. Finally, clearly differentiating traditional from digital work will help us understand the interdependencies we are creating.

As a final note, it is clear that digital work is still emerging and evolving. While the three rationales identified allow us to capture the essence of digital work at the current moment in time, with further developments, we will likely need to take additional rationales and subsequent forms of digital work into account in the future.

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