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POINT OF VIEW

When the God Ka acts for us: digital management as twinning our selves

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Abstract
The search for digital twins is an ancient practice among both digital and organizational designers. It is grounded into a very old modern philosophy: representationalism. Here, I propose to distinguish two different types of representationalism: cognitive and narrative representationalism. I detail their genealogy and how there are interwoven with the very reconfiguration of scientific management through digitality during and after WWII. I explain how the apocalyptic orientations of post-war management have been preventing employee and customer subjectivation and fosters multiple self-images about us in the world. To discuss the dangers of such managerial processes for our present and our future, I come back to a parallel drawn by Michel Serres: the unexpected proximity between Ka and our philosophies of digitality, particularly artificial intelligence (AI). Maybe our worst nightmare could become our most ordinary experience.

Keywords Digital twins · Digital twinning · Digital clones · Representationalism · Ka · Managerial apocalypses · Interruptions · Subjectivation · Temporality · Deleuze

Introduction: exploring this new alterity at the surface of digitality, our digital twins

Artificial intelligence (AI) is increasingly being considered dangerous for organizations and societies. It is believed that it would radically automate work activities. It would replace most knowledge-based workers, from journalists, to translators, to teachers. Beyond the Schumpeterian argument about creative destruction at stake in any innovative process, I want to elaborate a more philosophical thesis. The most terrifying thing I see about AI is not that it would destroy jobs**.** Instead, it is that AI is expected to replace us, what we are, and what we do in life, through a never-ending narrative process. And digital twins, as a logic, are the epitome of this danger. Of course, there is something dystopic in the thesis I will defend. I will reveal a future which I hope will never come to pass.

First, I will analyze the representationalist philosophy still at the heart of our digital tools and digital infrastructures, particularly AI. I will explore cognitive representationalism through which our world becomes a resource at hands of managers. Then, I will shed light on narrative representationalism, which is a major move towards a digital multiplicity of our selves expected to be agentive upon the world through narration. Finally, I will try to theorize this new digital twinning by means of a parallel drawn by the French philosopher Michel Serres between the Egyptian divinity Ka and our digitality. In a short conclusion, I will put into perspective this twinning digitality of our identities with three artificialities of intelligence at stake in management and organizational design.

Digital twins as cognitive representationalism: the world becomes a resource.

Before digitality, representationalism was a central western obsession (Chia 1996; Chemero 2000; Chia and McKay 2007; Kaye 2014; de Vaujany and Mitev 2017; de Vaujany 2022, 2023). It is tempting to see in it the heart of western tropism. First of all, representing the world is an ancient practice. It is central to any attempts to understand our world and to make it intelligible (Merleau-Ponty 1964, 1995).

For representationalists, gaze and perspective require centers (Merleau-Ponty 1964). This movement is unexpectedly interwoven with the very birth and rise of management

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itself. Managing[1] means guiding something to channel, orientate, coordinate and most of all, control from a center. This tight relationship between representationalism (as a practical philosophy linked to modernity) and management became systematic during and after World War II (de Vaujany 2022, 2024). Both the industrial mobilization, WWII, and the Cold War systematized representations as part of management processes. Basically, both soldiers and managers needed an integrated view of the battlefield and the decentered set of plants and RD centers involved in the war effort. They needed a single perspective on the threats conveyed by planes, rockets and soon, missiles, likely to come from anywhere at any time. This required an integration of all representations into the same Euclidean time–space. The whole surface of our planet became the object of a unique, connected set of representations preceding decision-making.

This was made possible by new concepts of information, new digital (and not analogical) techniques, and an increasing number of protocols and network techniques that enabled this shift toward digitality. Management was the main concern to reach this new semiosis,[2] from management as the new executive power at the White house (peaking at 200,000 employees in 1945) to the more ordinary management of the companies that were becoming the key entities of our capitalism (de Vaujany 2022, 2024). Beyond the calculus of Taylor and so-called "scientific managers", management after the World War became indistinguishable from digitality both as process, product and most of all, semiosis (Ibid).

Controlling deviation from rational norms, "scientific management" required and still requires landmarks, i.e. ideal things, gestures, people and processes.[3] This concern dates back to the Medieval Western belief in *equilibrium* (Kaye 2014) and its later extension with cybernetical feedback loop and circular control concepts (Wiener 1948; Pias 2016; de Vaujany and Mitev 2017; de Vaujany 2022, 2024). Both quests for equilibrium and control largely fed the drivers for representing gaps, distances from ideal norms and more generally, imbalance.

Beyond the rational design of their organizations, managers needed and still need representations and representational techniques (Chia 1996; Lorino 2018). Digitality, as a representation and integrated set of representations, is likely to cover the world and to constitute its homogenous, practical time–space to meet a deep and urgent managerial expectation during the war. But representation involves something being represented and something representing, subjects and objects, external and internal entities (Chia; 1996; de Vaujany and Mitev 2017). In this vein, the world becomes a disposable resource. If something is represented, put into correspondence with reality, it is likely to be isolated, made controllable. Representational techniques and management became an inseparable duo from the 30 s and the 40 s (de Vaujany 2022, 2024).

With the world's increasing digitalization, experience itself has gradually become a resource behind the screen. It has been merged into the massive databases, networks, formal neurons. From the 50 s till the late 80 s, the whole world became twinned with and for digitality. The web reinforced this trend from the 90 s, with all these behaviours producing the traces of our current surveillance capitalism (Zuboff 1988, 2015, 2019).

Today, everything we do can be tracked (de Vaujany 2022, 2024). Digital semiosis integrates our activities, treats them and enacts them as extensions of our own experience, i.e., images of us. Our profiles on TikTok or Instagram act for us. They actively represent us, and this representation is deeply problematic in this sense that our representational relationship with the world becomes more and more problems-oriented.

You need to rent a car? Go on the web. You need to buy a book? Buy it on the web. You need to find information about an entrepreneur you're likely to work with? Google her. You have to do a report at the university for your teacher? Use Wikipedia. You want a good first start with a logical structure for your report? Use ChatGPT or Bard. In the mass of digital information stocked on the web and beyond, an infinite number of problems and solutions are expected to be unveiled by the digital process of cognition. The world is not mysterious anymore. It is just superficially and individually problematic (Gherardi 1999; Marcel 1951). Managers and customers spontaneously ask digital tools to solve their problems. Neither problems nor questions are asked gradually, and neither openness nor co-problematization feed collective inquiries (Lorino 2018; de Vaujany and Heimstädt 2022). The perimeter of people, topics and objects linked to the exploration pushed by digital problems are quickly stabilized. Experts or so-called experts lead the way, making the process weakly democratic.

Since the 40 s, management and managerial processes have been more 'apocalyptic' than ever in the etymological sense, i.e. *apocalypsis* in Greek, which means the process of revealing, unveiling what is going on (reality) or an imminent future being formed (de Vaujany 2022, 2024).

The digital brain, the Von Neumann computer, increasingly used by managers after WWII, becomes central in this experience. Behind the screen, both problems and solutions to requests are waiting to be revealed (see Fig. 1). Digitality

[1] Coming from the Latin *manus*, meaning hand. This prehension is part of a common genealogy with cybernetics in digitality at large (see Introna 1997). At some point, digital techniques equipped the hand of management. Through digitality, management could control the world.

[2] A relationship with meaning and modes of sense-making.

[3] Processes became an obsession for managerial control with and after WWII (de Vaujany 2022, 2024).

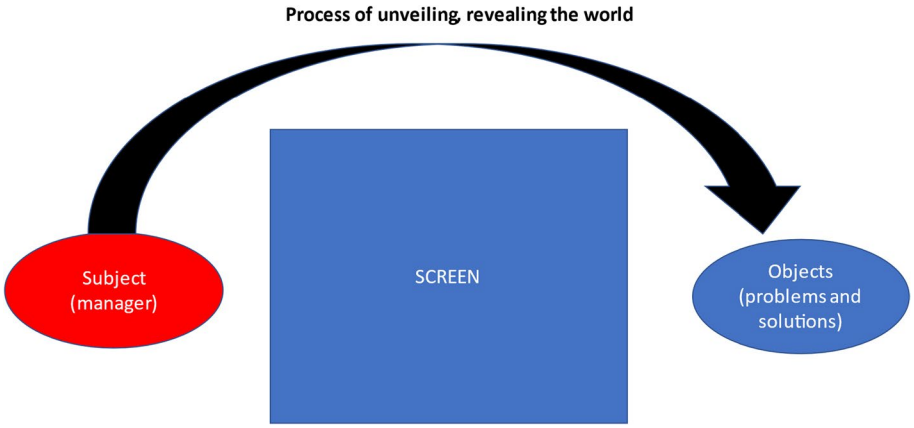

Fig. 1 Cognitive representationalism as a process of unveiling the world behind the screen

itself is the philosophy and set of consistent techniques likely to uncover the world.

In this direction, managerial processes become non-creative, authoritative, and closed (focused on interactions with the tool supposed to be by itself an opening to the world). Their truth is monolithic and univocal, waiting out there to be disclosed, without any need to discuss it, to negotiate it, to experiment it.

Today, managerial processes do not feed an inquiry, an incremental process towards relevant questions or solutions designed openly, creatively, playfully and collectively (Lorino 2018; de Vaujany and Heimstädt 2022). Communities of inquiry do not emerge. Digital infrastructures directly engage with relevant topics and actors, often with biases towards similarity. They aim to provide the 'best' answers possible to represent the world. These representations are intuitive and user-friendly, aligning closely with the cognitive schemas and preferences of their users. Each individual may feel confident in their perspective without realizing that digital platforms immerse them in personalized bubbles comprised of people, ideas, and things they already favor and feel connected to. We are all confined within a world shaped by our past activities, transformed into data.

During and after WWII, with its radical pursuit of speed and integration, managerial processes shifted away from inquiry towards a focus on calculation and requests. Problems became naturalized, leading to naturalized solutions. However, alongside traditional managerial rationality, another dimension has emerged: narrative representationalism. This aspect is becoming increasingly active through digital narratives that combine texts, images, sounds, and other sensations.

The digital twin as narrative representationalism: life is erased around a continuous flow of pre-assigned selves

Since the 1990s, with the proliferation of network-based, mobile, wearable, and nearly invisible digital technologies (de Vaujany 2022, 2024), the digital landscape has evolved beyond mere cognition of a static world, traditionally seen as stable, inert, and unchanging. Instead, digitality has taken on an agentic quality and has, in many respects, come alive. Cyborgs now permeate our daily lives (Haraway 1987), and we have, in various ways, entered a 'post-human' era (Hayles 1999). Hybrid entities now inhabit the world and shape its narrative.

The evolution of AI reflects a shift from symbolic to connectionist intelligence (Haenlein and Kaplan 2019; Buchanan 2005). Traditional rule-based, explicit AI is now often complemented by deep learning, which relies on massively neuron-based systems. This transition was foreshadowed by discussions at the Macy Conferences long before the 1990s (Pias 2016; Dupuy 2009; Hayles 1999; de Vaujany and Mitev 2017). Essentially, McCulloch and Pitts proposed modeling neural logical functions through interconnected 'neurons' that process flows of information (weighted connections) to produce an output (see McCulloch and Pitts 1943; Pitts 1952). The goal was to train the system to predict the correct output based on past data.

Every year, new techniques are developed to incorporate multiple layers of neurons and facilitate their interaction as networks rather than linear sequences leading to a predicted outcome. Moreover, the utilization of genetic algorithms and convolutional networks has greatly expanded the variety of pondering matrices experimented with. This marks the well-known shift towards connectionist AI and brings along the issue of explainability. Essentially, AI designed in this manner can be highly powerful in terms of prediction, yet it lacks any explanation or theory regarding the relationship between data and prediction, rendering it essentially a black box. Although many AI tools today integrate symbolic and connectionist AI approaches, the fundamental problem persists.

But digitality is not only expanding its intelligence. It is also expanding its eventfulness and agency. Workflows

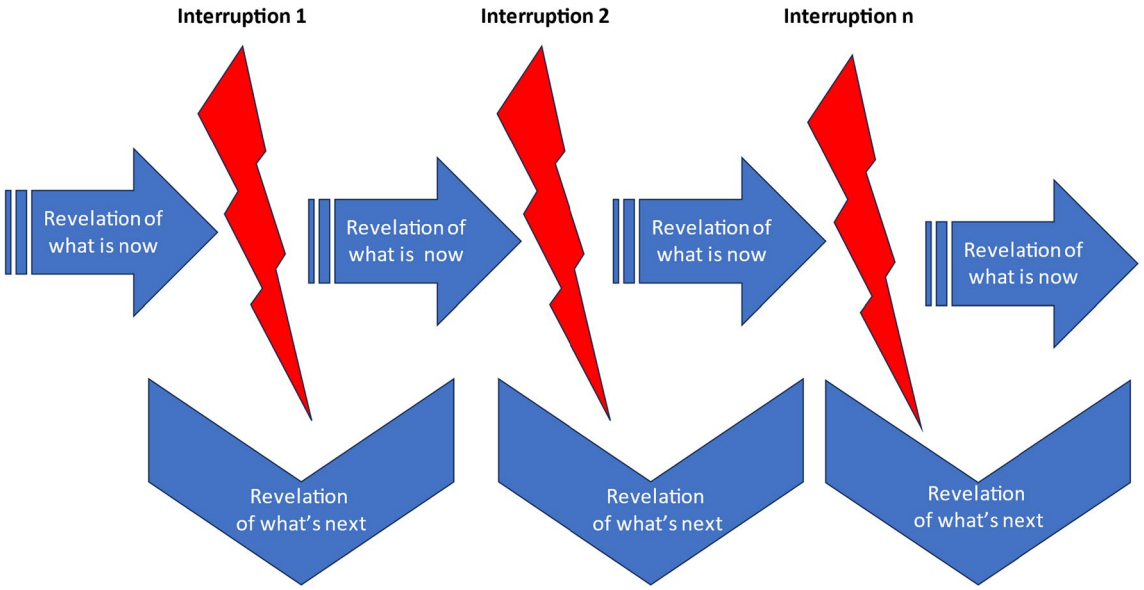

Fig. 2 The One Thousand and One Nights process sustaining digital processes

that incorporate robotics with digitality and automated control systems act upon the world and its narrations.

Digital platforms narrate current events, making digitality the core of our news consumption. Platforms select the latest hot events and the possible trending topics using social media, search engines, podcasts, videos, etc. Digitality pervades every aspect of our world. We see through digitality, as it is both the twin of experience and a medium through which we can enjoy immersive virtual experiences.

Ultimately, it's about representation—depicting external realities and constructing alternative theatrical worlds alongside them. Military investments, particularly those by the US army during WWII or the Cold War era, changed our planet. The need for an integrated, real-time representation of the battlefield on a global scale led to substantial financing and innovation in networked, computerized tools. Computerized tools were massively financed by the US army till the end of the 60 s and played a crucial role in digital innovations after the 80 s (e.g. in the inception of web technologies) (see Kirsch 2012; Bousquet 2008). The conquest of space with the NASA in the atmosphere of a cold war also reinforced this trend.

In today's world, objects aren't merely tracked and duplicated. Since the 1950s, with the advent of AI, digitality has evolved beyond processing information to offering prophetic narratives. Our techniques are increasingly agentive, shaping our experiences. Take our Facebook accounts, for example: they not only represent our various selves—our vacation self, work self, home self—but also act on our behalf by transmitting our data, connecting us with others, and influencing our actions and interactions.

In addition to the visual aspect of digital technology and interfaces, AI has become profoundly conversational, allowing for natural interactions through chat and conversation. It increasingly generates narratives that users can engage with, react to, and become part of. Consequently, AI responds to questions in a narrative and natural manner, simulating human storytelling. Utilizing vast text corpora from the web, platforms like ChatGPT or Bard aggregate and condense relevant texts to provide answers with varying degrees of complexity, placing the user's 'I' at the center of the narrative. Users can choose to interact with specific parts of the narrative, request summaries, or delve deeper into the conversation. Within the text, users find themselves addressed directly, assuming the role of an eager reader engaged in the unfolding narrative.

Once more, this practical philosophy embodies a deep representationalist perspective. A viable answer exists, vibrant and dynamic (perhaps even more so than in the realm of pure cognitive representationalism). AI must articulate it with varying degrees of creativity, unveiling and revealing it. However, unlike pure cognitive representationalism, its process is increasingly a material-narrative one. Digitality is profoundly apocalyptic in nature, constantly informing us of ongoing movements and shaping our imminent future. It operates in a manner reminiscent of the storytelling tradition of "One Thousand and One Nights" (see Fig. 2) continuously disclosing, interrupting, and constructing cliffhangers that drive novelty and foster impatience (de Vaujany 2022, 2024). Post-war digitality aligns with the type of machine described by Deleuze and Guattari (1983), which they defined as follows: "A machine may be defined as a system of interruptions or breaks. Every machine, in the first place,

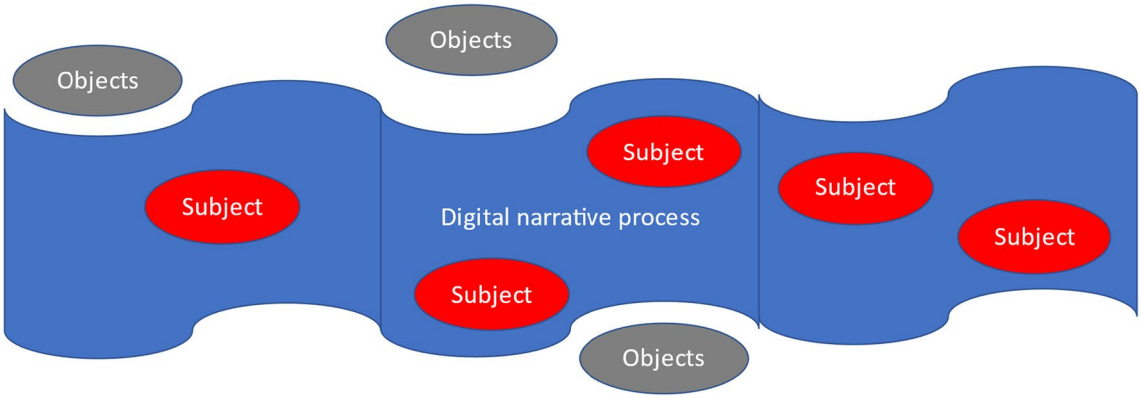

Fig. 3 Digital process unveiling the world

is related to a continual material flow (hylË) that it cuts into" (p. 36).

Interruptions serve as opportunities for subjectivation, allowing for the creative production of selves while awaiting what comes next (see Dawney 2013). However, in the realm of digitality, these interruptions are transient and uncomfortable. Curiosity is constantly propelled forward, and desire is embedded within the flow itself, leaving little room for self-awareness and reflection. We are immediately thrust into the next moment, and anyone or anything that fails to keep pace—whether managers, customers, citizens, or other identities—quickly becomes perceived as dull or stagnant. Life takes on a cold, mechanistic quality. To maintain the continuity of these flows, it becomes imperative for all of us, and the machines we are a part of, to continually push forward, to escape the stagnation.

Indeed, the patience advocated by Deleuze and Guattari (1983) for the nomads seems to vanish in the context of managerial apocalypses—the incessant narratives of our managerial capitalism. The skill of patience, once cultivated in the nuances of experience, felt in the tranquility of a landscape, and nurtured through the anticipation of a hidden hunter waiting in a tree, is eroded. The ability to find beauty in the slow movement of the morning sun is overshadowed by the relentless pursuit of movement and speed for their own sake. Any interruption becomes painful, hindering subjectivation and making it seem impossible. Our impatient alter ego is always one step ahead, urging us to move forward without pausing to allow ourselves the time required to become who we are meant to be.

Both social media and generative AI illustrate these trends by crafting narratives that incorporate sounds, images, and texts significant to our personal development. Social media platforms disseminate news, rumors, gossip, and conversations, reflecting what's happening within our networks and globally. Importantly, this information is often shared by individuals with similar social backgrounds, values, and consumption habits, fostering homophily. Consequently, these platforms immediately situate us within the context of their expression, providing us with a space and identity within this shared digital sphere, shaping our future experiences. Our subjectivities are intricately woven throughout these narratives (see Fig. 3).

The entire digital world revolves around the self, anchored within its predefined box in the interface. Platforms like Instagram, Facebook, ChatGPT, or Zoom position us at the center, creating the illusion that technology caters exclusively to our needs, disregarding the perspectives of others. In reality, our interactions are primarily with our predetermined digital selves within the narrative. Facebook, Google News, Instagram, and various AI-based tools don't immerse us in the world; instead, they present a world closely aligned with our past activities—our purchases, usage patterns, movements, and social networks. They bring to us a world that is very close to what we are already as traces of our past activities (of purchase, use, geolocalized movements, network, etc.). They bring ordinary twins both to us and to the world**.** Beyond the "digital twins"[4] designed by engineers, all our ordinary activities continuously feed the representational entities acting for us.

To enhance its responses through learning, both human effort (involving individuals working on technology, cleaning its data, and refining its answering methods) and technical resources (where AI often plays a role within a broader infrastructure connecting different databases, AIs, and algorithms) are summoned to assist us (Casilli 2019).

I believe that this process of twinning the world is dangerous. Digitalization generates digital replicas of our multiple identities, inhibiting interruptions that could nurture

[4] In the sense of the special issue this paper is part of, i.e. digital simulations and emulations representing an external entity (often, a technical entity).

profound, authentic selves. Our past, present, and future identities are duplicated. Our images, voices, and behaviors continually operate on our behalf in the digital realm. They are activated and sustained by the system. We need not question them, as they consistently appear in appropriate contexts, seeming plausible, vibrant, and often slightly better than our perceived reality or potential. This phenomenon is becoming entrenched in our everyday lives.

What is the next step? Granting managers the ability to possess their digital autonomous clones (see de Vaujany 2023)? Not just avatars, but genuine digital twins decisively representing us during meetings we cannot attend or online speed-dating events we lack the time to participate in (and watch the video later)?

I foresee this phenomenon becoming increasingly prevalent: the troubling temptation to prolong life, not through transhumanism and the extension of our physical bodies and longevity, but rather through the expansion of our digital selves as meaningful representations of our past, present, and eternal essence. In the near future, there may arise a need to request the right to digitally cease existence, both for individuals and organizations, either on our behalf or for our loved ones.

The dangers of twinning our selves: a world full of Ka

With the managerial apocalypses I described in the previous section, I am increasingly persuaded by the existential threat posed by the potential loss of our identities, rather than the concerns raised in the media about our jobs. In one of his recent interviews, Michel Serres (2018) offered a compelling perspective on digitality. He explained as follows: "We [Western people] believe in the duality of soul and body. In contrast, the Egyptians believed in three components: the soul, the body, and the Ka, the double, a kind of ghost that accompanies you everywhere. When I see people in the street, captivated by their cell phones, I feel they are with their Ka, their double! The Egyptians have returned! When we lose our cell phone, panic ensues… We feel as though we're losing our identity!" (2018, p. 10).

Returning to Egyptian mythology, Michel Serres compares digitality with the "Ka" (see Fig. 4), this ghostly double that would walk alongside us. The comparison seems most apt. The laptop, with its brand, aesthetics, and price, mirrors and echoes our identity. Apps such as social networks, online games, and mobile apps do more than create avatars; they hinder our deep subjectivity, generating increasingly autonomous doubles—individual digital twins. In the near future, artificial intelligence (AI) could 'assist' us in generating multiple Kas (a plurality that was once the prerogative of the gods among the Egyptians).

Fig. 4 The Egyptian god Ka (Egypt Archive website, Copyrighted free use)

The latest evolutions of AI do not only extend and distort us, they increasingly shape our decisions in a specific time–space. If most contemporary tools target our preferences and cognitive styles (by giving us information close to our centers of interest and our networks[5]), they give us the possibility of replication and twinning in the strict sense. Intelligent software, based on our voices, can already manage our calls[6], carry recurrently and modulated messages on social networks, generate our presence on videos (not without ethical questions[7]). Amid mounting time pressures and the allure of multitasking or even pluritemporality, we are evolving into digital multiplicities.

The return to Egyptian mythology adds an intriguing layer of meaning to this movement. According to Egyptian

[5] At the risk of homophily.

[6] A method already explored by Google a long time ago: https://www.lemonde.fr/pixels/article/2018/05/16/le-terrifiant-assistant-google-qui-appelle-le-coiffeur-a-votre-place_5299701_4408996.html

[7] This is not without raising several ethical questions: "Google Assistant making calls pretending to be human not only without disclosing that it's a both, but adding "ummm" and "aaah" to deceive the human on the other end with the room cheering it… horrifying. Silicon Valley is ethically lost, rudderless and has not learned a thing." (Hern 2018).

beliefs, humans are composed of seven elements: the body, the Shout (shadow), the name, the heart, the Ba, the Akh, and the Ka.[8] Egyptian metaphysics surpasses the body–soul dualism or the body–soul-spirit triptych found in Western cultures. While these elements coalesce during earthly life, they become dissociated at death, leading to invisible and problematic distinctions (requiring funeral rituals to establish a new balance).

I am not going to detail the seven elements here. Instead, I will focus on two in particular: the "Ka" and the "shadow". My argument is that, until now, digitality has essentially contributed to "shadows" and that the Ka trend is more recent and will be amplified by AI.

For the ancient Egyptians, the Ka served as both an imperceptible counterpart and a vital energy, embodying the capacity to execute all life's actions, tailored to each individual. It also symbolized honor and collective well-being. The Ka perpetuates itself, upheld and shared among others. Commemorating it (often through communal meals) could signify upholding and honoring a shared principle. The Ka endures beyond death, forging a potent intergenerational link (as exemplified by Osiris being depicted as the Ka of Horus). Death is marked by the separation of the Ka from the body, their divergence. Simultaneously, this moment of Ka transmission underscores generational or dynastic continuity. Even devoid of a physical form and the activities that sustain it, as well as the memory thereof, the Ka persists, albeit dormant.

The Shout served as one of the tangible elements of each individual and the gods in Egyptian mythology. According to this belief, we all possess a shadow that persists beyond us. It represents an aspect of our personality, existing alongside us, both externally and internally. In certain depictions, shadows are depicted as multiple black ants accompanying the deceased on their journey. Serving as substitutes for Ushabtis, they undertake the most arduous and repetitive tasks that the deceased, and even the living, wish to avoid. The shadow embodies the actions we once performed but no longer engage in, the routines, and behaviors carried out without enthusiasm or conviction.

The digital sun has already multiplied these shadows around us. Like a Shout, it streamlines writing, amplifies the dissemination of our messages, and automates an increasing array of repetitive tasks, including complex ones. Much like the scarcely perceptible black ants beneath us, digitality permeates our existence. With the proliferation of Facebook accounts and digital data, it also outlasts us, becoming a part of our digital legacy.

But digitality can also increasingly become a Ka. Beyond the myth already present in the science fiction of a robot that would have all the features of humans,[9] it already reproduces certain of our individual human traits, both emotional and cognitive and social, or rather all of that at the same time, and always partially. If creativity, consciousness, and emotions have traditionally been regarded as unique attributes of human beings, AI appears to possess additional capabilities, including reasoning, learning, and a form of imagination. This enables AI to comprehend human emotions, perceive humor specific to humanity, and even compete with humans in domains previously considered exclusive and seemingly unattainable, such as art and culture (Gatys et al. 2015).

Perceived alternately as an opportunity or a source of competition for human beings, AI elicits a spectrum of emotions ranging from hope to apprehension, fascination to aversion, fuelling various fantasies and critiques. AI complements human creativity. If the Egyptians did not make an ontological distinction between humans and the Gods, are modern technologies and AI capable of giving people the ability to equal the power of the Gods (Harari 2016) (i.e. creating life, stopping the ageing process, or even conquering death[10])? Moreover, if AI contributes to replicating our deepest individual traits autonomously and intelligently—such as voice, facial features, modes of reaction and expression, perceptions of emotions, culture, art, and creativity—then digital twinning may emerge as a significant aspect of self-replication.

[8] Disturbingly, compared to monotheistic religions, Egyptian religions made no ontological distinction between humans and gods: "In exposing the problems of Egyptian anthropology, it appeared that a difference ontological between man and god did not seem to exist, since it is possible to define them in relation to the same components such as the Ba, the Ka, the name, the heart, the body, etc. The distinction is to be sought elsewhere, and essentially in the relative proportion of real and imaginary, without there being a clear boundary between one and the other, since the pharaoh, very real, belongs by certain aspects of his function to the divine world, while the gods identify themselves with their statutes or their sacred animals". (Bonnefoy, 1981, p. 324).

[9] I think in particular of the film "Her" by Spike Jonze, where the main actor falls in love with an intelligence artificial, Samantha, capable of emotions and endowed with a sensitivity allowing her to react exactly as a human being, with accuracy, intuition and a degree of reasoning allowing a perfect reading of feelings humans (e.g. joy/sadness distinction), an extremely fine understanding of social mechanisms, and a perception human emotions and humour.

[10] Like the Ka, our new digital doubles could extend and oversteer us. They could pass on our ideas, our values, and our ways of reacting to the next generation. One more project for the transhumanist movement and the Calico branch of Google…

Conclusion: the artificialities of our intelligent designs as digital twins, three historical modalities?

Before and beyond AI, the endeavor to comprehend the world and engage with it has always been a central preoccupation of philosophy. In many Western societies, equilibrium has long served as a fundamental principle guiding the design of tools and organizations. During the Middle Ages, nature was perceived as governed by principles of balance and harmonization. The focus was on not disrupting these equilibrium processes, which were believed to be overseen by transcendental divinities regulating the world from beyond. Calibration tools and market mechanisms swiftly emerged as central processes within the 'natural' equilibrium of the Western worldview, both reflecting and nurturing it. Money and trade exchanges became integral components of these natural processes. Moreover, markets were envisioned as potentially self-correcting, a concept that was formalized in the neoclassical school of economics in the nineteenth century, notably through the work of Léon Walras and his general equilibrium theory.

Interestingly, from this perspective, organizing processes and designing organizational structures involved facilitating markets and creating market infrastructures that could bring together supply and demand, thereby activating their balance and regulation through prices. Representing the world thus entailed (and continues to entail) portraying the state of equilibrium of the world, from the physical weights of traded materials to the prices of goods and currency in more abstract markets. Representation was then a highly focused process centered on points of equilibrium or disequilibrium. Cultivating the intelligibility of a situation also involved expressing the state of balance and depicting potential adjustments to this process.

From the nineteenth century, rational-legal systems held a different meaning. More and more, organizing became a 'human' thing—a modern process fed by rationality and rational subjects designing rules and norms that needed to be respected. This Weberian society involved the possibility to move away from the ideal-state and to find ways to come back to the optimal[11] state.

Beyond equilibrium-based approaches, feedback loops and cybernetic methods of designing artifacts began to assert themselves in Western societies in the 1930s and gained prominence in the 1940s and 1950s (de Vaujany 2022, 2024). Electronic brains and computers introduced new modes of comprehending the world beyond the narrow focus on equilibrium points, although equilibrium remained important in the post-war period. In contrast to tools and philosophies based on equilibrium, feedback-based approaches to engaging with the world entailed a shift towards representations focused on control for managers. Information now needed to be transmitted and presented in a manner comprehensible to its recipients. These recipients sought to make the vast amount of information available to them understandable, a task far more complex than before. Then came the ingenious idea of the 1980s: placing them at the center of a screen; making them the focal point of a digital interface; imparting to each user the sense that all this information is 'just for them', that each viewer-user is the center of this universe. This personalized, one-to-one, peer-to-peer digital experience took precedence from the 1980s with the advent of so-called user-friendly computing.

Thus emerged our digital twinning process. We are not the center of the world. All perceptions are indeed multiple and primarily decentred (Merleau-Ponty 1945). However, our computers produce digital representations of ourselves which become pre-assigned and unique. The miniaturization, user-friendliness and anthropomorphised interfaces even make them transparent. We are in our own immediate company.

More recently, following equilibrium-based and cybernetic approaches to comprehending and engaging with the world, digitality has gained significant agency. Increasingly, digitality operates beyond the immediate context of our interactions with it. It functions either before or after our presence, and our digital selves are becoming increasingly manifold, acting intelligently and autonomously in the world. The widespread adoption of deep learning may potentially elevate this third mode of intelligibility, which does not necessitate the co-presence of digital and non-digital twins, above the other two. In this context, digitality takes on a more Darwinian and evolutionary character. It generates and selects its own behavioral patterns and modes of comprehensibility or incomprehensibility.

This third mode of twinning, which has already started, is both exciting and frightening. How will organizational design re-invent itself from that? How will management reconfigure its practices and philosophies? How can we invite the three artificialities of intelligence (equilibrium, control and adaptation) to an open conversation with a playful inquiry? How can we collaborate with AI and digital twins much more than being used and erased by them? Overcoming these challenges will be crucial to avoid a world in which resonance and democracy would fully disappear.

To be continued…

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Data availability Not applicable.

Code availability Not relevant for this research.

[11] Taylorism claimed a 'one best way' to do things.

Declarations

Competing interests The authors declare that they have no competing interests.

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