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Collaborating with artificial intelligence in healthcare: How collective imaginaries of AI's future shape its reality

Roanne van Voorst[1]

Abstract

This article explores the role of magical beliefs in shaping the rapid integration of artificial intelligence (AI) in healthcare. Drawing on ethnographic research across hospitals in seven countries, it argues that healthcare professionals' perceptions of AI as an autonomous, inevitable force significantly propel ongoing development and investment, despite frequent frustrations, errors, and ethical concerns. These beliefs—centered on notions of AI's self-learning, unstoppable progression, and perceived agency—function as a form of collective imagination that sustains hope and motivation, even in the face of empirical limitations. While clinicians are aware of AI's flaws and the ethical dilemmas it raises, they continue to work around its shortcomings, driven by a conviction that a flawless AI will eventually emerge through some form of "magical" development. This perspective underscores how shared magical beliefs imbue AI with agency and inevitability, shaping future trajectories beyond material and discursive forces. Recognizing these beliefs offers new insights into the socio-cultural dynamics underpinning technological adoption in healthcare and raises questions about the influence of collective imagination on policy, regulation, and ethical frameworks. Ultimately, this analysis highlights the need to critically engage with the symbolic and cultural forces that sustain the rapid rise of AI, emphasizing that understanding these shared beliefs is crucial for shaping more realistic and ethically grounded futures of healthcare technology.

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Artificial intelligence, healthcare, trust, magical belief, sociotechnical imaginations

Introduction: magical AI

Worldwide, healthcare professionals—doctors and nurses—are increasingly collaborating with artificial intelligence (AI) to make diagnoses and decisions. This article explores this expanding partnership, grounded in ethnographic research conducted across hospitals in seven countries. I argue that the rapid growth of human–nonhuman (AI) collaboration is not solely driven by industrial motives or by growing trust in the technology, as much of the relevant literature has already pointed out, but also by what I consider a *magical belief* in AI's potential and practices meant to support its imagined future development.

Applying the concept of magic offers a novel perspective on the drivers behind AI's swift expansion. In anthropology, magic has traditionally been defined as activities through which individuals compel the supernatural to act in specific ways (Stein et al., 2024), often with healing purposes (Dols, 2021). Many definitions emphasize magical *practices*—actions undertaken to influence supernatural forces, such as spells or rites, or mannerisms related to superstitions (Singh, 2021). Crucially, however, I want to point out that these practices rest on underlying magical *beliefs*: the conviction that certain actions or rituals *are able to* produce desired outcomes, even if, or especially, as is explained in the Introduction to this Special Issue, when the processes involved are opaque or mysterious. We don't know how it works; but we (think we) know that it works.

The concept of magic, or more specifically magical belief, refers to a conviction that certain actions, words, or objects can influence the world by harnessing supernatural or unseen forces (Malinowski, 1979). As I will later elaborate, these beliefs assume a direct relationship between humans and supernatural entities, which can be manipulated through specific ways of thinking and acting. They are typically shared collectively within societies or subgroups, becoming ingrained in their collective thinking and feeling. In this article, I focus on how these magical beliefs influence medical practices and, specifically, the development of AI in healthcare.

In this article, I invite readers to consider that the healthcare professionals amongst whom I conducted ethnographic research share collective magical beliefs about AI. Firstly, they share an underlying belief that AI, as an autonomous object, can influence the world by harnessing supernatural-like forces: "it" will solve the anticipated healthcare crisis. Secondly, there is a strong belief that AI will autonomously continue to improve, despite many clinicians not fully understanding how it functions, nor them understanding how its current technical issues could be solved. Many professionals express that AI develops "by itself," neglecting their own active contributions—such as feeding data, refining algorithms, and investing time and energy into working with it. They see AI as a force that "moves" independently, and consequently, accept its ongoing development as an unstoppable natural process. They perceive AI as an agent that "just flies," with little

or no human control or intervention—an autonomous force whose development is seen as inevitable. Importantly, this belief persists despite ethical concerns about its opacity, and also despite people's common experiences with its questionable performance.

Complementing this, another related belief is that humans are powerless to oppose or halt AI's progression, and therefore, their best option is to work with it, rather than against it. In the words of a nurse: "There is no use in complaining. AI has us in its power, right? It's just what will happen. We will simply have to work with it and train ourselves better so we can keep up." Many other nurses and clinicians, too, consider AI's development as a force beyond human control, leading them to focus on adapting to and working around its deficiencies rather than resisting it. They adopt practices that help cope and manipulate flawed or limited AI systems—believing that, ultimately, AI will solve the problems they face.

It would be inaccurate to confuse this belief with fatalism, which typically entails passivity and inaction based on the conviction that nothing can be changed. In contrast, the magical beliefs of my interlocutors reflect an active engagement, as professionals actively working to support and influence AI's autonomous development despite perceiving it as unstoppable: they see it as their responsibility to comply and work along with "it."

This allure of AI in healthcare can be likened to the mystique surrounding a flying broomstick, which is imbued with the power to transcend the ordinary and transport witches to uncharted territories. Likewise, the development of AI brings forth my interlocutors into an imagined future, of which I argue in this article that they help it come into being precisely because of their collective belief in it, which is echoed in mythical narratives and symbols shared with them by industry stakeholders at meetings and medical conferences. While I have attended many such events as part of my fieldwork, in this article, I do not focus on industrial narratives themselves but on how they are echoed, internalized, and enacted within hospital wards and clinical mindsets. By continually repeating imagined possibilities and potentials of AI, the doctors and nurses in the research presented here not only construct a mental representation of a future in which AI occupies a central role in healthcare; they also come to believe this is the only viable future and practically facilitate a reality that, indeed, resembles their imagination.

One of the main arguments in this article is that these collective magical beliefs hold force: they significantly propel AI development forward. They serve as a form of hopeful imagination and collective conviction, motivating continued time-and money investments, adaptation of practices, and increasing reliance on AI—even when practical challenges or disillusionment are evident.

Many scholars have written about this rapid rise of AI development, attributing it either to technological innovation or to the industry's promotion of this technology driven by financial incentives (Van der Vlist et al., 2024) or to a surveillance logic (Zuboff, 2023). In this paper, I propose that another significant, yet less examined, driver is professional caretakers' shared magical belief in AI's agency and inevitable future dominance. This collective conviction sustains ongoing efforts, investments, and acceptance even in the face of disappointment or ethical dilemmas.

My main theoretical proposition in this article is that magical beliefs in AI's potentiality, and related practices, align with the anthropological understanding of magic as

activities aimed at influencing the supernatural for instrumental ends (Singh, 2021). The collective belief that AI will dominate healthcare futures sustains and accelerates its development, regardless of current limitations or ethical concerns.

In particular, this phenomenon echoes anthropological explanations of magic's effectiveness: beliefs and practices that lack a rational basis but nevertheless produce tangible effects—such as continued investment, institutional adoption, and social acceptance. The language surrounding AI further reinforces its perceived inevitability: the narrative that AI is an unstoppable, autonomous force over which humans have limited control.

Several other scholars have described the socio-technical imaginaries that are strategically narrated and employed by the industry to attract new, lucrative investments (Lupton, 2020; Tutton, 2021). For example, Mosco (2015) describes narratives around cloud computing and big data as promising transcendence—drawing users into fantasies of unlimited knowledge and predictive power. Similarly, the industry often promotes a techno-optimist imaginary, emphasizing AI's purported inevitability and autonomous agency (Lupton, 2020; Tutton, 2021). These narratives contribute to the collective magical belief that AI will shape the future of healthcare, despite the material and practical realities that often contradict such expectations; during my ethnographic fieldwork, it became clear that my interlocutors also integrated such beliefs.

By putting magical beliefs and practices at the center of the analysis, this article offers a novel interpretation of AI development that complements current scholarship, while departing from the latter's focus on the material and discursive forces driven forth by the industry. Recognizing the material drivers and impact of discursive PR strategies behind AI investments, this article aims to expose yet another reason why AI development is accelerating: the belief that the future of healthcare will be dominated by an autonomous AI; indeed, that AI holds a natural force, agency and autonomy of its own; and the consequence of such beliefs, namely supporting practices that are undertaken while AI "holds doctors and nurses in its grip."

To develop my argument, I will first discuss relevant literature around industrial techno-imaginaries and, although my focus lies not with the materialist realities of corporate driving forces, I will point towards relevant links between the developers of and investors in AI, and the discursive, techno-optimist narratives the industry uses to push AI's growth. Thereafter, I discuss anthropological literature around magic and magical beliefs. Next, by sketching how I, together with the PhDs and Postdoc in my research team, conducted fieldwork in hospitals, I provide a glimpse into the daily work of professional caretakers and the nonhuman technology (AI) with which they work. Setting the scene shows, on the one hand, how many individual caretakers struggle, on a daily basis, with the disappointing functioning of AI. Not infrequently, they deeply distrust it, and spend much time and energy to maintain a standard of good care for their patients, despite the errors that AI makes. On the other hand, it becomes clear from my sketch of the contextual setting in which my interlocutors work that the present stressors on healthcare systems as experienced by them are an important reason why there exists such a strong, collective, indeed magical belief in AI as taking center stage in healthcare, in the imagined, nearby future.

Literature discussion

Techno-imaginaries and tech optimism

Scholars before me have argued that both technological advancements and tech solutionism, narrated by the Industry as part of a PR strategy, underpin the widespread belief in AI as a transformative force in healthcare (Gardner and Warren, 2019; Morozov, 2014). Over the last few decades, a growing body of literature has examined the industrial, narrated imaginaries associated with advancing tech-science, from a variety of perspectives (Breuer et al., 2023; Breuer, 2024). For example, Tutton (2021) examines how Silicon Valley entrepreneurs, notably Elon Musk, invest in space technologies like reusable rockets, projecting a techno-optimistic, libertarian future in which space expansion will bring positive social change. These visions are conveyed through narratives of adventure and science fiction, fueling public imagination and investment in lucrative technologies. Taşkale (2025), also explores the affective politics of what in their article is called "reactionary futurism" in Silicon Valley, a reactionary ideology that rejects democratic control and promotes a depoliticized, corporate-driven utopia fueled by fears of losing influence and resistance to political accountability. This affective ideology consolidates power and deepens class and market inequalities. Writing more specifically about the topic of AI, Bourne (2024) investigates how AI hype is embedded within promotional culture, emphasizing the strategic deployment of emotions and affect to sustain enthusiasm and growth in AI, raising important ethical questions about the manipulation of affect in the process. Complementing this, Orrego (2023) critically analyzes how Silicon Valley's imaginaries (about AI and other technologies) extend globally, functioning as hegemonic, imperialist visions of techno-capitalist expansion that often overlook social inequalities and environmental concerns.

One of the most well-known definitions of what such "sociotechnical imaginaries" are and how they work to promote technologies is posed by Sheila Jasanoff and Sang-Hyun Kim (2019), who describe sociotechnical imaginaries as collectively held and performed visions of desirable futures (or of resistance against the undesirable) that are also animated by shared understandings of forms of social life and social order attainable through, and supportive of, advances in science and technology. In this perspective, such imaginaries are also embedded in the practices and organization of technoscience, shaping the trajectories of innovation and development. For example, techno-imaginaries can be crafted, narrated, and utilized by actors in the industry to promote a new technology in wider society (Pfaffenberger, 1992; van Voorst, 2025). Think, for example, of car-commercials showing photos of happy couples, on road to romantic destinations; or of laptops being sold with the suggestive promise of freedom in work location: with this technology, you could even work from a remote island! In this vein, imagination, and how it is framed into luring narratives, can be utilized in research as a source of reflection for ethical debates and as a tool to contest the instrumental reason that dominates technological discussions.

A range of scholars have already analyzed the current (largely utopian) corporate visions concerning AI, although there remains much to be studied—for example, we

know very little about how governments construct sociotechnical imaginaries of AI (Hoff, 2023). Breuer et al. (2023) offer an analysis of techno-imaginaries among engineers, and Hoeyer (2023) writes about the imaginaries of big pharmaceutical representatives of AI. There currently exists relatively little research about the imaginations of professional caretakers about their own field and the role of AI therein—this article aims to counterbalance this. We must consider caretakers' techno-imaginaries as important aspects of healthcare decision-makers' agency when it comes to decisions about the future use of technology in healthcare. In this article, I take one additional step: I approach the techno-imaginaries held by professional caretakers with a theoretical lens around magic, in order to emphasize the agency and effectivity that the AI-object in this belief holds. It is the collective magical belief in the future of an imagined autonomous AI that paves the way for key decisions made in the present about our relationship with it.

The current, widespread belief in AI as a transformative force in healthcare reflects both technological advancements and tech solutionism (Gardner and Warren 2019; Morozov, 2014). To put that in my own, simpler terms: one reason for the quick rise of AI has to do with technological advancements—more technological things are possible nowadays, than ever before. Another important reason is the willingness to keep investing in this advancement, which has to do with the high expectations we hold for it. This phenomenon—tech solutionism—parallels the increasing use of technology in, for instance, obstetric care (Davis-Floyd, 1994) and is marked by the attribution of extraordinary capabilities to technological systems, accompanied by a sense of optimism (Cook, 2017; Watson and Vaughan Wozniak-O'Connor, 2025). In the context of AI development and investment, this mindset assumes that larger datasets will enhance accuracy in predictions and policy decisions—a notion termed "AI orthodoxy" (McQuillan, 2022). Claims from software developers and technology companies reinforce this view, positioning them as the new "priests" of AI development (Thompson, 2019), leading to significant financial investments in AI initiatives in a wide range of fields, including healthcare (Hoeyer, 2023).

Optimistic narratives face plenty of criticism concerning AI's potential risks, for example, about its potential capacity for autonomous decision-making with harmful consequences. But both tech-optimistic and critical perspectives have in common that they each suggest that AI will significantly shape humanity's future. A closer look at AI-related discourses reveals they reflect a broader cultural ideology (Dehue 2014; Seife 2015). The prevailing narrative around AI development is framed as "inevitable" (Watson and Vaughan Wozniak-O'Connor, 2025). In the healthcare sector, this can be seen in promotions of the idea that technology is the sole solution to health system crises, such as understaffing (Delvecchio Good, 2001). This belief often justifies increasing reliance on AI by policymakers and caregivers, as echoed in media representations (Watson and Vaughan Wozniak-O'Connor, 2025; McIntyre and Pegg, 2018).

The techno-optimism surrounding AI has sparked collaborations among clinicians in hospitals, hospital boards, investors, and tech companies, who pitch their products at healthcare conferences (DeHue 2014). Despite acknowledging their lack of AI expertise, professional caregivers often dismiss these concerns by stating that the tech industry will

address and solve any issues (Hoeyer 2023). This narrative suggests that only the innovative corporate sector, in partnership with pioneering medical professionals, can resolve public healthcare challenges, a view that obscures the political agendas of technological advancements (Pfaffenberger, 1992).

The implications hereof are made concrete in Klaus Hoeyer's (2023) ethnography of the Danish healthcare system. Hoeyer describes medical professionals and other stakeholders at conferences, consequently echoing industry narratives about the "inevitability" of AI playing a central role in their daily work. This repeated story, so collectively held, inspires hospital managers to further invest in AI. Hoeyer found that speakers at tech-medical conferences often used the same graphics shown in PowerPoint slides, even if they rarely knew their source: together they help sustain high expectations of what AI will be and do in the future. It is precisely this expectation of AI's future role that drives investments—both in resources and time—into the technology, concludes Hoeyer; my own findings support that view, but add to it the impact of a magical belief in AI as an autonomous agent—I develop this argument below in the analysis section.

Magic and magical beliefs

While substantial industry investments in technological innovation and narrative-driven PR strategies—centered around socio-technical imaginaries—undoubtedly play a significant role in shaping AI development, they are not the sole driving forces. I contend that existing literature has insufficiently explored how these industry-crafted socio-technical imaginaries influence the beliefs of AI users, such as doctors and nurses. Furthermore, it is crucial to examine how these beliefs, in turn, shape specific medical practices and clinical decision-making.

Therefore, much like other anthropologists who have sought to explain the effectiveness of magic—why it "works" or "does" something for believers—my aim in this piece is to explore how magical beliefs and the accompanying practices underpinning the rapid development of AI in healthcare manifest in everyday clinical practice. I am particularly interested in how these beliefs and practices, rooted in AI's perceived future potential, influence and shape the ongoing, present-day trajectory of AI development—despite practical challenges or experiences of disillusionment. This question has continued to fascinate me during fieldwork, as my team and I observed that many healthcare professionals working with AI are far from satisfied with its current performance. Indeed, according to my interlocutors, AI rarely meets their expectations or hopes; often, it complicates their work rather than simplifying it.

To begin understanding how a theoretical lens around magic can help grasp the dynamics of AI, it is first important to distinguish magic from religion. Although sometimes intertwined, they differ primarily in their approach to the supernatural. Religion typically involves a relationship with a higher power or spiritual force—through prayer, worship, and spiritual growth—aimed at individual or communal salvation. Magic, by contrast, involves the belief in human capacity to manipulate supernatural forces to achieve specific goals (Stein et al., 2024; Singh, 2021), often through rituals, spells, or symbolic acts (see Parmigiani, 2024, for an example from paganism). As noted in the

introduction to this special issue, the effectiveness of magical beliefs tends to increase when the process remains opaque or unexplainable (reference will be added later)- examples include diseases "just" disappearing after a spell or mediums "just" knowing things beyond ordinary understanding.

I agree with this idea and want to expand on it. In my view, defining magic should go beyond just the opacity of the process itself. The perspective introduced in this Special Issue can be summarized as follows: "I engage in magical practices even if I do not fully understand how they work; the fact that I do not understand them and they appear to work nevertheless is precisely what makes them magical." This is not only a matter of acting on opaque processes. It also involves a particular mode of belief: a collectively shared conviction that unseen forces can in fact be addressed and steered. In other words, the practices I call "magical" presuppose and continually reinforce a background belief that such magic is possible at all, rather than deriving solely from the opacity of the concrete procedures. Here, "belief" refers to this shared imaginative framework about what is possible, while "practices" are the concrete routines that both express and stabilize that framework.

Bronislaw Malinowski (1979), in his seminal work "Magic, Science and Religion", touches on this point. He examined magic across different cultures and argued that people share magical beliefs because these serve practical and psychological functions. Magic provides individuals with a sense of control and efficacy in uncertain situations. Malinowski emphasized that magic is deeply rooted in social and cultural contexts, acting as a form of social cohesion and control. In my analysis, I observe that my interlocutors also act based on a kind of magical belief that offers them a sense of certainty or control over the future. They are convinced that, since AI is here to stay and has autonomous power, they must cope with it. Some try to support it by improving it, while others attempt to adapt themselves—such as by taking yet another digital literacy training.

Similarly, De Martino (2015) viewed magic as arising from particular historical contexts within societies. He warned against categorizing magic as irrational or outside societal realities. Instead, he argued that the efficacy of magical practices transcends social or political representations—they possess their own inherent power and significance. Magic, in his view, is not merely symbolic but can have a reality of its own, separate from the social world in which it originates. Other anthropologists have echoed this perspective. For example, Francesco della Costa (2023) contends that the anthropological study of magic should focus on its "realness" and its direct relation to reality: what does it do for people? He describes magic's effectiveness as its capacity to "create a form out of chaos"—to impose order where disorder prevails. Rituals, he explains, are metaphoric or "metaphorizing" practices that function as non-representative metaphors. These rituals "open a gap" between us and reality, creating a new framework that allows us to interpret its form, separate from the disordered, chaotic actuality we must confront (see also Della Costa, 2023: 11, 19).

Building upon these insights, I examine AI's "magical" power and its perceived hold over people—extending beyond direct application. As I will demonstrate, healthcare professionals' strong belief in AI's potential does not necessarily stem from its current capabilities or near-future improvements. Rather, many are acutely aware of its limitations

and risks, often skeptical about its present functioning. Nevertheless, they cling to a collective, magical belief that AI will, in the near future, help to resolve an anticipated healthcare crisis.

In line with anthropological approaches to magic and my observations of human interaction with AI, my analysis thus reveals several parallels: both AI and magic operate in ways that are often opaque, with their mechanisms neither fully understood nor easily explainable—much like a shaman's "dreaming," which cannot be measured or rationalized scientifically. Ethnographic work with caretakers shows that many have lost track of how the technology truly functions, raising questions about how its societal effects are explained when its internal processes remain largely inscrutable—an issue that also occurs for experts such as AI developers (Baas, this SI).

Furthermore, both AI and magic are sustained by powerful belief systems—faith that they "work" or will do so soon—beliefs that materialize in tangible effects such as investments, institutional adoption, and public engagement. Moreover, both are surrounded by language and ritual practices emphasizing their unknowable, almost inevitable, forces. A recent episode involving the AI company Anthropic can be read as an example of such a ritual practice. In 2026, Anthropic announced that it would withhold public release of its most powerful model, Claude Mythos Preview, because its capabilities were deemed too dangerous and insufficiently understood, even by its own developers. Beyond a technical risk assessment, this carefully staged act—publicly declaring that "we cannot control what we have created"—performs and reinforces a particular imaginary of AI as an autonomous, quasi-agentic force that exceeds human comprehension (Anthropic, 2026). As a ritual, it not only manages liability and responsibility; it also contributes to naturalizing the idea that AI has its own momentum and inevitability, that it is a force that will shape our future and that can at best be contained or steered, but not fundamentally rethought or refused.

AI is commonly described as an "inevitable" part of the future. As also became clear from the 2026 blog by AI investor Shumer, cited in the introduction (Shumer 2026), narratives from Silicon Valley and futurists frequently invoke "magical thinking," portraying AI as an unstoppable, autonomous force over which humans have little agency. This framing obscures humans' active role in shaping or resisting AI's development, entangling humanity in a technology perceived as beyond control—an issue that the concept of magic, both as belief and force, helps me critically analyze. Indeed, caretakers actively engage with AI to further support it: they follow courses or try and refine it, even if that costs them much time and energy. They do so; based on a belief that AI is an unstoppable, autonomous force: one better works with, not against it.

Context and methods

This paper is based on a research project that began in 2021, with preliminary research conducted by the author, which then evolved into larger research project. Collaborating with a team of PhD students and a postdoctoral researcher across seven different countries: the Netherlands, Norway, Estonia, Denmark, China, the United Arab Emirates, and Israel. Referring to an impending "healthcare crisis" across these seven

sites, as I do in this article, does not mean that they face identical problems. All of our fieldwork was conducted in public hospitals, yet these institutions are embedded in very different national arrangements of financing, regulation, and public–private involvement. Likewise, the concrete pressures on care provision and the timing and intensity of demographic change vary considerably between countries: in some sites, such as the Netherlands, population ageing already figures as an acute policy concern, while in others, such as the United Arab Emirates, it appears more as a projected future risk than a present demographic reality. My theoretical analysis does not aim to homogenise these situations or to adjudicate the empirical accuracy of such projections. Rather, it builds on what our interlocutors in these contexts share: a widely articulated belief that a severe crisis of care is either underway or inevitable, and that the appropriate—often the only—solution must be sought in technological innovation, with AI imagined as central to sustaining healthcare in the future.

Our goal was to investigate how professional caregivers are already, increasingly collaborating with non-human agents, such as AI and simpler algorithms. The expectations of AI are high: it is widely believed that AI can help alleviate the stress on healthcare systems worldwide. Currently, doctors and patients alike complain about lengthy waiting lists or unaffordable care, and expectations suggest this will only worsen due to anticipated demographic changes (Dehue, 2014; Hoeyer, 2023). According to many stakeholders in the healthcare sector, only AI has the potential to mitigate the impending healthcare crisis. As researchers, we wanted to understand the implications this collaboration has for their daily work and the overall healthcare system.

We engaged a diverse array of interlocutors, each specializing in fields ranging from dermatology to radiology and cardiology, all of whom had substantial experience working with AI and various algorithms in public hospitals. While most interviews took place in person—conducted in hospital corridors, staff rooms, or areas where clinicians changed from their uniforms into civilian clothing—a few interviews were held via Zoom. As of now, the project has incorporated insights from 70 interviews, with ongoing efforts to expand our understanding. Utilizing a semistructured interview format, we employed fixed open questions while also allowing space for participants to introduce pressing or pertinent topics. All interviews were recorded, with participants' consent, and the resulting transcripts were analyzed using Atlas.ti. Our research team met weekly to discuss our findings and share insights gleaned from interviews and observations within the hospitals, facilitating a process of reflection and refinement. Throughout our research, we ensured the anonymity of our interlocutors in all publications and maintained the privacy of patients by omitting any patient-related data from our notes.

The study design prioritized observational research. For example, some of the team members witnessed radiologists skillfully engage with medical imaging technology to leverage their memory; or saw nurses filling in blood test outcomes on their iPad. However, the busy environment of healthcare often limited our chances to observe clinical interactions, as doctors and nurses would frequently move briskly between reception areas, waiting rooms, and offices—ourselves following with paper notebooks and pens while they balanced their iPads in hand. This experience offered us a realistic glance at the situation in which so many professional caretakers now work: under constant stress.

Hence, the fieldwork itself was shackled by the pressurized environment of healthcare delivery.

The constant hurry and sense of overwhelm experienced by our interlocutors appeared to be a universal phenomenon. Nearly all of them complained about it, and from what we observed, they had valid reasons for feeling this way. This relentless rush and stress affected our research as well: they had significantly less time for interviews than we had ideally hoped for. However, their urgency also provided valuable data in itself. We noticed that this sense of pressure was accompanied by a stubborn hope regarding the role of AI in the near future. Many believed that AI could help alleviate this strain, even though current indicators about AI's effectiveness did not necessarily support this optimism. Note that this is an interesting finding in itself: the widespread stress upon healthcare systems worldwide, coupled with massive investments in technology rather than in, for example, more personnel. Why is AI frequently presented as the only solution to current and anticipated problems in the healthcare sector? The next section will elaborate on this point.

Findings and analysis

Midway through an interview on a busy diabetes and dialysis ward in a large public hospital in West Asia, a senior doctor sighs and points with an irritated expression at a beeping computer screen. "That's the AI; it raises alarms, but this time it's wrong. We can just ignore it." The ward treats adults with chronic, complex conditions who require frequent monitoring and medication adjustments, precisely the kind of setting in which managers and vendors had promised that predictive algorithms would "take work off clinicians' hands." This particular doctor is deeply familiar with both the clinical workflow and the technical underpinnings of these systems: he sits on the hospital's digitalization committee, has co-developed and helped procure several AI applications, and is able to explain in detail why specific models fit well, or rather poorly, with the ward's patient population and data flows. When I ask what the specific error with this particular algorithm is, he sighs even more deeply: "Well, AI could be incredibly helpful, and it has been somewhat helpful in some of our processes, but right now to my taste this system makes too many mistakes. We're going crazy over it—everyone hates that beeping sound if it comes for no reason." He explains that he and his colleagues do everything possible to deliver quality care despite the AI's current ineffectiveness: they stop entering data altogether to avoid the nuisance, or they do so but actively ignore the alerts. They double-check everything, hold extra meetings, and the mantra in this ward is to never rely solely on the AI's recommendations. Even nurses and junior staff on the ward, who were less involved in the procurement and configuration of the system, described similar workarounds and emphasized the importance of "using your own head" alongside the AI.

When I ask whether it might be better simply not to use AI at all, the doctor shakes his head vigorously: "No, no, it'll get better on its own. That's what these systems do, right, they develop themselves, they grow. In the future, this algorithm will actually save us—we just have to endure its growing process now." He admits he doesn't know exactly how or when AI will make fewer errors, confessing that the system is difficult to understand.

Despite training, he and his colleagues say that "really, no one understood exactly what those developers were saying." This is striking because, unlike some of his colleagues, he presents himself as both clinically and technically competent: he occupies a high position in the medical hierarchy and repeatedly stresses that he is "good with computers" and follows AI developments closely. Yet, he emphasizes that the AI he works with is self-learning: "The system learns on its own," he says in awe. It's not yet there, he adds, but it will be soon. A passing nurse jokes that "In a few years, you'll be interviewing the AI, not us," and a colleague overhears and responds, "Perhaps you should already do that—at this rate, the AI will soon be telling us what to do, as far as I can tell. All we can do is try to keep up with it." Across different professional ranks on this ward, then, frustration with the current system coexists with an expectation that it will, almost by itself, grow into a reliable partner.

Similarly, in a Dutch public hospital, physicians report that although they are increasingly required to use AI systems purchased by management, they often ignore the outputs because the algorithms do not perform as expected. Here too, residents and nurses described spending considerable time "checking up on the computer" and discussing unexpected outputs in corridor conversations and ad hoc team meetings. In other countries involved in our research, nurses used AI but also relied on other methods to double-check its diagnoses. Clinicians frequently spent one to, sometimes, several hours each workday verifying AI results, fearing errors, and many reported that working with AI actually takes longer than before its implementation.

There were notable exceptions. In a Norwegian public hospital specializing in breast and prostate cancer treatment, most doctors expressed deep satisfaction with an AI tool, acknowledging errors but considering them infrequent. On these wards, where the post-doctoral researcher in our team conducted observations, senior clinicians described the system as a "helpful assistant" that fitted relatively smoothly into existing diagnostic routines, while junior doctors emphasized the need to double-check and occasionally override suggestions when they did not seem right. In the UAE, nurses reported increased speed and impressive accuracy, yet even there, awareness of the system's fallibility persisted. They used AI for specific tasks and still dedicated significant time to error-checking, despite their overall satisfaction. Moreover, they explained to the PhD researcher in our team that they would often ignore the algorithmic outcomes if other information sources—such as the way a patient behaved or looked—indicated that the algorithm was off track. In one Israeli hospital, a relatively simple decision-support algorithm was praised by nurses not only because it helped them make faster and better clinical choices, but also because it afforded them a more autonomous role. I have analyzed this particular outcome in more detail elsewhere, to explore the requirements and context of such a positive result (van Voorst, forthcoming in 2026). Here, I mention these more positive cases to underline that, in this research project, AI was not experienced as uniformly burdensome.

However, even in situations where healthcare workers were enthusiastic about their collaboration with AI, it became clear that they still spent a great deal of time checking, offering feedback to AI-developers, and following "digital literacy" trainings to enable them to work with the system—and these hours more often than not canceled out the

time savings generated by the algorithm. In other words, the promise of time efficiency was, even in the most successful cases, not yet fulfilled—and yet the hope persisted that this technology would ultimately provide a solution to an anticipated crisis of too many patients and too few staff.

As one senior clinician told me: "We just need to try and work with it, stick with it, until it gets better. And it will, eventually." Despite acknowledging that AI often complicates their work, this doctor persists in the belief in its eventual efficacy; so do his colleagues. Similar formulations—"it will learn," "it will improve," "you have to give it time"—recurred across interviews with different ranks of staff in all of the hospitals we studied. This finding presents an interesting contrast to the literature that discusses the material realities of capitalist logics behind AI development and its "capture" of certain markets, or the studies that shed light on the "tech imaginaries" of the industry. As I discussed in my literature review, these often revolve around the creation and maintenance of high expectations that, in reality, are rarely fulfilled. However, what I encountered in the field was quite different: despite a clear mismatch between smooth industry representations and the daily, more patchy realities of hospital work, the collective belief in the potential of AI persists. People continue to perform various practices to maintain this belief intact and to ensure that the future of AI aligns with their expectations and hopes.

It is clear that our interlocutors are far from naive about AI's limitations. They are well aware of its technical flaws and the implications for healthcare and their professional roles. Most are familiar with the ethical debates circulating in media and academia concerning biases, discrimination, and the erosion of personal autonomy (Eubanks, 2018; Passchier, 2021). As a response, public and scholarly concern about algorithmic ethics has surged, leading to numerous regulatory frameworks worldwide. Central to these regulations is the requirement that algorithms remain explainable, enabling both developers and users to understand decision-making processes—a condition many argue is often unmet (Zanzotto, 2019).

Nevertheless, many healthcare workers strive to verify and improve AI outputs, often by providing feedback—sometimes lengthy emails to developers—hoping to influence system performance. One clinician told me she spends most of her day troubleshooting AI that "keeps making mistakes." She explained, "It's frustrating: I'm supposed to help patients get better and I know how to do that, and I was educated to be a good supervisor for my juniors and help them grow, but I was never trained to help AI improve, so I'm not even sure if I'm being helpful to it at all!" When asked if she had complained to management about the time she spent on correcting AI, she replied, "And then what? We just have to learn and work with it—that's the only way out," viewing AI as an unavoidable part of an overburdened, hollowed-out healthcare system. She sends her observations to the developers, knowing she cannot see inside, nor truly understand the algorithm herself, and trusts that, eventually, her feedback will help AI improve. Not that "it" necessarily needs her small contribution. "Hopefully, the developers understand it better than I do, although … who knows? They say *AI develops so fast*, it's hard to keep track for anyone. *It just kind of grows in the direction it wants to grow*, right? And it might have good reasons for that, too; the problem is our brains don't oversee *what AI knows*. That's why I plan to attend more AI training, so I can still work with AI in 5

years," she added. Note the italicized expression of agency that she attributed to AI itself, a common sentiment among the clinicians in our study.

A doctor from Estonia reflected during a walk through his lab, "When I work with AI, I just "know" when something isn't right. It can take hours to find the error, which sucks because I'm busy enough. But I believe that, in a few years, AI will save me so much time. It's a mutual support system: I help it now, and *it will help me later*." When I asked what would happen if he didn't correct AI, he responded, "*It will still learn* - AI learns whether we pay attention or not. I'm just here to make it easier." Another Dutch clinician expressed similar sentiments: "I'm constantly checking the AI because I know it still makes a lot of mistakes. It takes up a lot of my time - I'm busier now than before AI was introduced. But what can I do? AI will be here forever, so I might as well help it improve." Six months later, this clinician reported completing additional training to better understand AI's "supersmart, superquick, totally not-understandable" inner workings, despite already feeling overwhelmed by his workload—a common challenge among his colleagues.

The above data demonstrate that the rapid integration of AI in healthcare is partly driven by collective magical beliefs—faith that, despite empirical uncertainties and ongoing frustrations, AI's future will be radically different, namely much better. These beliefs act as an invisible force, sustaining and accelerating the development trajectory, often in contradiction to practitioners' lived realities and ethical concerns. Recognizing this magical dimension offers a critical lens to understand how technological futures are shaped not only by material and discursive forces but also by collective imagination, which ascribes AI with agency and inevitability.

Furthermore, the analysis reveals that as AI is perceived as agentic and thus inevitable, healthcare professionals actively support its development—despite lacking a rational basis for this conviction. They are aware of the uncertainties, yet they remain convinced that AI's role will be central in the near future; for that reason, they "better keep up," for example, through following additional training.

As I have argued earlier, De Martino (2015) warned against dismissing magic as irrational, emphasizing that magical practices possess their own power and reality for people, independent of social or political meanings. This seems to be true for my informants, who consider AI to autonomously learn and develop, whether they would support its learning trajectory or not—at the utmost, they can assist to help the AI learn quicker. But such analysis pays little attention to the material drivers of AI development: even a so-called "self-learning" AI has been coded by, and is constantly evaluated and corrected by, human beings. Hospital managers invest in AI with healthcare funds; often inspired, as Klaus Hoeyer (2023) also found by repetitive narratives about AI's future potentiality —beliefs which were widely shared in the hospitals we visited.

Additionally, Francesco della Costa (2023) highlighted that magic's effectiveness lies in its capacity to impose order on chaos through ritual—metaphorically creating a new framework that allows us to interpret reality's form, separate from disorder. Indeed, in the case of AI and healthcare, it seemed to me that caretakers' coping practices to work with AI despite of its many mistakes or ethical risks, functioned to offer a sense of control to my interlocutors: by following yet another training, by diligently correcting

AI, they tried to keep up, in the hope that, once AI would be as good as they believe it will be, they would still be able to work with it. At the same time, and paradoxically, the doctors and nurses admitted that they often have no clue how AI works; training did not solve that problem for them. This finding suggests that, as was suggested in the introduction to this special issue, opaqueness increases the experience of magic: "it" works, without humans grasping how; therefore, it must be magic.

In this vein, I propose that the collective belief in AI's "inevitable" future functions as a form of magical belief—an autonomous force that sustains hope and agency, even amid uncertainty and disappointment. During interviews and informal conversations, many attending clinicians and nurses shared exactly the same stories about the future of AI: it would enable more time-efficient work, a story that was echoed even by those in the research who were currently lamenting the extra work they had to undertake since AI was introduced. Furthermore, it was repeatedly claimed that AI would make fewer errors "soon" in the future. This narrative was repeated even by doctors who are presently working with a system that, after months of training, still made as many mistakes as it did on the first days. Moreover, all our interlocutors reiterated the narrative about the anticipated, worldwide healthcare crisis, which they described as a given; no one seemed to believe there was a possibility that this crisis would not arise, a perspective that overlooks the politics behind such statement (Hoeyer, 2023). In these narratives, AI always played the role of the savior. When probed further: how do you know this, why do you believe this—there were two types of answers: "everybody knows this," was one popular answer, and the other one can be summarized as "this is what the world needs and this is the only solution to the problem." Or, in my own words: it must happen, because we all hope for it to happen.

Like the magic practices De Martino (2015) describes, this belief system has its own reality, independent of current empirical evidence. It motivates clinicians and nurses to continue their work with AI and justifies ongoing investments from management, despite the visible shortcomings and frustrations. This collective "magical" faith in AI's future, therefore, plays a crucial role in maintaining its trajectory. As such, it embodies a strong force, albeit not, as De Martino writes of magic, purely exists in itself as an autonomous power that shapes reality; instead, it is a driving force propelled forth by human efforts, money, and sociotechnical narratives, as well as through fears of an anticipated healthcare crisis, caretakers' hopes and desires.

Conclusion

The cases presented in this paper have revealed that the rapid integration of AI in healthcare is not driven solely by technological innovation or industry-driven narratives, but is fundamentally sustained by collective magical beliefs among healthcare professionals. These beliefs—centered on notions of AI's autonomous learning, its inevitable dominance, and its perceived agency—act as a powerful force that propels continued investment, adaptation, and acceptance. Despite frequent frustrations, errors, and the messy realities of working with flawed AI systems, participants rarely question their present collaboration. Instead, they adopt pragmatic strategies—working around limitations rather

than confronting them head-on—thus maintaining their engagement with the technology. Even clinicians acutely aware of AI's drawbacks continue to invest time and resources, driven by a conviction that the future of AI will somehow resolve current issues. They believe that, through some form of magical development, a flawless AI will eventually emerge to address the crises they anticipate.

Importantly, this belief is not grounded in current evidence, but in two intertwined dynamics. First, there is a kind of magical belief in AI as an autonomous force whose advance is both inevitable and inherently beneficial. Second, there is a forward-looking hope—almost a perceived necessity—that AI must work, because no other viable solution is imagined for an anticipated care crisis driven by demographic ageing and chronic understaffing, in which AI is expected to step in where human staff will be lacking. These two forms of belief are actively nurtured by industry narratives and policy discourses that simultaneously present AI as unstoppable progress and as the only realistic answer to mounting systemic pressures. The present practice of working with AI is often disappointing, yet rather than adjusting expectations based on this reality, many continue to shift their hopes further ahead. Healthcare workers in the hospitals that were part of the research project presented in this paper maintain a collective belief that AI's development is unstoppable and "inevitable"—a perspective that downplays human agency and their own capacity to influence the trajectory. These professionals do not protest the rapid rise of AI within their workplaces; instead, they exert significant effort to work with it, despite ethical concerns about opacity and their professional responsibilities as human evaluators. They perceive AI as an autonomous force that "just flies," which they feel cannot, nor should, be stopped: after all, it is their only hope for the future of healthcare. Consequently, they work with or around AI, believing "it" holds them in its grip and that their role is to adapt to its perceived unstoppable momentum.

This persistent magical belief functions as a driving force that sustains and accelerates AI's development, even in the face of ongoing frustrations and ethical dilemmas. It shapes their practices, motivations, and collective imaginaries about a future where AI's dominance is not only inevitable but also beneficial. Recognizing these beliefs invites us to reconsider how technological futures are constructed—not solely through material or discursive forces but through shared myths that imbue AI with agency and inevitability.

This is concerning, as research has shown that datasets in AI (re)produce social biases, discriminate, and limit personal autonomy. Automated decision-making systems overwhelmingly tend to penalize the poor and middle class through mechanisms of control (Eubanks 2018; Passchier 2021). In response to this alarming research, public and scholarly concerns about algorithmic ethics have increased. Governments and tech companies have extensively endorsed legal frameworks and regulatory guidelines for so-called "ethical," "responsible," or "fair" AI—hundreds of these frameworks now exist worldwide; nevertheless, more and more studies show that the practice of AI utilization is often far detached from such frameworks (van Voorst, 2025). In co-creation with my interlocutors, I have written elsewhere that many doctors and nurses lack both the knowledge and the time to evaluate AI in the way that is expected on the basis of "ethical AI" regulations (van Voorst, 2025). However, that doesn't mean they don't try, nor that they have no idea about the accuracy of an AI-generated output. In our research, we observed that

doctors and nurses frequently detected or suspected errors. However, this almost never happened through rational reasoning or calculation; they described it to us as a "feeling," an intuition, that something was wrong. That intuition was mostly built up through years of embodied experience, as we saw, for example, with radiologists who used AI to quickly draw organs in 3D. The most experienced physicians, who had been drawing these kinds of drawings by hand for decades, were very quick to assess when the AI had created an incorrect drawing, which happened, for example, with obese patients or when a patient had been measured by the AI scan in a lying position. If the magical belief in the future of AI remains more powerful than expressed concerns or protests, the future of healthcare will indeed be defined by AI, with serious ethical risks involved.

These insights prompt crucial questions for future research: How do these collective beliefs influence policy and regulation? To what extent do they obscure the social and ethical realities of AI implementation? And how might engaging critically with these imaginaries help foster more realistic, inclusive, and ethically grounded approaches to AI in healthcare? Addressing these questions requires not only technical and ethical scrutiny but also a deeper understanding of the cultural, psychological, and symbolic forces that sustain AI's seemingly unstoppable rise. Only then can we develop approaches that balance technological innovation with a nuanced awareness of the shared myths that shape its future.

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Consent to participate

All informants gave verbal consent, which was recorded and later transcribed. Some informants also gave verbal consent.

Consent for publication

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