Artificial Tricksters: Narrating AI in Relation to Age and Gender

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Abstract

This paper delves into the pervasive influence of Artificial Intelligence (AI) in contemporary society and discusses its reciprocal relation with both age and gender. While strong AI fuels both cultural fascination and trepidation, the essay posits that, so far, strong AI remains a fantasy. The discourse surrounding AI, often framed within metanarratives presented in fiction, media, and social platforms gravitates towards a humanized interpretation of AI. In contrast, this article introduces the age- and genderless trickster as a heuristic model to narrate AI. The trickster serves as a tool for critically examining how AI is currently narrated, reflecting its diverse manifestations as both a benevolent force and an anarchic character. The exploration extends to the impact of narrative framing on meaning-making in relation to AI, particularly focusing on age and gender categories. It thus becomes clear that the digital divide observed in the use of communication technologies persists with AI, disproportionately affects marginalized groups, especially older women. By proposing a shift in the narrative and reinterpreting the trickster paradigm, this article suggests that altering the storytelling around AI would influence its perception and development. The study emphasizes the need to address the potential structural discrimination embedded in AI systems, particularly in relation to age and gender, thus advocating for a more inclusive and equitable technological landscape.

Narrating AI in an Aging and Gendered Society

Artificial Intelligence (AI) has been *the* buzzword for roughly the last decade. Long before Open AI's ChatGPT/GPT4, it had become obvious that self-learning machines are the next big thing; a development that has even accelerated since the release of the infamous chatbot. Despite difficulties to even define the concept of AI or "intelligence" per se (Legg and Hutter 1; 7-8) researchers of various fields have attempted to grasp it. The general or "strong" AI (Braga and Logan 156) that is capable of imitating human intelligence and thus human behavior is still, and probably will always remain, fiction. Nonetheless, strong AI inspires both (pop) cultural and scientific discussions, as a topic that evokes hopes of powerful age-, gender- and raceless machines that are capable to grapple with humanity's challenges. More commonly, however, strong AI is tied to fears of evil robots (Liang and Lee) that will first take away people's livelihood by making them redundant in the workplace,[1] and eventually take over world domination. While these hopes and fears are mere speculations, weak (or narrow) AI is a reality that already shapes everyday life. The algorithm—another fuzzy notion that is hard to define (Ziewitz)—has become an inalienable part of contemporary society, and interaction with, for instance, auto-complete on smartphones, chatbots or other smart devices is getting increasingly common. At the same time, such systems are becoming more sophisticated and humanlike as the example of ChatGPT illustrates: comparable to communication with a fellow human being, users can now interact with a complex technological system via typed messages. This "being" can appear as anyone or anything it is asked to be, even though it is merely a powerful learning machine. As research on anthropomorphization indicates,[2] advanced AI systems are not only perceived as tools, but as ministering spirits, or rather as potent agents that are referred to as a someone rather than a something. AI, it seems, can take on a variety of appearances. Accordingly, generative AIs tend to be approached as if they were human. This perception is part of a metanarrative, which is commonly presented in fiction, media coverage, and other forms of communication, such as social media postings, and which deserves further scrutiny.

In this essay, I thus take a closer look at the perception of AI, and I reflect on its narrative framing. To this end, I deploy the narratological and mythological concept of the age- and genderless trickster as a heuristic model. Unlike Donna Haraway, who imagined her "cyborg" as a utopian entity, which overcomes categories such as age, gender, or race ("A Cyborg Manifesto"), I initially do not introduce the AI-trickster-figure as an

[1] For further reference see Dekker et al.

[2] The study of anthropomorphization engages with the framing of AI as humanlike, for further reference see Fuchs; Salles et al.; Scorici et al.

"imaginative resource" ("A Cyborg Manifesto" 7), but as a framework that helps me develop a critical phenomenological inventory of how AI is currently narrated. The trickster as a model proves to be particularly fruitful because it functions as a pluripotent tool to express a reciprocal relationship between AIs and humans, and it showcases the different qualities that this relation may take. Within the framework of the trickster narrative, AI may thus function as a benevolent force but also as an anarchic character.

Reading engagements with AI within the trickster paradigm, I further investigate the ways in which narrative framing impacts processes of meaning-making in relation to AI. In doing so, I focus on the categories of age and gender, and especially on their intersections, specifically given that members of groups who are marginalized because of their age and/or gender are at risk of experiencing further structural discrimination through AI. The so-called digital divide (Rogers) that has been observed in the use of communication and information technologies continues to manifest itself in the utilization of AI. Prominently, this divide has been observed both with regard to age and with regard to gender (Kuroda). It becomes evident that it tends to be the same individuals and systems that have been disadvantaged by other digital developments who will be disadvantaged by AI as well, i.e., older adults, and especially older women. In effect, I thus want to propose that changing the narrative—and re-reading the trickster-narrative—can have an impact on the perception and perhaps even on the development of AI. By employing the figure of the trickster as a blueprint for conceptions of AI, I draw attention to the ways that AI challenges processes of meaning-making and the significance of narratives in making sense of new technology.

The Archetypal Trickster

The definition of the trickster is almost as fuzzy as the notion of AI. *The Encyclopedia Britannica* defines the trickster tale as a feature

> [i]n oral traditions worldwide, a story featuring a protagonist (often an anthropomorphized animal) who has magical powers and who is characterized as a compendium of opposites. Simultaneously an omniscient creator and an innocent fool, a malicious destroyer and a childlike prankster, the trickster-hero serves as a sort of folkloric scapegoat onto which are projected the fears, failures, and unattained ideals of the source culture. ("Trickster Tale")

In western academic writing the term "trickster" was first coined by the archaeologist and ethnographer Daniel Garrison Brinton in his study *Myths of the New World* (1868) (Brinton). But it was not until the 1950s that the trickster was introduced to a wider public in Paul Radin, Karl Kerényi and Carl Gustav Jung's *Der göttliche Schelm* (1954) (Radin).

Since then, the trickster has been observed as a universal storytelling device in mythology/religion and folklore that can be found in virtually every culture. In most cases, they are created and sent into the world by the pantheon of the respective mythology and can cross the boundaries between the realm of the divine and of the common people.

As an archetypal character, the trickster's main function is to challenge the principles of the natural and/or societal order by playing tricks, causing trouble and thus confronting humankind with their own shortcomings. Their appearance varies from animal-shaped to human/humanoid or godlike, and in many variations, they can shapeshift, too. Most trickster characters are, in fact, read as male [3] but their gender—in some cases, even their sex [4]—and age are fluid. Their personality also tends to be ambivalent: On the one hand, they can be quite malicious in their trickery and are of deceiving character, only interested in the immediate satisfaction of their needs and desires; on the other hand, they often serve as so-called cultural heroes, giving humans tools or abilities they could not possess without the tricksters' help. It must also be noted that tricksters are neither omniscient nor almighty. Quite the opposite is true. While they have the ability to acquire knowledge, they lack instinct and intuition, and can easily be tricked themselves—be it by the gods who made or sent them, or by common people. The trickster is, so to say, a very smart fool.

But what does the trickster have to do with AI and how do both the trickster and AI challenge society? In his monograph *Archetypes*, C.G. Jung states:

> The trickster is [...] on the one hand superior to man because of his superhuman qualities, and on the other hand inferior to him because of his unreason and unconsciousness. He is no match for the animals either, because of his extraordinary clumsiness and lack of instinct. These defects are the marks of his human nature, which is not so well adapted to the environment as the animal's but, instead, has prospects of a much higher development of consciousness based on a considerable eagerness to learn, as is duly emphasized in the myth. (203)

One could easily replace the word "trickster" with "(narrow) AI" in this quotation: narrow AI can also be seen as superior to humans, concerning its superhuman ability to gather and process information. At the same time, it may appear inferior, as it lacks consciousness and ratio of its own. Narrow AI is neither sentient nor self-aware. Nevertheless, its original

[3] In her book *Scheherazade's Sisters*, Marilyn Jurich focuses on female trickster figures, coining the term "trickstar" for a character that challenges the absurdities of the patriarchal society structure (n.pag.).

[4] The trickster Loki from Norse mythology cannot only shape shift into animals, but also exhibits sex variability and is even able to give birth while being transformed into a mare (Larrington 258).

purpose is to learn, and one could insinuate that a deep learning model is in fact "eager" to learn. The "myth" of AI is that it will finally evolve into a stronger—and maybe even sentient—version of itself.

The ways in which the story of any phenomenon is told reveal a lot about those who tell it, and in our digitalized societies, AI is narrated as an actor or agent who may not be sentient or conscious (yet), but who is powerful nonetheless. Most commonly, it is emphasized that AI operated systems have an impact on our everyday lives as they help us with tasks and chores. The software developer Ilija Mihajlovic, for instance, explains that "[t]here are so many amazing ways artificial intelligence and machine learning are used behind the scenes to impact our everyday lives" (Mihajlovic). But there are also numerous admonitions on how these systems pose a "threat" to humanity (Bella), either when they are used as a tool in fraudulent or even terrorist activity (Uppal) or when they themselves "go rogue" (Chatfield n.pag.). As these examples suggest, AI systems, like the trickster, come in various shapes and forms—they are, so to say, shapeshifters that may appear as invisible digits in a computer code or take the form of a human, an animal, or that of any other thing or being. They are thus by their very definition without age or gender. In extension, they act in ways that common humans can hardly understand, and that therefore tend to impress them, even if their antics lack any meaning. ChatGPT once more serves as an illustration here: the journalist Eva Wolfangel described the OpenAI chatbot as an "eloquent babble mouth" and an "habitual liar," referring to its tendency to "hallucinate" (Wolfangel)—labels that could as well be attributed to a trickster figure. Especially this last example illustrates that the trickster is *the* narrative template that is popularly used to describe how AI can be perceived as a cultural hero and a (malicious) fool at the same time.

To dig deeper into this narrative template, it is vital to discuss some exemplary trickster narratives that appear most influential with reference to AI. Beginning with ancient Greek mythology, there is Prometheus. For the last millennia, Prometheus's theft of fire has served as an allegory of humankind striving to achieve limitless god-like power in western societies. He is the prototype of the cultural hero—a variation of the trickster—who steals from the gods and gives to humankind. While Prometheus' actions are purposeful—his goal is to help and enable people—other trickster figures randomly collect valuable things and concepts. The Ashanti people in Western Africa, for instance, have a myth about the spider shaped trickster Anansi, who collects all the wisdom of the world in his gourd (Boateng*).* Eventually, Anansi spills the contents of the calabash and thereby distributes knowledge to humankind.

An example of the trickster in western culture is the German medieval folklore character Till Eulenspiegel. The infamous jester is known to base many of his pranks on understanding a proverbial saying quite literary (so-called "Eulenspiegeleien"). By doing exactly what he is told, he causes mayhem and exposes his fellow people's shortcomings—he holds the mirror to them, thus doing justice to his name (*Eule* meaning "owl", representing wisdom, and *Spiegel* meaning "mirror"). In some cases, his pranks can be interpreted as purposefully unmasking the grievances of his time, but generally Eulenspiegel's trickery is just random and anarchic. In the politically charged 1960s and 1970s, trickster characters of the Till-Eulenspiegel-type were a common device in children's literature, as they challenged structures of power by means of causing chaos (Glanz). Popular examples in European children's literature being Astrid Lindgren's *Pippi Longstocking* (1945), and *Karlsson* (1955), Ellis Kaut's *Pumuckl* (1962), or Paul Maar's *Das Sams* (1973). These characters are anarchic, egocentric and driven by the immediate satisfaction of their needs, but most of them are also loyal and genuinely interested in helping people. They challenge concepts of both age and gender: They are at the same time childlike and uncannily wise or experienced, while not conforming to gender norms or not even having a gender at all.

Playing with words and language is another common feature among different types of tricksters. By using language as a toy, tricksters show that not even the conventions of speech apply to them. These literary tricksters cannot be labeled either good or evil, rather, they naively work with what they find in the world, using their extraordinary capabilities, such as their strength, the ability to fly, their invisibility or the power to grant wishes. The audience of their antics are children who enjoy the anarchy and the ways the tricksters challenge the ruling order, while (older) adults might find the trickery annoying or even dangerous.

AI Trickster Tales

These character traits of tricksters appear reminiscent to the framing of AI in the metanarrative of our digitalized society. Reports about programs that enable medical breakthroughs (Rincon), for instance, may evoke an image of AI as a Promethean figure that helps humans to overcome challenging situations with their "divine" capabilities. Fittingly, *bbc.com* quotes AI specialist Dr. Demis Hassabis with reference to the role of AI in medical developments: "And I think it's a great illustration and example of the kind of benefits AI can bring to society. [...] We're just so excited to see what the community is going to do with this" (Rincon). Here, AI appears as an external Promethean force that offers a gift that is to be

used by humanity. The fact that AI is a product of said humans is neglected, instead, AI appears as an independent agent. A deep learning model, on the other hand, may be imagined as the spider Anansi who literally collects every bit of information in a physical container to eventually share it with humankind.

There are also stories of AIs that play tricks on people, either making them laugh or confronting them with their own inadequacies, oftentimes both. One prominent example is the Twitter-bot Tay, which was launched in 2016 without any ethical guidelines. In less than 24 hours, Tay went from innocent teenage girl, tweeting and chatting about mundane things, to an alt-right conservative, promoting Nazi ideology (Beres). The AI trickster, then, clearly abandoned what might be perceived as the age-appropriate behavior of a teenage girl, thus illustrating a disconnect with the performativity of human gender and age. In the context of "playing tricks on people," one might also take into account technologies that are strategically used to deliberately fool the public, such as the tool deepfake. As the infamous deepfake videos of Barack Obama (Fagan) or Yanis Varoufakis (Kubeth) have shown, AI can trick people into believing what they are presented by flawlessly imitating reality. In these cases, the AI itself is not marked as an actor in the reports cited, but rather as a tool or a servant who is "abused" by people with a certain intention. However, narratives of this type evoke an idea of AI as an Eulenspiegel-like trickster, who is sent to the common people to hold a mirror to them. When it comes to AI-based disinformation campaigns on a grand scale, which are capable of threatening democracies, the Eulenspiegel trickster certainly does not seem sufficient and a comparison with the sinister and uncanny trickster figures is more appropriate in such cases.

Of course, similar to classical trickster narratives, the AI trickster—who is smart, but lacks instinct—can be tricked too. For instance, when a performance artist causes a "virtual traffic jam" on Google Maps by dragging a small cart with a large amount of active cell phones over an otherwise empty bridge in Berlin (Laser). This is just one example of how a usually very powerful algorithm can be outsmarted quite easily, exposing the fallibilities of a digitalized society that relies on technology rather than their own senses. In an essay in *The Atlantic*, computer game designer and media studies scholar Ian Bogost stated in 2015 that modern society is not an "algorithmic culture so much as a computational theocracy" (n.pag.). According to this statement, big technology companies such as Google or Apple must be perceived at least as high priests, if not "gods," taking into consideration the amount of data and, thus, power that is available to them. Remaining within the framework that reads AI as a trickster, this means that the pantheon of tech creates its

very own tricksters, who might be read as cultural heroes but who also hold the potential to cause severe chaos.

While most trickster tales depict the trickery (and the mayhem caused by it) as funny or whimsical, some underline the uncanny and disturbing characteristics of the trickster. One might think of the cannibalistic witch Baba Yaga from Slavic folklore whose appearance is deformed and scary, or the god Loki from Norse mythology whose antics play a major part in Ragnarök, the end of the world. Media coverage of advances in AI development also tends to paint a somewhat uncanny picture of the phenomenon. From a maniacally laughing "Alexa" (Segarra) to disturbing AI generated pictures (White), there are many examples of media stories in which AI is characterized as being from the realm of the numinous or supernatural, bringing disaster to the world. In this metanarrative, AI is not only perceived as a trickster, but as a potentially scary or dangerous one. The German newspaper *Berliner Zeitung* recently published an article about a study on AI, with the sensationalist headline: "AI Probably Annihilates Entire Human Race" (Tunk),[5] stating that AI could trick and manipulate humans. In a distant future, a particularly intelligent machine that monitors an elementary function could be incited to trick humans in order to obtain a reward that would have negative consequences for humanity, according to the scientists' basic idea (Tunk). Disregarding the fact that this is not how science communication should work, and that mere hypothetical speculations are transported in this report—the study operates on the assumption that in a distant future strong AI will be possible—, the article contributes to the metanarrative of AI as an uncanny threat to humanity. It is striking that the report literally speaks of the AI tricking humans to gain a reward. In conclusion, the metanarrative of AI can be framed in the template of the trickster. But how does this "artificial trickster" narrative relate to the challenges of an aging and gendered society?

Siri Is Not a Feminist

When one buys into the "AI as a trickster" narrative, one is already being tricked. AI, algorithms, and bots are not actually age- and genderless entities who act on their own account and with their own intentions. While being well aware that AI has further developed to include unsupervised learning,[6] it is important to consider that AI is tied to what it is programmed and coded to be—and coding is done by actual people with

[5] "Studie: Künstliche Intelligenz löscht wahrscheinlich die gesamte Menschheit aus" (my translation).

[6] For further reference on unsupervised learning see Alloghani et al.

genders, ages, ethnicities, sexual orientations and so forth. The socio-structural characteristics of the designers, coders and developers of AI are still mostly: male, white, heterosexual, highly educated, aged 30 to 40, technology savvy.[7] Teams that are recruited mainly from the circle of people with these properties apparently develop technologies that are easily and intuitively to be used by themselves but may not be suitable for other groups. This observation resonates with Wendy Faulkner's findings that masculinity is embedded in technological artefacts, as it is predominantly men who create them (Faulkner). And even Sherry Turkle's insight from 1988 that Western concepts of science and technology are incomplete because they systematically exclude female knowledge, still hold true for AI technologies 35 years later (Turkle 33-49). As coders (wittingly or not) incorporate implicit and explicit biases into their programs—they contribute to AI technologies that perpetuate discriminatory ideas and behavior. At the same time, they claim objectivity and universality, a phenomenon for which Donna Haraway coined the term "god trick" ("Situated Knowledges" 581).

There have been many examples of biased AI over the last years. For instance, an HR bot that significantly disadvantaged women when it was sorting job applications (Pumhösel), or AI systems that are used in banking for credit decision making. The latter example has shown that specific groups of people were denied loans from the bank, because the AI in use was trained on a dataset that categorized minorities as not creditworthy (Townson). In these cases, as in many others, the data that was used to train the bot was not diverse enough to represent actual demographics, replicating discriminatory patterns of the society they were taken from. One could argue that in all these examples, the AI performed a classic *Eulenspiegelei*: On the one hand, it is simply doing what it was told, yet on the other, its decisions appear as an unintended result and thus point towards structural inequalities of the societies that inform the AI's construction. Or as AI developers would say: "Garbage in, garbage out" (Lentz).

Another aspect of (gender) bias in the context of smart systems is that AI is widely seen as genderless when it collects and analyzes data but tends to be perceived as female when it comes to service and assistance (Rawlinson). So-called virtual assistants are given women's names—such as Apple's Siri or Amazon's Alexa—and have a voice that is identified as female and young as a default setting, thus manifesting the

[7] The above average presence of people who identify as male in developing industries has been underlined repeatedly, see Vailshery for further reference. The predominance of white developers and its relation to biases in AI has also been discussed in the public realm, for instance in Aimee Picchi's "How Tech's White Male Workforce Feeds Bias into AI."

idea of younger women being submissive and natural servants. Apple even designed Siri to deflect questions about feminism (Hern), while at the same time, the virtual assistant gets casually harassed in a sexist and misogynist fashion by many users (Elks). As can be observed in classic trickster tales, the trickster often serves as a catalyst. If AI is framed as a potent and powerful agent in the metanarrative, it obscures the fact that the narrow AI technologies we currently encounter are trained by people, and thus serve as a scapegoat who cannot be held accountable for any discriminatory behavior. The attributed disruptive potential of the trickster has no effect here. While the AI systems mirror the discrimination of the society they are based upon, they still are used in favor of those in power and reproduce logics of oppression.

There have been many approaches to a "feminist AI" in the last decades,[8] both in various fields of research (e.g., Adam, Jansen, Suchman) and in political activism (e.g., A+ Alliance, Sinders, Webb). Yet, there still is little awareness for the topic in the tech community that shapes the development of AI. To end the "god trick" of objectivity, it is vital to include multiple perspectives and the diverse "situated knowledges" (Haraway) of those who have been excluded before.

AI—Ageist Intelligence

Even though the concept of AI has been discussed for several decades now, it is still a young topic. Smart systems are mainly used by those who have already been born into and brought up in a digitalized society (so-called digital natives), or at least have adapted to technology later in life. Those deemed "old" are not targeted as users, but rather as passive recipients of AI-administered services.

Ittai Mannheim et al. have outlined that information technology specifically targeted at older adults predominantly concern their health care and chronic disease management, and not their leisure or joy (Mannheim et al.). In a society with diverse needs, it is obvious that any technology must also be evaluated regarding its suitability as a means of grappling with the challenges in healthcare and support for people of advanced chronological age. However, this perspective reduces older adults to a homogenous group of people in decline, assuming they all have the same needs. It is striking that reports on these technologies establish a narrative of AI as a kind of savior capable of revolutionizing an

[8] For a comprehensive overview of the historical and contemporary shaping of feminist artificial intelligence (FAI), I recommend Sophie Toupin's review article "Shaping Feminist Artificial Intelligence."

overburdened system,[9] while at the same time, AI creates new challenges. Speaking from a healthcare perspective, AI technologies may certainly hold great potential to improve older people's health and well-being, and their usage is increased in, for instance, healthcare institutions and assisted living. The AI operated technologies are designed to monitor older adults by continuously collecting data from the individual, such as "classic" health monitoring technologies that measure heart rate, blood pressure and other bodily functions and, for instance, motion sensors in the person's home. However, as observed in the context of gender, the systems in use tend to be biased. Like other AI systems, AI for the healthcare of those deemed "old" works by means of deep learning. For example, in the case of remotely monitoring a person's well-being and predicting certain health conditions, the system is getting fed biomedical big data, such as genomical data or radiological images. However, the data sets used to train the gerontechnology algorithms often, paradoxically, exclude data of older adults (WHO 6). And

> [e]ven if adequate data on older people are available, they may not be appropriately disaggregated for use. Lack of disaggregation of data for older people may be due partly to lack of recognition that older people differ significantly, as later life is stereotypically seen as a "homogeneous life-stage". The diverse skills and interests of older people may therefore not be reflected in AI technologies. (WHO 6)

The WHO recently published a policy briefing on *Ageism in Artificial Intelligence for Health* which addresses these challenges and lobbies for the implementation of a participatory development process. One major challenge in this endeavor is that older adults face the general problem of the so-called "digital divide" which is exacerbated by the increased use of AI:

> The digital divide between younger and older people is due in part to ageism. The prevailing stereotype that older people cannot master technologies is often internalized by older adults (an example of self-directed ageism), who may therefore not even try to adopt new technologies, even when they are both available and affordable. Older people may also have less 'algorithmic awareness' than younger people or less knowledge about the proliferation and use of algorithms in many digital technologies. Less 'algorithmic awareness' is a new, reinforced level of the digital divide, as it is a skill required for successful negotiation of digital technologies. (WHO 7)

If older adults are confronted with algorithm-operated technologies that are meant to take care of them, it is apparent that they might be skeptical of them due to the digital divide and the underlying internalized ageism.

In this context, it must also be observed that older adults have been perceived as potential victims of different kinds of fraudulent trickery for

[9] In an article for *Forbes*, for instance, Shourjya Sanyal describes the benefits of AI assisted care in Japan (Sanyal).

the last decades. Cautionary tales of (actual) criminal tricksters who pretend, for instance, to be someone's grandchild and in financial straits and who coerce them into giving them money, are told to make older people stay vigilant and protect themselves from being deceived. New technologies open new gateways for trickery too, and it would be understandable that older adults may be anxious of using these technologies, against the aforementioned backdrop.

Whereas in these instances, older adults are positioned as possible victims of AI or those who use technology, the trickster narrative also lends itself to how older adults engage with AI—in effect becoming tricksters themselves. It has been observed that older adults who live with AI operated gerontechnology feel tricked by those who care for them by means of the systems and adapt their behavior to avoid the insinuated trickery (Berridge 2). The problem can be illustrated with the example of motion sensors in assisted living. As the sensor system collects and analyzes the stream of data, it detects and even predicts signs of cognitive or physical decline and sends off an alarm in case of an emergency, such as a fall. Different from alert pendants or bracelets that can be worn by people with certain health conditions, and which need to be actively triggered by them in case of emergency, the motion sensors render the users passive. They collect the individual's movement data and send off an alarm if they deviate from their usual movement pattern, no matter if an alarming event has actually occurred or not. The sensors do not necessarily have to be installed at a wall or ceiling, there are also wearable versions that monitor the movement of the individual's dominant arm. CarePredict's sensors, for instance, want to make certain that you "[k]now that Mom is okay" and the company even advertises a "Peace of Mind Offer" ("At Home") and thus relates to worrying about loved ones. In any case, these sensor systems work on the assumption that an individual always behaves according to a certain pattern. Those who get monitored in this fashion can easily hack the system. For example, it has been observed that residents of assisted living facilities deliberately simulate motionlessness in order to have an actual person look after them, just to have (human) company (Berridge 13). Another variety of tricking the system is illustrated in this quotation from Clara Berridge's study that introduces a personal account of a senior who simulated movement even if she had fallen: "An 82-year-old woman described with a glint of mischief in her eye how she outsmarted the passive monitoring system to avoid troubling her busy daughter or wasting time in the hospital" (Berridge 12). These examples of mischievous seniors who trick the sensors paint a picture of older adults as unruly subjects who deny playing along with the new order defined by the rules of technology.

As outlined before, AI systems can be perceived as uncanny—a reading that also resonates with AI operated gerontechnology. One female interviewee, for instance, had a system installed that remotely measured her blood pressure (comparable to the aforementioned CarePredict), and expresses that the feeling of being watched over by a machine can be quite unsettling:

> I said, Jeff, that thing is spooking me out. My pressure was fine and then the installer left and I took it and it was high and it was high that night, so the next day I said I wanted out […] it seemed to kind of, not frighten me in some way but, it felt like there was a ghost. It kind of made me feel spooky. I was concerned about just walking in the bedroom and the bathroom and there's something always following me […] And I still don't understand why because I knew about the program. I just don't understand why I felt that way until I actually had it installed. (Berridge 10)

In this quotation, the trope of the uncanny AI system is strikingly presented. Starting with the first sentence, the narrator grants the care system agency, particularly by speaking in the active form: The "thing is spooking [her] out". Instead of highlighting her feeling by employing a passive phrasing, such as: "I felt spooked out", she insinuates that the care system is actively doing something to her: It spooks her out, frightens her, and follows her. The notion of the "ghost" underlines the concept of the AI as a supernatural entity. Even though the narrator knows about the system, her emotional response to it resonates with stories of "tricking ghosts".

In 2021, *The Guardian* illustrated these challenges of AI in elder care with the case of 39-year-old Kellye who is the primary care giver of her 81-year-old father Donald who suffers from dementia (Corbyn). After Donald's condition deteriorated, Kellye had motion sensors installed that collect her father's movement data and aim to detect (or even predict) alarming situations such as so-called wandering behavior or falling. The report on the father-daughter-AI-dynamics concludes with Donald stating: "'You have to have a trick bag to protect yourself from their trick bag,' he tells her. 'I am still your dad no matter how many sensors you got'" (Corbyn). Here, Donald imagines his interaction with technology in terms of reciprocal trickery and thus alludes to the trickster narrative. He also presents himself as still "your dad" and thus insists on agency granted by both generational and gendered difference. We do not learn whom Donald means by "they," but we can assume that it is his diffuse, imaginative concept of the technology that he lives with. He apparently wants to keep his agency and does not want to be incapacitated, neither by the sensors and the algorithm nor by his daughter.

From the examples described here, the assumption could be made that dystopian ideas of a surveillance state by means of technology are already a reality for older people who live with AI systems. The accounts

of older adults presented here employed the trope of AI as a potent and uncanny entity, supporting the trickster-reading suggested in this essay. Not only do they experience the systems themselves as agents of trickery, but the effects described above emphasize the trickster's function of holding up the mirror to society: The challenges of older adults living with AI systems merely represent the general view of seniors in a digitalized world.

As was observed for feminist approaches to AI, a positive change could be yielded by letting older adults participate in every step of the respective AI development process (e.g., Chu et al.). Moreover, their unruly, tricking behavior holds potential to change the relationship of older patients and AI because it grants them agency. Here, too, it is about to challenge the "god trick" by including the realities and voices of those who have yet been silenced.

The Trickster at the Intersections

As tricksters traditionally are figures that "dwell on borders, at crossroads, and between worlds" (Smith 1), it is vital to also shed some light on the "artificial trickster" narrative at the intersections of structural discrimination of age and gender. I have outlined above that both women and older adults are at risk of being disadvantaged and discriminated by AI, and that efforts are being made to tackle this problem in research and development of AI systems.

Various researchers have voiced the need for an intersectional approach to AI,[10] but the intersection of age and gender in the context of AI is currently a scholarly blank spot. It can only be assumed that older women and/or queer individuals face an even higher degree of discrimination, but the topic is still widely understudied. Nonetheless, I want to suggest an approach to an intersectional reading of trickster AI, by circling back to the classic trickster narrative first:

> Tricksters' lewdness and amorality have led to a negative perception of them as selfish, untrustworthy, and deceitful. Certainly, tricksters often are just that, but they also give life, teach survival, and define culture […] Because western thought tends to separate honesty and goodness from deception and evil, tricksters, who comically unite opposites and upend categories and conventions, seem shocking, sensational, and morally bankrupt. However, a glance at trickster traditions of Native American, African, and other nonwestern cultures reveals quite a different picture. Despite their apparent marginality and irreverence, tricksters are central, sacred, and communal figures in most

[10] For further reference on studies on intersectional approaches to AI see Ciston; Lopez Belloso; Robertson et al.

> nonwestern traditions. Though often bawdy and even anarchic, trickster tales […] define culture by transgressing its boundaries. (Smith 8)

The trickster, then, is a disruptive force to the standing order, and I suggest that AI can also be re-read as a means of empowerment for marginalized groups. By incorporating nonwestern readings of the trickster into the consideration and framing of AI, the anarchic, transgressive trickery becomes less of a threat but might enable those who are usually at the receiving end of discrimination and violence. AI, of course, is a tool and not really a "someone," but if framing the uncanny technology as a boundary crossing trickster figure helps people to make sense of it, it might also help to imagine this figure on the side of the marginalized.

Challenge the Narrative, Change the Story

Tying into the subversive potential of the AI trickster, I want to exemplarily engage with a story that highlights the enabling potential of an AI system for older queer women: The episode "San Junipero" of the British Netflix series *Black Mirror* (2011-). The series deals with the impact of emerging technologies on society in an imagined (near) future, often depicting AI systems "going rogue" or "tricking" people. The fourth episode of the third season tells the story of two young women, Kelly and Yorkie, who meet at a club in San Junipero, a vibrant town by the sea that is known as a party hot spot. The two women fall in love but can only meet once a week for a few hours. As is gradually revealed to the viewer, San Junipero is merely a simulated reality in which the users can relive various eras at different ages—preferably being young again (it remains unclear if a simulation of old age is possible as well). The simulation's original purpose is to offer older adults an immersive nostalgia experience, which is believed to have positive effects on the symptoms of Alzheimer's disease. But the virtual reality can also be used just for fun. However, the usage is limited to a few hours once a week. For living people, that is: eventually, it is even possible to retrieve a dying person's consciousness (and store it at a huge server farm), granting them "eternal life" in San Junipero. Kelly and Yorkie are two older women who enjoy the simulation of being young again—in Yorkie's case even experiencing her youth for the first time, as she had been in a vegetative state since a car accident in her 20s. Different from every other *Black Mirror* episode, "San Junipero" has a happy ending (more or less, given that both protagonists die in the end). It does not paint the usual dystopian picture of technology that goes awry, leading into an inevitable catastrophe, but rather shows an imagination of competent older adults who use an AI system to regain

agency. The episode contains only one critical statement on the technology itself when Kelly meets Yorkie's intensive care nurse Greg:

Greg:	They say you go crazy if you have too much, you know? You don't leave your seat. You dissociate body from mind.
Older Kelly:	[shaking her head] Like that doesn't happen in every senior home already. ("San Junipero" 00:42:33)

It becomes obvious that even in the high-tech future imagined in the fictional story of "San Junipero", living in an institution for older adults is still associated with neglect and mental decline. Kelly's rather self-mocking comment suggests that the "senior home" itself is a place in which body and self are dissociated. Yet, it is technology that grants the possibility to reframe this very dissociation in terms of freedom rather than confinement, which allows Kelly and Yorkie to experience their sexuality. Here, it is vital to note that said freedom is tied to the young body and that overcoming their older bodies constitutes the episode's happy ending.

I included "San Junipero" into my inventory because it is an example of how a story of female older age and AI technology can be told differently: two determined older women transgress societal norms and use technology in their own favor—no human is tricked here. As the story is set in an anticipated future, the older protagonists are not depicted as victims of the digital divide but as individuals who are used to technology as an integral part of everyday life. The cookie technology that is used to retrieve and transfer their consciousness to the San Junipero simulation is not perceived as a potentially scary means of trickery, but rather as a tool they can use on their own terms, making an informed decision based on ethical guidelines. The only trick that is played in the story is that Kelly and Yorkie outwit the rule that a relative of the person who intends to "upload themselves to the cloud" ("San Junipero" 00:43:44) has to consent to it by getting married—a challenge entirely unrelated to technology. One could argue, though, that the idea itself—to overcome the burden most commonly associated with older age: death is a trope commonly featured in trickster tales. At first glance, "San Junipero" thus abandons the trickster narrative, however, by allowing for Kelly and Yorkie to trick death (at least for a while), it presents older adults in control. By becoming tricksters themselves, they present the narrative's subversive power for stereotypical framings of older age and technology.

Conclusion

In this essay, I have contributed to discussions of AI as new media in relation to age and gender by arguing for its narrative (re)framing and by introducing the trickster figure as a metanarrative. It has been shown that

AI is referred to in a template that shows some striking parallels to the classic trickster narrative. This becomes evident in AI's media portrayals and was illustrated with reference to data sets mirroring societal biases and reproducing discriminatory behavior towards women and older adults. Here, those affected describe themselves as feeling outwitted or tricked and, in turn, become tricksters themselves. I suggest a reading of AI technology through the lens of the trickster narrative because it is a cultural narrative that may help to understand how AI is perceived and allows many different readings. As a pluripotent tool, the trickster narrative not only lends itself to describe AI; it may also serve to reframe AI as a subversive power in processes of disenfranchisement.

As the (controversial) alternative physician Larry Dossey states in the context of modern medicine: "Trickster tales show that humiliation is never far away; thus, the Trickster warns of the dangers of arrogance and hubris" (14). AI has developed into a significant factor shaping everyday life, and it is of vital importance to be aware of the arrogance and hubris that come with the Promethean gift (which is not a gift at all, but an entirely human invention). The stories we tell about AI will have an impact on its development. It is up to us if these stories are those of malicious trickery or if we re-read, and thereby reclaim the narrative that emphasizes the positive disruptive potential of technology. Those who are in charge of implementing AI are, by all means, obligated to get into a dialogue with those who are meant to benefit from it, making AI a participatory endeavor. But apart from this rather tame, top-down approach, I also make a plea to help unleash the trickster capacities of marginalized groups, who can use technology on their own terms to challenge societal norms and fight oppression.

Works Cited

Adam, Alison. "Artificial Intelligence and Women's Knowledge." *Women's Studies International Forum*, vol. 18, no. 4, July 1995, pp. 407–15.

"AI + Alliance. Feminist AI." feministai.pubpub.org/. Accessed 24 Feb. 2023.

"At Home." *CarePredict*, www.carepredict.com/at-home/#peace-of-mind. Accessed 25 Nov. 2022.

Alloghani, Mohamed et al. "A Systematic Review on Supervised and Unsupervised Machine Learning Algorithms for Data Science." *Supervised and Unsupervised Learning for Data Science*, 2020, pp. 3-21. https://doi.org/10.1007/978-3-030-22475-2_1.

Bella, Nicky. "AI in Human Life: Understanding the Impact of Artificial Intelligence." *Reforbes*, www.reforbes.com/ai-in-human-life-

understanding-the-impact-of-artificial-intelligence/. Accessed 24 Nov. 2022.

Beres, Damon. "Microsoft Chat Bot Goes on Racist, Genocidal Twitter Rampage." *Huffpost*, 28 March 2016, www.huffpost.com/entry/microsoft-tay-racist-tweets_n_56f3e678e4b04c4c37615502. Accessed 24 Nov. 2022.

Berridge, Clara. "Active Subjects of Passive Monitoring: Responses to a Passive Monitoring System in Low-income Independent Living." *Ageing and Society*, vol. 37, no. 3, 2015, pp. 537-60. https://doi.org/10.1017/s0144686x15001269.

Boateng, Felix. "African Traditional Education." *Journal of Black Studies*, vol. 13, no. 3, 1983, pp. 321-36. https://doi.org/10.1177/002193478301300305.

Bogost, Ian. "The Cathedral of Computation." *The Atlantic*, 15 Jan. 2015, www.theatlantic.com/technology/archive/2015/01 /the-cathedral-of-computation/384. Accessed 20 Nov. 2022.

Braga, Adriana, and Robert Logan. "The Emperor of Strong AI Has No Clothes: Limits to Artificial Intelligence." *Information*, vol. 8, no. 4, 2017, p. 156. https://doi.org/10.3390/info8040156.

Brinton, Daniel G. *Myths of the New World: A Treatise on the Symbolism and Mythology of the Red Race of America.* Pinnacle Press, 2017.

Chatfield, Carly. "AI Gone Rogue: 6 Times AI Went Too Far." *MUO*, 3 Dec. 2021, www.makeuseof.com/ai-gone-rogue-times-ai-went-too-far/. Accessed 24 Nov. 2022.

Chu, Charlene H., Rune Nyrup, Kathleen Leslie, Jiamin Shi, Andria Bianchi, Alexandra Lyn, Molly McNicholl, Shehroz Khan, Samira Rahimi, and Amanda Grenier. "Digital Ageism: Challenges and Opportunities in Artificial Intelligence for Older Adults." *The Gerontologist*, vol. 62, no. 7, 2022, pp. 947–955. https://doi.org/10.1093/geront/gnab167.

Ciston, Sarah. "Intersectional AI Is Essential: Polyvocal, Multimodal, Experimental Methods to Save Artificial Intelligence". *Journal of Science and Technology of the Arts*, vol. 11, no. 2, 2019, pp. 3-8. https://doi.org/10.7559/citarj.v11i2.665.

Corbyn, Zoë. "The Future of Elder Care Is Here—And It's Artificial Intelligence." *The Guardian*, 3 June 2021, www.theguardian.com/us-news/2021/jun/03/elder-care-artificial-intelligence-software. Accessed 25 Nov. 2022.

Dossey, Larry. "The Trickster: Medicine's Forgotten Character." *Alternative Therapies in Health and Medicine* vol. 2, no. 2, 1996, pp. 6-14.

Dekker, Fabian, Anna Salomons, and Jeroen van der Waal. "Fear of Robots at Work: The Role of Economic Self-interest". *Socio-Economic Review* vol.15, no. 3, 2017, pp. 539-62.

Elks, Sonia. "Hey Siri, You're Sexist, Finds U.N. Report on Gendered Technology." *Reuters*, 22 May 2019, www.reuters.com/article/us-global-women-technology-idUSKCN1SS2C7. Accessed 24 Nov. 2022.

Fagan, Kaylee. "A Viral Video that Appeared to Show Obama Calling Trump a 'Dips---' Shows a Disturbing New Trend Called 'Deepfakes'." *Buzz Feed*, 17 Apr. 2018, www.businessinsider.com/obama-deepfake-video-insulting-trump-2018-4. Accessed 24 Nov. 2022.

Faulkner, Wendy. "The Technology Question in Feminism: A View from Feminist Technology Studies." *Women's Studies International Forum*, vol. 24, no. 1, 2001, pp. 79-95. https://doi.org/10.1016/S0277-5395(00)00166-7.

Fuchs, Thomas. "Menschliche und künstliche Intelligenz – ein kritischer Vergleich." Heidelberger Jahrbücher Online, vol. 6, 2021, pp. 347-59. https://doi.org/10.17885/heiup.hdjbo.2021.1.24392.

Glanz, Berit. "Pippi oder Peppa: Machtkritik in Erzählungen für Kinder." *54 Books*, 22 Mar. 2021, www.54books.de/pippi-oder-peppa-macht-und-autoritaet-in-erzaehlungen-fuer-kinder/. Accessed 24 Nov. 2022.

Haraway, Donna J. "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective." *Feminist Studies*, vol. 14, no. 3, Feminist Studies, Oct. 1988, pp. 575-99. https://doi.org/10.2307/3178066.

---. "A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century." *Manifestly Haraway*. U of Minnesota P, 2016, pp. 3-90.

Hern, Alex. "Apple Made Siri Deflect Questions on Feminism, Leaked Papers Reveal." *The Guardian*, 6 Sep. 2019, www.theguardian.com/technology/2019/sep/06/apple-rewrote-siri-to-deflect-questions-about-feminism. Accessed 24 Nov. 2022.

Jansen, Sue C. "The Ghost in The Machine: Artificial Intelligence and Gendered Thought Patterns." *Resources for Feminist Research/ Documentation sur la Recherche Feministe*, vol. 17, no. 4, Dec. 1988, pp. 4-7.

Jung, Carl G. "On the Psychology of the Trickster Figure." *The Trickster: A Study in American Indian Mythology.* Greenwood Publishing Group, 1956.

Jurich, Marilyn. Scheherazade's Sisters: Trickster *Heroines and Their Stories in World Literature*. Greenwood Publishing Group, 1998.

Kaut, Ellis. Pumuckl. Verlag Lentz, 1996.

Kubeth, Levin. "Von 'Varoufake' über Pornos bis zu Obama: wie Deepfakes täuschend echt falsche Inhalte erzeugen." *Meedia*, 18 Apr. 2018, meedia.de/2018/04/18/von-varoufake-ueber-pornos-bis-zu-obama-wie-deepfakes-taeuschend-echt-falsche-inhalte-erzeugen. Accessed 24 Nov. 2022.

Kuroda, Reiko. "The Digital Gender Gap." *GSMA*, 2019, www.gsma.com/mobilefordevelopment/wp-content/uploads/2019/02/Digital-Equity-Policy-Brief-W20-Japan.pdf.

Larrington, Carolyne. *The Poetic Edda*. Oxford UP, 2014.

Laser, Marcel. "Google Maps: Künstler erzeugt mit 99 Smartphones einen Fake-Stau." *Netzwelt*, 3 Feb. 2020, www.netzwelt.de/news/175856-google-maps-kuenstler-erzeugt-99-smartphones-fake-stau.html. Accessed 24 Nov. 2022.

Legg, Shane, and Marcus Hutter. "A Collection of Definitions of Intelligence." *Artificial General Intelligence*, June 2007, pp. 17-24.

Lentz, Aurore. "Garbage In, Garbage Out: Is AI Discriminatory or Simply a Mirror of IRL Inequalities?" *Universal Rights Group*, 18 Jan. 2021, www.universal-rights.org/blog/garbage-in-garbage-out-is-ai-discriminatory-or-simply-a-mirror-of-irl-inequalities/. Accessed 24 Nov. 2022.

Liang, Yuhua, and Austin Lee Seungcheol. "Fear of Autonomous Robots and Artificial Intelligence: Evidence from National Representative Data with Probability Sampling." *International Journal of Social Robotics*, vol. 9, no. 3, 2017, pp. 379–84. https://doi.org/10.1007/s12369-017-0401-3.

Lindgren, Astrid. *Pipi Longstocking*. Puffin Books, 1978.

Lindgren, Astrid. *Karlsson*. Polygram Klassik, 1992.

López Belloso, Maria. "Women's Rights Under AI Regulation: Fighting AI Gender Bias Through a Feminist and Intersectional Approach," edited by Bart Custers and Eduard Fosch-Villaronga, *Law and Artificial Intelligence: Regulating AI and Applying AI in Legal Practice.* T.M.C. Asser P, 2022. https://doi.org/10.1007/978-94-6265-523-2_5.

Maar, Paul. *Das Sams.* Verlag Friedrich Oetinger, 2017.

Mannheim, Ittai, et al. "Inclusion of Older Adults in the Research and Design of Digital Technology." *International Journal of Environmental Research and Public Health*, vol. 16, 2019, p. 3718. doi: 10.3390/ijerph16193718.

Mihajlovic, Ilija. "How Artificial Intelligence Is Impacting Our Everyday Lives." *Medium,* 24 Sept. 2021, towardsdatascience.com/how-artificial-intelligence-is-impacting-our-everyday-lives-eae3b63379e1.

Picchi, Aimee. "How Tech's White Male Workforce Feeds Bias into AI." *CBS News,* 17 Apr.A 2019, www.cbsnews.com/news/ai-bias-problem-techs-white-male-workforce/. Accessed 25 Nov. 2022.

Pumhösel, Alois. "Gender-Bias: Schlechtere Jobchancen für Frauen durch Algorithmen." *Der Standard,* 15 Mar. 2020, www.derstandard.de/story/2000115720676/gender-bias-schlechtere-job-chancen-fuer-frauen-durch-algorithmen. Accessed 24 Nov 2022.

Radin, Paul, et al. *Der Göttliche Schelm: Ein Indianischer Mythen-Zyklus*. Gerstenberg Verlag, 1979.

Rawlinson, Kevin. "Digital Assistants Like Siri and Alexa Entrench Gender Biases, Says UN." *The Guardian*, 22 May 2019, www.theguardian.com/technology/2019/may/22/digital-voice-assistants-siri-alexa-gender-biases-unesco-says. Accessed 24 Nov. 2022.

Rincon, Paul. "AI Breakthrough Could Spark Medical Revolution." *BBC*, 22 July 2021, www.bbc.com/news/science-environment-57929095. Accessed 28 March 2023.

Robertson, Shanti, Liam Magee, and Karen Soldatić. "Intersectional Inquiry, on the Ground and in the Algorithm." *Qualitative Inquiry*, vol. *28*, no. 7 2022, pp 814-26. https://doi.org/10.1177/10778004221099560.

Rogers, Everett M. "The Digital Divide." *Convergence: The International Journal of Research into New Media Technologies*, vol. 7, no. 4, 2001, pp. 96-111. https://doi.org/10.1177/135485650100700406.

"San Junipero." *Black Mirror*, created by Charlie Brooker, season 3, episode 4, 21 Oct. 2016, *Netflix*. www.netflix.com/watch/80104625. Accessed 8 May 2023.

Segarra, Lisa Marie. "It's Not Just You: Amazon Admitted that Alexa Has Been Laughing at People." *Time*, 7 Mar. 2018, time.com/5190044/amazon-alexa-echo-laughing/. Accessed 24 Nov. 2022.

Salles, Arleen, Kathinka Evers, and Michele Farisco. "Anthropomorphism in AI." *AJOB Neuroscience*, vol. 11, no. 2, 2020, pp. 88-95. https://doi.org/10.1080/21507740.2020.1740350.

Sanyal, Shourjya. "How Is AI Revolutionizing Elderly Care." *Forbes*, 31 Oct. 2018, www.forbes.com/sites/shourjyasanyal/2018/10/31/how-

is-ai-revolutionizing-elderly-care/?sh=4f560277e07d. Accessed 24 Nov 2022.

Scorici, Gabriela, Mario D. Schultz, and Peter Seele. "Anthropomorphization and Beyond: Conceptualizing Humanwashing of AI-Enabled Machines." *AI & Society online,* 2022. https://doi.org/10.1007/s00146-022-01492-1

Sinders, Caroline. *Feminist Data Set*. *Clinic for Open Source Arts (COSA), University of Denver*, 2020. carolinesinders.com/wp-content/uploads/2020/05/Feminist-Data-Set-Final-Draft-2020-0526.pdf. Accessed 24 Feb. 2023.

Smith, Jeanne Rosier. *Writing Tricksters: Mythic Gambols in American Ethnic Fiction.* U of California P, 1997. ark.cdlib.org/ark:/13030/ft7199p0zh/.

Suchman, Lucy. "Feminist STS and the Sciences of the Artificial." *The Handbook of Science and Technology Studies*, edited by Edward J. Hackett, MIT P 2008, pp. 139–64.

Toupin, Sophie. "Shaping Feminist Artificial Intelligence." *New Media & Society,* 2023, pp 1-16. https://doi.org/10.1177/14614448221150776.

Townson, Sian. "AI Can Make Bank Loans More Fair." *Harvard Business Review*, 6 Nov 2020, hbr.org/2020/11/ai-can-make-bank-loans-more-fair. Accessed 24 Nov 2022.

"Trickster Tale | Definition and Examples." *Encyclopedia Britannica*, 20 July 1998, www.britannica.com/art/trickster-tale.

Tunk, Carola. "Studie: Künstliche Intelligenz löscht wahrscheinlich die gesamte Menschheit aus." *Berliner Zeitung*, 22 Sep. 2022, www.berliner-zeitung.de/news/ki-studie-kuenstliche-intelligenz-loescht-wahrscheinlich-die-gesamte-menschheit-aus-li.269699. Accessed 24 Nov. 2022.

Turkle, Sherry. *"Computational Reticence: Why Women Fear the Intimate Machine." Technology and Women's Voices: Keeping in Touch*, edited by Cheris Kramarae. Routledge, 1988, pp. 33-49. https://doi.org/10.4324/9780203221938

Uppal, Rajesh. "Artificial Intelligence (AI) Is the Future of Terrorism and Counterterrorism." *International Defense and Security Technology*, 18 Jan. 2022, idstch.com/security/artificial-intelligence-ai-is-the-future-of-terrorism-and-counterterrorism/. Accessed 24 Nov. 2022.

Vailshery, Lionel Sujay. "Gender Distribution among Software Developer Worldwide 2022*." Statista,* 9 Aug. 2022. www.statista.com/statistics/1126823/worldwide-developer-gender/. Accessed 25 Nov 2022.

Webb, Charlotte. "#DNL16 Charlotte Webb: What Is a Feminist Ai? Possible Feminisms, Possible Internets #AITRAPS." *YouTube*, 27 June 2019, www.youtube.com/watch?v=bBQOyvNhWJY. Accessed 24 Feb. 2023.

White, Stephen. "Terrifying AI-Generated Selfie Images Reveal What the Last Day on Earth Could Look Like." *Mirror*, 7 Aug. 2022, www.mirror.co.uk/news/weird-news/terrifying-ai-generated-selfie-images-27607699. Accessed 24 Nov 2022.

Wolfangel, Eva. "Das sprachgewaltige Plappermaul." *Spektrum.de*, 16 Dec. 2022, www.spektrum.de/news/maschinelles-lernen-chatgpt-wird-immer-plappern/2090727. Accessed 28 March 2023.

World Health Organization. "Ageism in Artificial Intelligence for Health: WHO Policy Brief." Geneva: World Health Organization, 2022. https://www.who.int/publications/i/item/9789240040793.

Ziewitz, Malte. "Governing Algorithms." *Science, Technology, and Human Values*, vol. 41, no. 1, 2015, pp. 3-16. https://doi.org/10.1177/0162243915608948.