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When Fandom Meets Artificial Intelligence: Rethinking Participatory Culture as Human-Community-Machine Interactions

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Abstract

Fandom as an interpretive community is the frontier for rich insights into the multi-layered interactions and practices between individual users, communities, and intelligent machines. To understand the challenges and opportunities Artificial Intelligence (AI) presents to contemporary media and culture, we discuss how fans engage with AI, as fandom provides rich insights for interactions between individual technology users, the collective, and machines. We propose rethinking participatory culture as human-community-machine interactions (HCMI) to understand the wider implications of AI to society and culture. We outline three emerging phenomena and potential consequences of fans' engagement with AI: (1) fan labour made (un)easy, (2) parasocial interactions (un)familiarised, and (3) realities (un)settled. Our conceptualisation transcends existing computer science research, which assumes technology users as isolated individuals and also fan studies, which largely focus on text-audience relationships and tend to take digital technologies for granted as the preconditions of fans' creative and playful practices.

Keywords

AI, Audience, Chatbots, Deepfake, Fan Community, Fansub, HMC, HMI, Misinformation, Transcultural Fandom, Socio-Technical Interactions, Virtual Idols, Vtubers

Introduction

Fandom, as an interpretive community, has epitomised participatory culture under convergence culture (Jenkins, 2006a; Jenkins et al., 2016). Historically, fans have been the first among other media audiences to experiment with new technologies, making the study of fans' engagement with digital technology emblematic of understanding contemporary media and culture (Booth, 2015). Artificial Intelligence (AI) technology has drawn much attention across different disciplines. AI is defined by McCarthy, who first coined the term, as 'the science and engineering of making intelligent machines' (Manning, 2020). Nowadays, much attention is given to AI's generative power through machine learning, that is, machines can learn somewhat like human beings. AI includes 'narrow AI', an intelligent system for one particular task, such as speech recognition or translation, and 'human-level' AI, such as social chatbots (Manning, 2020).

Why is AI relevant to fandom? This article argues that AI is not specifically new to fandom, as fans have already been engaging with AI. However, most fandom research tends to regard digital technologies as mere tools or platforms that *facilitate* the flourishing of fans' creativity and community. Participatory culture has mainly been studied as text-audience relationships enabled by technologies (such as Jenkins 2006a); we propose that it can also be conceptualised as human-machine relationships as a starting point to rethink the convergence of AI and participatory culture. Furthermore, existing research in computer science focuses on human-computer interactions (HCI), human-machine interactions (HMI), or human-machine communication (HMC), in which the 'human' is assumed to be an individual user of technology (Guzman et al., 2023). To emphasise how networked collectives shape such interactions, we propose rethinking participatory culture as human-community-machine interactions (HCMI) for a more productive approach to understanding AI's broader implications for society and culture. By illustrating the relevance of HCMI in three emerging phenomena of fans' engagement with AI, we argue that this approach transcends existing computer science research in HCI and HMI, which narrowly defines

technology users as atomised individuals, and fan studies research, which tends to take digital technologies for granted as the preconditions of fans' creative and playful practices.

Fan labour made (un)easy

The first facet of our conceptualisation of participatory culture as HCMI is how AI has been used for fans' participatory practices, which contests and perturbs the meaning of fan labour. In a media landscape where fan labour–works done by fans without payments–is increasingly exploited by the entertainment industry (Stanfill, 2019), what are the implications on fandom's gift economy and its transformative potential if fan labour is now undertaken by AI? There are two relatively known trends to date: (1) AI-generated fanart and fanfiction and (2) the use of AI in fansub and translation of paratexts. Fandom has been largely operated on a gift economy sustained by reciprocity among its members, such as fans showing appreciation to fanfiction writers who devote their fan labour to create and share their work for free (Turk, 2014). However, we now see botfic of *Harry Potter*, that is, fanfiction generated by robots drawing from a database of *Harry Potter* books, going viral on social media and garnering a following in a way that is akin to fans following human writers (Lamerichs, 2017). AI-*generated* fanart also calls into question the authenticity of creativity and skills. While fans have been using digital tools, which include AI-*assisted* technologies, such as Photoshop, to create digital fanart, fanarts produced by generative AI powered by machine learning and deep learning algorithms present ethical questions regarding originality, authenticity, and the value of fan labour (Mussies, 2023). Although Mussies noted that it might be too simplistic to dismiss AI-generated art, since feeding prompts to 'perfect' a piece of art still requires time and knowledge, we need to be mindful of the double movements here: how AI may democratise fan creative practices while exacerbating existing inequalities, given the fact that digital literacy and subcultural capital are required in order to generate content and combine artistic vision and manual execution (Mussies, 2023: 5.2).

Another use of AI in fandom is found in fansub and machine translations in transcultural fandom.[1] Fans have been relying on fansub and translations to engage with transnational media such as TV series and social media content of celebrities. These translations usually involve the unpaid labour of fans who work collectively in a timely manner. Fansub groups also act as cultural intermediaries and gatekeepers, as they translate not only the content of media texts but also paratexts such as cultural cues and social backgrounds (Guo and Evans, 2020; Lynch, 2020). Fans who provide translations of fanfiction and social media content sometimes attain celebrity status and accumulate their own fans. With the use of AI, such as Chat GPT, DeepL, or Google Translate, there has been a shift in dynamics. On the one hand, 'international fans' (fans who are not from the same country or region as their subject-of-fandom,[2] such as Latin American fans of K-pop) can interact with each other and celebrities on social media in real time. On the other hand, fansubbing groups use AI to help with translation in their competition for speed and/or accuracy in translation. While computer science literature has suggested that it is unlikely for AI to replace human translation due to nuances in cultural translation (Alzaabi and Rabab'ah, 2023; Soe et al., 2021), the increasing use of AI translation without sufficient acknowledgement of the potential issues with accuracy risks mistranslation and cultural misunderstanding, which fuel rumours and toxicity in fandom (Pang, 2023: 190). Hence, human-machine interactions in fandom always involve the broader networked collective, as some members' interactions with machines could result in a wider impact on fan communities, such as mistranslation fuelling fan wars. The democratising use of technology might reshape the relationship between celebrity fans, who do translation, and their followers, as fans still need to distinguish between the quality of their work.

[1] Our use of 'transcultural fandom' is drawn from the work of Chin and Morimoto (2012), that refers to border-crossing fandom which is not always sufficiently captured by the 'transnational' as an analytical framework.
[2] We use the expression 'subject-of-fandom' to refer to one's beloved media texts, such as celebrities, TV series, franchise. We choose not to use the expression 'object of fandom', which has been used more widely in conceptual discussion on fandom, to avoid the implications of objectification and dehumanisation and to highlight inter-subjectivity in fandom.

Parasocial interactions (un)familiarised

Another recent trend we observe is the (un)familiarisation and (re)imagination of parasocial interaction between fans and their subject-of-fandom when AI is involved. Parasocial interactions in the contexts of fan and celebrity studies have departed from their earlier negative connotations ('psychological lack') to being a part of normative media cultures (Hills 2015: 463). AI's impact on parasocial interactions in fandom could be observed by the rise of virtual performers–virtual idols, streamers, and YouTubers (Vtubers), who are mediatised noncorporeal characters with the appearance of agency (Conner 2016:131). They are usually featured in live-streaming videos and attract fans' following. Existing works tend to frame virtual performers' fandom as imaginary parasocial relationships, manifesting debates on the 'authenticity' of virtual/real interactions. Recent work moves beyond such debates and focuses on how audiences *engage* with virtual performers. For example, audience's engagement with Hatsune Miku, a Japanese virtual idol and Vocaloid, underscored the participatory nature of audience's customisation of idol powered by AI under the culture of data-driven fandom, rendering Hatsune Miku being nowhere and everywhere at the same time (Lamerichs, 2018; Zaborowski 2016). Vtubers, on the other hand, gained popularity, especially during the COVID-19 pandemic, as the majority of the world was in lockdown. Strictly speaking, VTubers such as Kizuna Ai and Vox Akuma are not operated by AI but by human voice actor(s) using motion-capture technology and virtual avatars. Nonetheless, Vtubers often present themselves as AI machines to create a sense of nonhuman exoticism (Zhou 2021: 239-240). Such practices in the VTuber industry and the perceived 'nonhumanness' of AI shape fans' interactions with both Vtubers and other members in the fandom. Fans of Kizuna Ai accepted *her* 'nonhumanness' and bonded with each other over the emotional support they collectively received, even though they acknowledged that Kizuna was in fact operated by humans (Zhou 2021). More recently, Neuro-sama, the world's first AI VTuber, emerged. They are solely operated by AI and can interact with fans

on their own during live-streaming sessions through AI-generated voice (Chen, 2023). Research is needed to explore the implications of AI VTubers on fandom as HCMI. Questions to be explored include whether there will be differences between fans of virtual performers who *present* themselves as robots and AI Vtubers who *are* robots themselves, and how fans' input in moulding AI VTubers will be capitalised by the entertainment industry under digital capitalism.

Meanwhile, we see attempts to use communicative AI technologies to enhance parasocial interactions between celebrities and their fans. Recently, a former member of K-pop boyband GOT7, Mark Tuan, partnered with a technology company to create an autonomously automated 'digital twin', using OpenAI's GPT integration to resemble his likeness (Sherman 2023). Fans can visit the company's website and have one-to-one conversations with Tuan's avatar. It would be intriguing to explore how fan communities respond to idols' AI avatars and AI-synthesised voices, and how the parasocial interactions co-constructed through talking to idols' AI avatars (un)familiarise the perceived relationship between fans and idols. A recent research about K-pop fans who received paid AI-generated private calls from their favourite idol found that fans were willing to pay for those calls, but some did not appreciate them because the calls did not feel authentic (Kang et al., 2022). Even though idols' input was involved in providing audio samples to train AI voice calls, fans felt that those calls were not genuine efforts of communication and participation by their idols. Hence, this form of less-than-authentic communication generated by AI may risk imperilling the parasocial relationship between idols and fans. Whereas such HMI creates a pseudo-interaction between the idol and the fan may strengthen the parasocial imagination, the affordability of these calls might create new hierarchies within fandom as fans could be judged by the 'exclusive' content they received in the calls, or their investment in less-than-authentic interactions could be dismissed as bad taste and poor choice. In this sense, the perception of such HMI is much related to the fan community, which operates along gatekeeping and internal hierarchy. Given the scarcity of literature in this area at the moment, it is important to explore further whether future improved AI-communicative

technologies would change fans' minds or whether such responses from fans counter-argue against the pessimistic sentiments over AI taking over 'human' communications.

Realities (un)settled

Lastly, the third facet of our conceptualisation of fandom as HCMI concerns how fandom, as an interpretive community, *speculates* and *plays* with realities produced by generative AI. Deepfake refers to hyper-realistic videos created by relatively user-friendly software using AI technologies of deep learning models of face swaps (sometimes also with voice synthesisation) (Maras and Alexandrou, 2019; Westerlund, 2019). It allows users to merge materials from multiple sources to create realistic-looking videos of celebrities. Emerged in 2018, deepfake videos are usually designed for social media circulation with the aim of reaching a wide audience (Karnouskos, 2020: 139). Although fans have a long history of using celebrities' faces for fun or for creating new meanings, such as through gifs and memes, deepfakes could be more damaging to celebrities for their realism heuristic. Among them, the most notorious are pornographic deepfakes (Popova, 2020). These images and videos are difficult, if not impossible, to be completely removed online, as the recent pornographic deepfakes of Taylor Swift have shown (Verma and Mark 2024).

Other forms of deepfakes include realistic videos that convince audiences of a celebrity saying things they did not say. Fans' reactions and responses to deepfakes as collective interpretive communities will be an area of exploration for researchers since fandom is also known for its meticulous attention to detail and digital detective skills, known as forensic fandom (Harriss, 2017). Forensic fandom can be challenged by the hyper-realistic misinformation of deepfakes and create schism within and across different fan communities. In other words, fandom is a viable frontier ground (Ponder et al., 2023) in the sense that it presents the opportunity to observe how an affectively-invested, self-organised community develop digital literacy and skills to detect and combat deepfakes, deny unfavourable information by speculating them to be deepfakes, or use deepfakes as misinformation to spread conspiracy and promote anti-fandom. While fans are sometimes

criticised for being delusional (‘delulu’), deepfakes can further (un)settle the multiple realities projected by various fan theories (Demopoulos 2023).

While deepfakes are usually made for malicious purposes to spread misinformation, generative AI, and in particular, voice synthesisation, can create new realities to be used in non-malicious and playful ways. Typing ‘AI cover’ or keywords that combine singers’ names and ‘AI’ on video-sharing platforms, one may find themselves discovering a new genre of cover songs, such as an AI-generated version of Freddie Mercury’s cover of Michael Jackson’s *Thriller,* which reached nearly 1.6 million views in 9 months (matt 2023). The practice of covering has a long history in fandom, but this generative technology provides fans of deceased celebrities a new way of grieving and remembering their subject-of-fandom and also potentially helps attract new fans to the fandom. A technology company in South Korea used an AI synthesiser tool to recreate the voice of folk rock singer Kim Kwang-seok, who passed away in 1996 (Park and Kim 2021). Fans were able to listen to a new song covered by Kim on national TV, as the synthesiser was trained in Kim’s songs and learned to mimic his voice and style of singing. Likewise, Taiwanese singer Teresa Teng, who passed away almost three decades ago, was ‘re-created’ through thousands of cover songs on China’s video-sharing site Bilibili. However, this draws concerns regarding ownership and ethics. A recent controversy among fans who created AI-cover songs by the late Cantopop musician Ka Kui Wong and a media company which claimed to be part of the creation manifested the ambivalent ownership of AI-cover songs of deceased singers, revealing potential commercial exploitation of fan labour (Wong 2023).

Fans’ engagement with generative AI is also speculative with the aim to create new realities about their subject-of-fandom. Recent work in fandom highlights that fans recognise the importance of engaging with platform algorithms by collectively ‘gaming’ social media platform algorithms through the digital labour of posting and sharing content to enhance their subject-of-fandom’s visibility and reputation (Yin 2020, Zhang and Negus 2020). Following the same vein, in the near future, we may see fans extending their collective effort to train AI chatbots by feeding them favourable information about their favourite media texts. While it

may be impossible for fans to know or understand the training model behind each AI chatbot, they speculate AI technologies with the belief that their digital labour in feeding and training AI is meaningful and productive in promoting their favourite celebrity or text. This speculative logic of interaction is related to what Jenkins (2006b: 137) refers to as the collective intelligence of fans, as it is now extended to train and customise AI.

Participatory culture as Human-Community-Machine Interactions (HCMI)

In this essay, we call for rethinking participatory culture from a text-audience relationship to human-community-machine interactions (HCMI) through three arrays of fans' interaction with AI and their possible consequences – fan labour made (un)easy, parasocial interactions (un)familiarised, and realities (un)settled. Our intervention is twofold. First, the exploration of fandom's relationship with AI represents the missing collective, communal aspect of technological use in computer science literature, no matter how weak or 'imaginary' those communities might seem to be. Our argument of fandom from HMI to HCMI is an extension of Hills's (2015) observation of fandom, which has evolved from one-to-one parasocial interactions to communal, multisocial interactions, but we highlight that such interactions involve not just humans but also machines. Fandom as an interpretive community provides an excellent frontier to explore the complexities of such interactions in a social, everyday setting. Second, existing works in fandom tend to explore fans' creative practices as facilitated by digital technologies, and our discussion on fans' practices *around* technologies accentuates critical social, political, and ethical issues related to text-audience relationships. Computer science literature on 'human-machine interaction' tends to see human and machine as binary (the living agent and non-living agent), analogous to living agent to living agent interactions. Our conceptualisation of HCMI aims to highlight the interplay between these two modes of interaction. In other words, HCMI looks into the sophistication of the interaction between human-to-human (as community) and machines. By not assuming that humans are necessarily included in the community ('community-machine interaction'), we aim to highlight the ongoing negotiation and potential tension between individual members of

a fan community and the (imagined) collective that they belong to. This includes examining how human-machine interactions and community-machine interactions may align or diverge at different times. By emphasising the significance of networked collectiveness in fandom, we highlight that participatory culture's relationship with AI is networked socio-technical interactions, which are far beyond an individual human working with machines. HCMI highlights the fact that some humans work with machines and subsequently influence the wider community in a multitude of ways.

As Guzman and Lewis (2020) suggest, the heart of AI's challenge is the blurring ontological divide between humans and machines; to fandom in particular, the challenge is how AI shapes and reconfigures relationships among individual fans, fan community, and their subject-of-fandom under digital capitalism. Our discussion here exemplifies the challenges and opportunities presented by AI to the wider society. If media is a medium of technology which does not only enable communication but also social and cultural practices that emerge around it (Jenkins, 2006a: 13–14), what we expect to see when fandom meets AI, is the emergence of new interpretive and speculative practices around this emerging technology which raises critical questions about ownership of creativity, authenticity of interactions, and exploitation of fan labour. The HCMI approach we propose provides the basis for a more nuanced analysis of interactions between human and nonhuman agents with a focus on collective social and cultural practices, with potential synthesis with different theoretical approaches, such as Bourdieunian's notion of habitus and social theory on practice.

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