

# Proceedings from the Document Academy

---

Volume 11  
Issue 1 *Proceedings from the 2024 FanLIS  
Symposium*

Article 3

---

2024

## Archiving the Ephemeral in Digital Public Space: Using Speculative Design to Consider Collaborative Fan Play in the Metaverse

Naomi Jacobs  
Lancaster University, [naomi.jacobs@lancaster.ac.uk](mailto:naomi.jacobs@lancaster.ac.uk)

Follow this and additional works at: <https://ideaexchange.uakron.edu/docam>



Part of the [Art and Design Commons](#), and the [Communication Technology and New Media Commons](#)  
Please take a moment to share how this work helps you [through this survey](#). Your feedback will be important as we plan further development of our repository.

---

### Recommended Citation

Jacobs, Naomi (2024) "Archiving the Ephemeral in Digital Public Space: Using Speculative Design to Consider Collaborative Fan Play in the Metaverse," *Proceedings from the Document Academy*. Vol. 11 : Iss. 1 , Article 3.

DOI: <https://doi.org/10.35492/docam/11/1/3>

Available at: <https://ideaexchange.uakron.edu/docam/vol11/iss1/3>

This Conference Proceeding is brought to you for free and open access by University of Akron Press Managed at [IdeaExchange@UAkron](mailto:IdeaExchange@UAkron), the institutional repository of The University of Akron in Akron, Ohio, USA. It has been accepted for inclusion in Proceedings from the Document Academy by an authorized administrator of [IdeaExchange@UAkron](mailto:IdeaExchange@UAkron). For more information, please contact [mjon@uakron.edu](mailto:mjon@uakron.edu), [uapress@uakron.edu](mailto:uapress@uakron.edu).

---

## Archiving the Ephemeral in Digital Public Space: Using Speculative Design to Consider Collaborative Fan Play in the Metaverse

### Cover Page Footnote

Thank you to the BTMD player who shared screenshots of the game on Twitter for permission to reproduce those here, and for Javid Denkins, whoever you may be, for providing blanket permission to discuss the ARG in academic contexts

## Introduction

Recently, there has been more attention paid to theorisations of fandom through the lens of play. Notably, Line Nybro Petersen's book 'Mediatized fan play' (2022) considers how 'play modes' can describe the practice of what fans do when they share, create and collaborate as a creative practice. This playfulness means that the boundaries of how fans create can be fluid; what is 'poached' (a la Jenkins, 1992) is not simply used in a static way or transformed in a single instance, but part of a larger tapestry of continuous creative engagement that might include such material as communal storytelling, referential material, memes, and in-jokes. This echoes De Kosnik's (2016) description of fan archives as 'archontic production'; continuously recreated and reinstated through a practice of performance and reperformance.

This shift is facilitated by new technologies. Fans have long been at the forefront of technology adoption, being among the early adopters of the internet, the web, and social media, bringing these tools for communication and play into existing conceptions of fandom (Booth, 2017). The collaborative co-creation and play activities of fans may take place across multiple digital platforms, often simultaneously and in a way that is interlinked. Research has shown that fan communities migrate across platforms over time (Dym and Fiesler 2018, Fiesler 2018). For example, strong fan communities have been seen on platforms including Livejournal, Tumblr and Twitter. These platforms may not have been developed intentionally with fans in mind, but form a nexus for community activity with migrations away often seen when conditions on the platforms change. However, while triggering events may be sudden, these migrations often do not have firm fixed boundaries, and at any given moment an individual fan may use multiple platforms as a networked individual (Garrison and Jacobs, 2020). Play may therefore spread beyond the bounds of a single platform, as the affordances of digital spaces become opportunities for new forms of play. As Wagenaar (2024) notes, "Fans, in [the digital society] context, are exceptionally skilled players whose play practices can provide broader insights into how people relate to and navigate polymedia environments".

In the moment of playful fannish creation, there may not necessarily be much thought given to what happens afterwards. The joy of such experiential, temporal experiences may be in their participation and co-creation. However, this is at odds with the common desire of fans to collect, keep and catalogue. One issue with archiving such experiences is the fragility of digital content, and of the platforms themselves. Digital decay and lack of permanence has led to the loss of many early

digital works (De Kosnik, 2016), and it is a common challenge for changing platform policy to lead to material being removed because it no longer conforms to the requirements of the platform. Examples include the ‘Strikethrough’ event on Livejournal which precipitated the foundation of the fan-created and owned Archive of Our Own (Heeg, 2023) and Tumblr’s so-called ‘porn ban’ where adult material was disallowed, with challenges experienced by those attempting to archive it (Sybert, 2022). Digital content may also be impacted by shifting technical infrastructure such as changes in APIs (Garg et al, 2023) or collapse of platforms themselves (McCammon et al, 2022).

The nature of a distributed transmedia experience means that it may also be difficult or impossible to recreate outside of its initial context, especially if liveness is a component. This is not unique to fan creations, as there are many known challenges when it comes to archiving born-digital material (Grigar, 2021). Liveness is itself often a key part of the fan experience, and a mechanism through which value is maintained; the notion of ‘being there’ for the live experience has been shown in the case of theatre and music to make a connection between performers and audience members (Reason and Lindeloff, 2016) and this extends to inter-fan connections (Jacobs, 2018). The temporary and ephemeral nature of live experiences can lend cultural capital to fans who were part of it (Garside, 2018). This liveness may be related to experiencing a singular event such as a performance, but can also be a feature when time-sensitive collaborative production is part of the playful creative engagement, such as in the case of interactive role play, or Alternate Reality Games (ARGs) which encourage multiperson, multiplatform engagement with a storytelling experience.

This tension between unique experiential fan activity, and the desire to archive and retain traces of community practice will only continue to deepen as technologies develop and evolve. With the introduction of AI and associated technologies, there are ever increasing opportunities for personalisation and fast-paced production. Equally, there are opportunities for recording experiences that previously may have been entirely ephemeral, if these are conducted in the digital space.

In the remainder of this paper, in order to consider the current landscape I first give more information on fandom-based ARGs and present an example of an existing distributed, collaborative digital fanwork (‘Blow the Man Down’) and the challenges with archiving such ephemeral experiences. I then introduce speculative design as an approach with which to consider new challenges and opportunities which may arise in this space when new technologies - in this case the metaverse - are used as platforms for such experiences, and how this interacts with archiving

and sharing the experience to those outside the initial participants. A speculative scenario is presented to engage with some of these questions, providing the basis for a final closing discussion.

### **Collaborative Storytelling as Collective Play**

Although much fan activity can be seen through the lens of play, this is most explicit when fan creativity takes the form of a game. Games have set rules, and are created to allow players to interact within that rule set. Alternate Reality Games, or ARGs, are transmedia experiences (Jenkins, 2008) wherein the boundaries blur between ‘reality’ and the game, bringing specially created elements into the ‘real world’. These can include physical elements such as letters, phone calls, interacting with actors etc, but many ARGs utilise digital worlds and blend their content into the web and social media. There have been ARGs created alongside media content to encourage playful fan activity; for example, Jenkins (2008) discusses the transmedia ARGs developed to promote the film *Artificial Intelligence: A.I* or the television show *Lost*.

These games are themselves a form of collaborative storytelling, as the nature and details of the game can be co-constructed by the players. Similarly to role-playing activities such as Dungeons and Dragons (D&D) or Live Action Role Play (LARP), the person guiding the game must be adaptive to the needs and creativity of the players; similar also to interactive theatre.

Because of this multimedia spread, their creative production aspects, liveness and temporal nature, ARGs make a useful case study when it comes to discussing challenges to archiving collaboratively produced multimedia works. By focussing on an ARG created within the context of fandom, and in fact as a fan work itself, we can also use it as a lens on how archiving of such digital ephemeral works has relevance to fandom.

The case study therefore chosen for this paper is an instance of where fans have created and co-created an ARG as a form of transformative work.

### **Blow the Man Down**

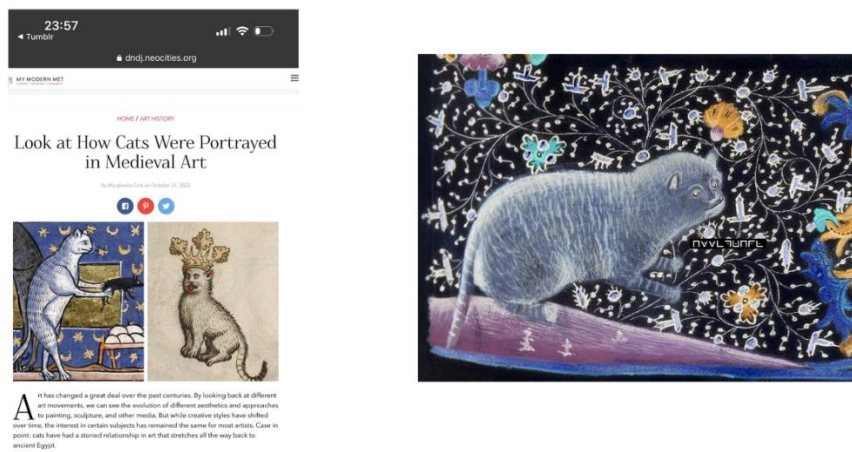
‘Blow the Man Down’ (BTMD), is the name used in this paper for an ARG which was created within the fandom for the television show *Our Flag Means Death* (OFMD). The initial Tumblr blog which would become the seed of the ARG was created by an anonymous author or authors in December 2022. It was titled ‘Javid Denkins’, as an apparent play on the OFMD creator and showrunner David Jenkins

who had a few days prior suggested he might have created a Tumblr account in response to Elon Musk's recent purchase of Twitter (Fig 1). The Javid Denkins account posted cryptic content which led many fans to speculate it was indeed being run by David Jenkins, despite (and because of) continued denials of this fact.



*Fig 1. Twitter exchange between the official Tumblr account and OFMD showrunner David Jenkins*

After an initial period of cryptic posts, in January 2023 the content became more elaborate, and began to incorporate cryptography, steganography and puzzles, prompting interaction by others to ‘solve’ the clues. As well as content posted directly on Tumblr, links out to additional content were posted, often using redirection links to disguise the final puzzle. For example, Fig 2 shows an image which was embedded on Tumblr which appears to be a link to an external news article (left). However, clicking on the link activated a redirect to a bespoke website including a ‘medieval cat art’ image which includes a cypher code visible below the cat’s chin (right).



*Fig 2: BTMD puzzle content using redirect links*

Some of these clues and puzzles existed only briefly, removed when their purpose was served. For example, some puzzles were embedded sequentially as part of images used in the Tumblr header. Others used bespoke external content, for example hosted on websites apparently created specifically for this purpose. Fig 3 shows how content on these sites changed sequentially as the puzzle progressed.

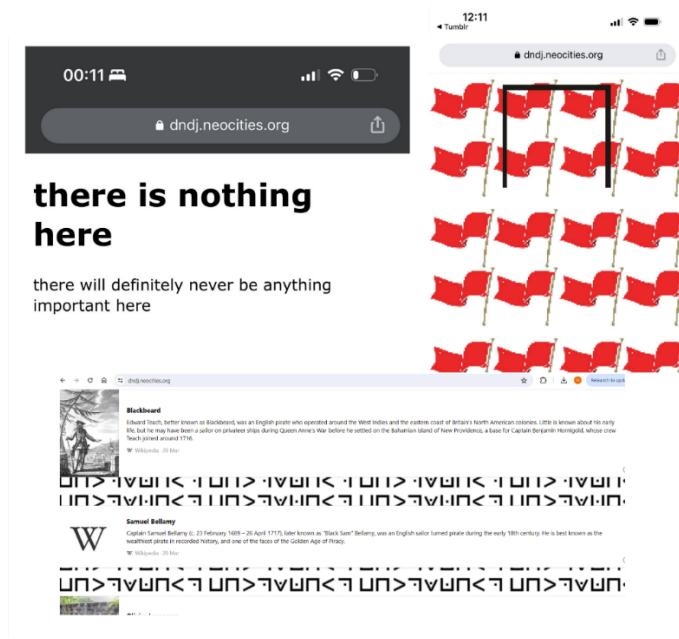


Fig 3: Sequential content seen on the homepage *dndj.neocities.org* on Feb 5<sup>th</sup> 2023, Feb 11<sup>th</sup> 2023, and the post-game page (screenshot taken 20<sup>th</sup> May 2024)

As the game developed, a wide range of multimedia content was unveiled, centring on a fanfiction posted on Archive of Our Own titled *Blow the Man Down*. In this story, the character of Javid Denkins was revealed to be the showrunner of a fictional show called *Blow the Man Down* (BTMD), of which AU (alternate universe) versions of the lead characters from OFMD were fans.

As the game unfolded, the multimedia content grew, including digital and physical ephemera. This included not only the main establishing fanfiction on AO3, and Twitter accounts ‘belonging’ to the lead characters, but also bespoke websites for characters and businesses mentioned, accounts on sites such as Pinterest and LinkedIn created ‘by’ the characters, and Tumblr, Twitter and AO3 accounts created by multiple (fictional) ‘fans’ of BTMD. These included shared material created by those fans, such as fan fiction, art, fanzines and other material relating to the fictional show.

Later, a form of role playing was incorporated where these social media accounts served to provide a real-time or anticipatory glimpse into the point of view of the characters whose story was being told in the AO3-hosted fanfiction. They interacted not only with each other, but also with people participating in the game



and responding to their tweets; game participants were rewarded for contributing their own art and fiction for the fictional Blow the Man Down show. The game-run twitter accounts reproduced fan behaviours, creating not only fan content such as analysis, fan fiction and art, but also less positive responses such as disagreements and arguments.

Although catered to a small, niche group of fans, a lot of effort clearly went into creating the game and associated material. In a sense, this was an act of multimedia performance, as the temporal nature meant that the puzzles and role-play unfolded alongside the posting of the associated fanfiction story. This performance is impossible to replicate, and someone wishing to explore the game and content now would find it difficult to do so. Not only are many of the links from the central Tumblr page no longer functional, but as Twitter continues to deteriorate due to changes implemented by Elon Musk, it is possible the tweets of the ‘characters’ will vanish, and that those coming to the story later may no longer be able to access the paratextual material situated there, which is currently linked from AO3. Even if the material remains accessible, the experience of post-hoc engagement will not be the same as the interactive experience of the original ‘players’. Liveness, temporality and communal experience and collaboration are key features of this and other interactive fan experiences. In this sense, is archiving possible, or even desirable?

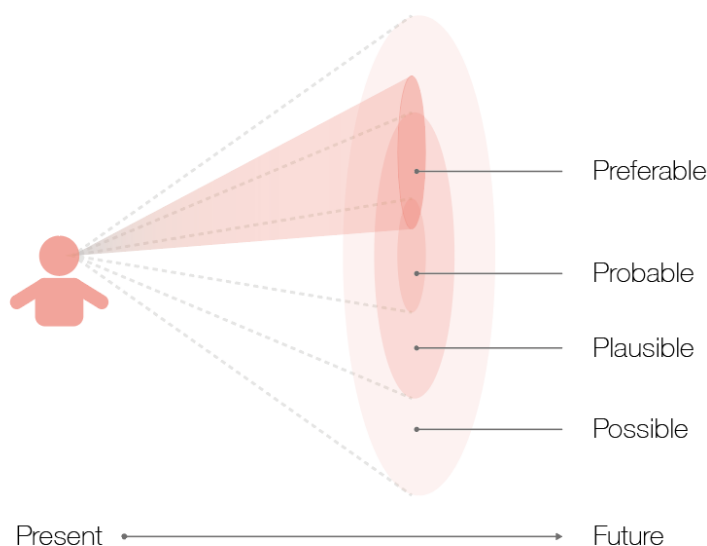
### **Speculative Design**

Considering real-world examples such as Blow the Man Down allows us to think about how archiving might be a challenge for such distributed storytelling and interactive play activities carried out by fans. However, technologies are rapidly developing and it is important to consider not just current challenges, but also future ones. One approach to doing this is to use a method called speculative design.

Speculative design is a field of Design Research which is particularly useful to approach such questions of complex future landscapes and the challenges they may entail. It involves crafting detailed speculations about possible futures or alternative presents, which can be interrogated to allow critical reflection both on design possibilities and our current moment and current design practice (Auger, 2013). This approach was popularised by Dunne and Raby in their 2013 book *Speculative Everything*, which placed critical and speculative design research in context with speculative fiction and the ways in which we imagine possible futures. It allows us ‘not to show how things will be but to open up a space for discussion’ (Dunne and Raby 2013). There are now many methods which are used for speculative design

practices, which often include creating highly developed and tangible design products to represent the speculative imaginings. For example, design fiction is the practice of creating physical objects which act as ‘diegetic prototypes’, or props from the future, which can be interacted with and interrogated (Bleeker et al, 2022)

It is important to distinguish speculative design approaches from forecasting or prediction. In speculative design, we consider the multiplicity of possible futures spreading out from the current moment. The futures cone (Hancock and Bezold, 1994, Voros, 2003) is a common way to visualise these multiple futures, which can be categorised into probable futures (those which are likely if things continue as currently) plausible futures (those which can be easily imagined to progress from the current) and possible futures (which may require a shift from the current trajectory). Within any of these we might also identify preferable futures, those which are more desirable and to be worked towards.



*Fig 4. The futures cone: Adapted from Hancock and Bezold (1994) and Voros (2003) by Nuri Kwon*

In a subsequent section, I will describe a speculative scenario which imagines what a possible future looks like in relation to archiving fan collaborative storytelling activities similar to *Blow the Man Down*, in a context where technological

advancements have allowed the implementation of metaverse systems. However, it is first necessary to define and contextualise terms relating to these emerging technologies.

### **Technological Grounding**

The word metaverse originates from a 1992 speculative fiction novel *Snow Crash* written by Neal Stephenson, in which an immersive virtual world exists in which people can inhabit a virtual avatar in order to play, meet, and conduct business. Since then, shared virtual worlds of this sort have continued to be researched and developed from early ‘multi user dungeons’ or MUDs, to large-scale game worlds known as ‘massively multiplayer online role playing games’ (MMORPGs) such as *World of Warcraft*, and virtual spaces such as *Second Life*. (Jacobs and Cooper, 2018). In the last few years, development of metaverse systems have been accelerating, along with significant public interest and hype, encouraged by companies investing in development of such systems, including the parent company behind Facebook who changed their name to Meta in 2021 (Kraus et al, 2022), linking it their intention “to bring the metaverse to life and help people connect, find communities and grow businesses” (Meta, 2021). However, implementations and definitions of the metaverse extend beyond Meta and are diverse. Generally, it is considered a term for immersive, digital, three-dimensional worlds, usually considered to have properties of persistence (i.e. they exist even when an individual user logs out) temporality and often decentralisation and interoperability; “in which users represented by avatars can participate socially and economically with each other in a creative and collaborative manner in virtual spaces decoupled from the real physical world.” (Ritterbusch and Teichmann, 2023).

There are interesting similarities between collaborative storytelling, and the features of metaverse systems. Liveness and time specificity is a key feature of both, as is the interactive nature – that multiple people are engaging in a shared experience. Discussions of metaverse systems often emphasise the need for interoperability so that multiple platforms and spaces can share content and be moved between – this echoes the multimedia and multi-textual nature of ARGs. Finally, the persistence that is a feature of spatial metaverse systems has resonance with the desire for archivable elements of fan creativity.

In the subsequent speculation, we also consider future implementations of Artificial Intelligence (AI) technology. AI technologies are by no means new, and systems built on technologies such as machine learning and algorithmic processing underpin

many familiar systems such as Google search. In the last few years however, there has been significant advances in the development of so-called Generative AI, including Large Language Models (LLMs) and image generating systems such as diffusion models. These systems function through the analysis and synthesis of large training data sets, by which they can generate novel content to respond to a prompt by the user, and they are increasingly entering fan-related spaces. For example, fans might interact with a synthesised version of celebrities and fictional characters (Rosenberg 2023), or synthesise celebrities' voices (Kang et al. 2022; Nyce 2023). These technologies may also trouble traditional notions of fan labour through its impact on generating fanworks (Li and Pang, 2024)

### **Speculative Scenario: Archiving Play in the Metaverse**

*It is the year 2034, and fans of the television show Whernside Manor have created an ARG, situated within the metaverse. This game invites other fans to participate in real-time, temporally situated play. The immersive metaverse space allows the players to see, hear, feel and even smell the experience as they participate, imagining themselves in the world of the television show and 'acting out' a fanfiction story that has been written for this purpose. Over the course of several days these fans can solve puzzles, find metatextual content located in different metaverse-hosted multimedia sites, and interact with each-other and characters created by the ARG writer. Some of these characters may be guided by the writers but implemented using AI, so that they can respond in real-time to the players and move forward the game.*

*As the game progresses, the nature of the metaverse and the digital context in which the game is being played means that every interaction is recorded with full sensory experience. After the game is complete, this allows people who are curious about it to re-experience and 'replay' the game. By accessing the archive, a player is invited to follow the prior experiences of a player. In a dream-like passive state, they are 'carried along' with the tangible experiences of one of the original players, experiencing the sights, sounds and smells as the game progresses in exactly the way initially experienced.*

*However, such a player accessing the archive is also offered the chance to engage with the game themselves – at any moment they may 'take over' the player record, and make a different choice than the original player. They might say something different to another character, or spend longer looking at a piece of material, or return to a pathway abandoned in the original experience. At that moment of choice, a new branching version of the game is created.*

*Since they are now playing what is effectively a new version of the game, other characters and players will need to interact with them. This may be other people playing who choose to engage with the archived experience at the same time. Or, the AI may take over all non-player characters. This AI is now using not only the specific instructions of the ARG creator, but has also learned through content generated during the first (and other) instances of the game being played.*

*Each new instance of the game is archived alongside the original, creating a new branching record of the experience. Each of these instances also feeds back into the AI, contributing to the training data to create better experiences for subsequent players. While the base textual materials of the original group of players is retained and can be re-accessed at any time, each individual new branch adds to the archontic production and the archive of game versions, each able to also be accessed by new players. A multiversal archive of metaverse storytelling is now available to curious fans eager to explore the game.*

## **Discussion**

The scenario described above might initially sound like an idealistic version of technology solving the problems of archiving collaborative multimedia fan play. However, it also allows us to interrogate further some of the questions that arise from such a possible future.

For example, we can consider the practical implications of such an archive. If every instance of the game is kept, how does someone engaging with it for the first time find worthwhile content? Should there be a moderation or curation layer added to surface the ‘best’ iterations of the game, and if so, who decides on that? What might search and tagging functions look like in such a system? This then leads on questions that echo current debates around moderation, policy and ethics. What if a player decides that they do not want their contribution archived – what are the processes by which it might be removed? Or what if archived games include illegal or objectionable content? Who might be excluded or marginalised by different policies implemented (or not) to manage this?

Ethical questions also extend to the wider societal implications of these technologies such as sustainability. We must consider what the implications are of continually running AI NPCs, the storage considerations of an archive of full-sensory immersive experiences, and of the peripherals needed to interface with it. Are there energy and carbon costs associated with this scenario?

We can consider whether this scenario is something that we would consider a ‘preferable’ future of immersive, collaborative fan games. Is passively experiencing the initial version of the game the same experience as the initial live interaction? Almost certainly not, though this does not necessarily mean it does not have value. Does interacting with a version of the game where an AI is controlling other characters and players have equivalent value to playing alongside other fans? Finally, we must consider whether attempting to archive such experiences is something that we actually think is not only possible, but desirable – is the ephemerality of such games and live play part of the point, and would this be devalued by attempts to archive it?

### **Conclusions**

As technologies of interaction and archiving continue to evolve and develop, concerns around questions of ethics, inclusivity, sustainability and value will only become more pressing. The scenario presented here does not answer these questions, but highlights challenges so that we can consider technology implications before it is too late to do anything about them. By using speculative methods we can thus consider questions about the potential impact of future technologies – this will help us to design them sensitively to mitigate these challenges.

Fans are highly creative and skilled at creating new forms of storytelling, interaction and play. It is therefore useful for developers of technological platforms and systems to use fan communities as a use-case when considering how future users might interact with the technology; fan appropriation can uncover affordances and aspects of technology that may not have been considered by the designers and developers, and reveal complexities of policymaking that are not always initially obvious. The goal is therefore to support a more inclusive and ethical design process for future archiving of digital spaces.

### **References**

- Auger, J. (2013). Speculative design: crafting the speculation. *Digital Creativity*, 24(1), 11-35.
- Bleeker, J., Foster, N., Girardin, F., Nova., N. (2022) *The Manual of Design Fiction*. Near Future Laboratory.
- Booth, P. (2017). *Digital Fandom 2.0: New Media Studies*. Peter Lang.

- De Kosnik, A. (2016). *Rogue archives: Digital cultural memory and media fandom*. MIT Press.
- Dunne, A., Raby, F. (2013). *Speculative Everything: Design, Fiction, and Social Dreaming*. MIT Press.
- Fiesler, C., Dym, B. (2020). Moving across lands: Online platform migration in fandom communities. *Proceedings of the ACM on Human-Computer Interaction*, 4(CSCW1), pp.1-25.
- Garg, K., Jayanetti, H.R., Alam, S., Weigle, M.C. and Nelson, M.L., (2023). Challenges in replaying archived Twitter pages. *International Journal on Digital Libraries*, pp.1-20.
- Garrison, S. T., Jacobs, N. J. (2020). LIFE AS A NETWORKED FAN. *AoIR Selected Papers of Internet Research*.
- Garside, E. (2018) “The World’s Turned Inside Out, and We Can Never Go Home Anymore”: Punchdrunk’s Site-Specific Theater and Fan Interaction. In Williams, R. (Ed.). (2018). *Everybody hurts: Transitions, endings, and resurrections in fan cultures*. University of Iowa Press.
- Grigar, D. (2021). Challenges to archiving and documenting born-digital literature: what scholars, archivists, and librarians need to know. *Electronic Literature as Digital Humanities*, 237.
- Hancock, T., Bezold, C. (1994). Possible futures, preferable futures. In *The Healthcare Forum Journal* (Vol. 37, No. 2, pp. 23-29).
- Heeg, S. (2023). I Want Us to Own the Goddamned Servers. *Stories of Feminist Protest and Resistance: Digital Performative Assemblies*, 217.
- Jacobs, N. (2018). Live streaming as participation: a case study of conflict in the digital/physical spaces of supernatural conventions. *Transformative Works and Cultures*, 28(9), 2018.
- Jacobs, N., & Cooper, R. (2018). *Living in digital worlds: designing the digital public space*. Routledge.
- Jenkins, H. (1992). *Textual poachers: Television fans and participatory culture*. Routledge.
- Jenkins, H. (2018) *Convergence Culture*. New York University Press.

- Kang, E, Kim, H., Kim, H., Kim, J. (2022). ‘When AI Meets the K-Pop Culture: A Case Study of Fans’ Perception of AI Private Call’. In . [https://ai-cultures.github.io/papers/when\\_ai\\_meets\\_the\\_k\\_pop\\_cultur.pdf](https://ai-cultures.github.io/papers/when_ai_meets_the_k_pop_cultur.pdf).
- Kraus, S., Kanbach, D. K., Krysta, P. M., Steinhoff, M. M., Tomini, N. (2022). Facebook and the creation of the metaverse: radical business model innovation or incremental transformation?. *International Journal of Entrepreneurial Behavior & Research*, 28(9), 52-77.
- Li, E. C. Y., Pang, K. W. (2024). Fandom meets artificial intelligence: Rethinking participatory culture as human–community–machine interactions. *European Journal of Cultural Studies*, 13675494241236146.
- Lindley, J., Coulton, P. (2015). Back to the future: 10 years of design fiction. In *Proceedings of the 2015 British HCI conference* (pp. 210-211).
- McCammon, M., Virgilio, D., Ogden, C., Ackermann, K., Zuckerman, E., Gehl, R., Akhtar, S., Al-Azri, S., Steele, C.K., Hamilton, A.M. Ben-David, A. (2022). Dead-and-dying platforms: a roundtable. *Internet Histories*, 6(1-2), pp.14-30.
- Meta (2021), “The Facebook company is now Meta”, Meta Press Release, available at: <https://about.fb.com/news/2021/10/facebook-company-is-now-meta/> (accessed 22 May 2024).
- Nyce, C. (2023). ‘The Real Taylor Swift Would Never’. *The Atlantic*, 31 March 2023. <https://www.theatlantic.com/technology/archive/2023/03/ai-taylor-swift-fan-generated-deepfakes-misinformation/673596/>.
- Petersen, L. N. (2022). *Mediatized fan play: Moods, modes and dark play in networked communities*. Routledge.
- Reason, M., Lindelof, A. M. (2016). *Experiencing Liveness in Contemporary Performance: Interdisciplinary Perspectives*. New York: Taylor & Francis.
- Ritterbusch, G. D., Teichmann, M. R. (2023). Defining the metaverse: A systematic literature review. *IEEE Access*, 11, 12368-12377.
- Rosenberg, A. (2023). ‘Custom AI Chatbots Are Quietly Becoming the next Big Thing in Fandom’. *The Verge*, 13 March 2023. <https://www.theverge.com/23627402/character-ai-fandom-chat-bots-fanfiction-role-playing>.



Sybert, J. (2022). The demise of #NSFW: Contested platform governance and Tumblr's 2018 adult content ban. *new media & society*, 24(10), 2311-2331.

Wagenaar, W. F. (2024). Discord as a fandom platform: Locating a new playground. *Transformative Works and Cultures*, 42.