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EVERYDAY DATA CULTURES

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The field of critical data studies has emerged at the intersections of digital sociology, cultural studies, and internet studies (Iliadis & Russo, 2016) and has made significant advances in theorising, and diagnosing the politics of, datafication. The collection, reuse and exploitation of personal data by both corporate and government organisations has provoked concerns about trust, privacy and surveillance, leading to calls for new data rights (Ruppert et al. 2017), improved data literacy (Fotopoulou, 2020), and 'big data ethics' (Zwitter, 2014). There is a growing chorus of scholarly voices sounding the alarm about the increased take-up and power of data-intensive technologies, both in terms of their ubiquity and in terms of the new or intensified forms of inequality that can result from them (for example Eubanks, 2018; Noble 2018).

This panel approaches the issue of datification from a different perspective. It engages with the question of how ordinary users of digital technologies know about, influence, resist or exploit these processes. The four papers deploy a range of qualitative methodologies to investigate how processes of datafication meet with, not only the subjective experiences of ordinary people, but the *practices* of everyday life. We draw on the model of 'everyday data cultures' proposed by Burgess (2017) with to explore the

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ways diverse data practices – including the production and circulation of data visualisation, modes of data storage and vernacular engagements with data literacy – can be understood as aspects of culture.

Following Burgess, we define everyday data cultures as the practices that form around and in response to the social media and other data (and data trails) that people generate as we go about our daily lives. These practices form from our diverse engagements with, experiences of, and approaches to understanding and negotiating these data

Our first paper investigates everyday engagements with TikTok's platform culture, based on interviews with TikTok creators – primarily jazz musicians. It examines the collective formation of the 'algorithmic imaginaries' through which creators seek to understand and manipulate the 'black box' of TikTok's 'For You' recommendations page. The second paper also engages with data literacies, investigating the ways that deepfakes are increasingly becoming an ordinary part of everyday visual data cultures. This paper analyses pedagogical content sourced from GitHub and YouTube to explore the ways that visual data manipulation is discussed as an everyday practice. The third paper draws industry press from the emergent field of 'sextech' to reflect on the ways that gendered sexual experiences are made legible via data visualisation – and how these emergent technologies intersect with much older understandings of normative gender and sexuality. Our final paper draws on 'show and tell' interviews with users of portable USB drives to consider the subjective materiality of data storage and data sharing via Burgess' data cultures framework.

Across these four papers, we address the everyday politics of social media platforms; the development of vernacular pedagogies of AI and machine learning practices; the historical datafication of sex and gender, and mundane workplace practices of storing, concealing and revealing personal data. In doing so, we seek to highlight and amplify everyday human agency, as well as explore its limits and uneven distribution, and consider how it is being transformed through the logics of data and the machines that feed on them.

References

Burgess J (2017) Hook-up apps' vernacular data cultures. Paper presented at the Social Life of Data symposium, April, RMIT University, Melbourne.

<https://eprints.qut.edu.au/209731/>

Eubanks, V., 2018. *Automating inequality: How high-tech tools profile, police, and punish the poor*. St. Martin's Press.

Fotopoulou, A., 2020. Conceptualising critical data literacies for civil society organisations: agency, care, and social responsibility. *Information, Communication & Society*, pp.1-18.

Iliadis, A. and Russo, F., 2016. Critical data studies: An introduction. *Big Data & Society*, 3(2), p.2053951716674238.

Noble, S.U., 2018. *Algorithms of oppression: How search engines reinforce racism*. New York University Press.

Ruppert, E., Isin, E. and Bigo, D., 2017. Data politics. *Big data & society*, 4(2), p.2053951717717749.

Zwitter, A., 2014. Big data ethics. *Big Data & Society*, 1(2), p.2053951714559253.

ALGORITHMIC RECOMMENDER SYSTEMS AND EVERYDAY DATA CULTURES: THE VIEW FROM JAZZ TIKTOK

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Algorithmic imaginaries and data literacies

Algorithmic recommender systems have become normalised in everyday digital media use (Striphas, 2015). With Nick Seaver (2017), we understand such systems as culture: they are dynamic and complex assemblages of material, social, and technical elements that don't simply operate on, but co-evolve with, everyday user practices. Such systems have a politics of visibility that is consequential for content creators and for society (Rieder, Matamoros-Fernandez, Coromina, 2018). Ever-present, highly contested and yet apparently inscrutable, recommender systems are objects of mystique: they are popularly conceptualised (and sometimes self-represented) as black boxes (Pasquale, 2015), prompting calls for both increased platform transparency and public data literacy.

Vernacular data literacies are an important element of algorithmic platform cultures. Content creators and ordinary users engage in social learning as they attempt to understand, negotiate, and manipulate these systems, collectively building "algorithmic imaginaries" in the process (Bucher, 2017). These knowledge practices are characterised by algorithmic gossip: "communally and socially informed knowledge" (Bishop, 2019, p. 2590) that draws on and accumulates vernacular algorithmic lore, "a mix of data-informed assumptions that are weaved into a subjective narrative" (Bishop, 2020, p. 1). User tactics based on these knowledge practices in turn reshape the algorithms and even policies of platforms, so that platforms and their cultures of use shape each other iteratively over time (see for example Bucher, 2018).

Our paper focuses on TikTok, a principal feature of which is its algorithmically curated default home 'page' - the 'For You Page' (FYP). The FYP presents a personalised feed that refreshes each time a user opens TikTok and is dynamically modulated based on their input (Kaye et al., 2020; TikTok, 2020). The recommender system that drives the FYP is based on a discrete product developed by parent company ByteDance and deployed in a number of products prior to TikTok (Kaye et al., 2020). When the Trump administration attempted to force a sale or divestment of TikTok with the threat of an outright ban, ByteDance made clear that the algorithm was not up for negotiation: a representative stated, "the car can be sold, but not the engine," (Xin and Qu, 2020, p. 1). Popular creators regularly make videos *about* 'the' TikTok algorithm, speculating on how to reverse shadowbans and exploit the popularity of viral "sounds", while audiences scroll past some videos and hit 'like' on others to 'train the algorithm' (Sung, 2020). The FYP and recommender system underpinning it is therefore arguably at the heart of TikTok and its politics.

The view from JazzTok

This paper draws on semi-structured interviews with TikTok creators (n=23) conducted over Zoom in early 2021, focusing particularly on their perspectives on the TikTok FYP and algorithms. The majority of the participants were jazz musicians, and for the most part not professional social media influencers/entertainers. We draw out four themes from our data.

First, the algorithmic recommender system was cited as being central to the TikTok viewing experience. Interviewees explained that they primarily engaged with content on the FYP, as opposed to the Following Page that displayed content only from followed creators. In their view, this creates a much more algorithmically generated experience than on YouTube or Instagram.

Second, the FYP influenced the content creation experience but to differing degrees. Some admitted they engaged in behaviors to appease the algorithm, such following trends, posting everyday, and experimenting with different hashtag combinations. Others were more resistant to jumping on popular bandwagons, even if it meant lower view counts. **Shout** described the FYP as a "lottery" and **Stacy** described having a "love/hate relationship" with it.

Third, interviewees shared perspectives on the FYP's potential for shadowbans, where their views seemed suppressed but videos had not been removed. **Violet** asserted that it was not the algorithm but hostile users flagging content that was responsible for their suppressed views. In many cases, the view count for content creators spent hours planning and recording would be dwarfed by "random" videos hurriedly recorded and not representative of their best work. Or, as **Adam** dryly remarked, "TikTok hates hard work."

Finally, interviewees described a range of other ways that they *actively* built and deployed their understandings of the FYP through independent research and communal folklore. For example, **Bri** would send video links to her family members to boost the visibility telling them they "don't have to watch it, it's just helping out with the algorithm."

Conclusion

Despite feeling as though they lacked agency in relation to the TikTok algorithm, these creators were engaging in the development of “algorithmic lore” (Bishop, 2020), theorising and actively experimenting with the platform’s recommender system. Almost all of them disavowed any aspirations to become professional TikTokers - **Ben** found the notion to be “laughable” - but, as musicians, they were still interested in reaching audiences; and to be connected with creators whose content matched their own interests; in doing so, their practices are contributing to a shaping and reshaping of the platform’s culture.

While much of the extant literature about creators’ engagements with platform algorithms centres around professional social media influencers, the findings indicate that algorithmic logics of attention are becoming deeply embedded in the vernacular knowledge practices of creators and participants beyond this group. While this tendency may be realised most sharply in and around TikTok, it may be a starting point for algorithmic awareness and data literacy programs more broadly.

References

- Bishop, S. (2020). Algorithmic Experts: Selling Algorithmic Lore on YouTube. *Social Media + Society*, 6(1). <https://doi.org/10.1177/2056305119897323>
- Bishop, S. (2019). Managing visibility on YouTube through algorithmic gossip. *New Media and Society*. Online First. <https://doi.org/10.1177/1461444819854731>
- Bucher, T. (2018). Cleavage Control: Three stories about algorithmic culture and power in the case of the YouTube ‘Reply Girls’. In Z. Papacharissi (Ed.), *A Networked Self and Platforms, Stories, Connections* (pp. 125-143). New York: Routledge.
- Bucher, T. (2017). The algorithmic imaginary: Exploring the ordinary affects of Facebook algorithms. *Information, Communication & Society*, 20(1), 30–44. <https://doi.org/10.1080/1369118X.2016.1154086>
- Gillespie, T. (2014). The Relevance of Algorithms. In T. Gillespie, P. J. Boczkowski, & K. A. Foot (Eds.), *Media Technologies: Essays on communication, materiality, and society* (pp. 167–194). Cambridge, MA: MIT Press.
- Kaye, D. B. V., Chen, X., & Zeng, J. (2020). The co-evolution of two Chinese mobile short video apps: Parallel platformization of Douyin and TikTok. *Mobile Media & Communication*, Online First. <https://doi.org/10.1177/2050157920952120>
- Rieder, B., Matamoros-Fernández, A., & Coromina, Ò. (2018). From ranking algorithms to ‘ranking cultures’: Investigating the modulation of visibility in YouTube search results. *Convergence*, 24(1), 50–68. <https://doi.org/10.1177/1354856517736982>

- Seaver, N. (2017). Algorithms as culture: Some tactics for the ethnography of algorithmic systems. *Big Data & Society*.
<https://doi.org/10.1177/2053951717738104>
- Sung, M. (2020, January 14). A guide to using TikTok's algorithm to watch videos you actually like. *Mashable*. Retrieved from: <https://mashable.com/article/tiktok-algorithm-watch-what-you-actually-like/>
- Striphas, T. (2015). Algorithmic culture. *European Journal of Cultural Studies*, 18(4–5), 395–412. <https://doi.org/10.1177/1367549415577392>
- TikTok. (2020, June 19). How TikTok recommends videos #ForYou. *TikTok Newsroom*. Retrieved from: <https://newsroom.tiktok.com/en-us/how-tiktok-recommends-videos-for-you>
- Xin, X. & Qu, T. (2020, September 13). TikTok's algorithm not for sale, ByteDance tells US. *South China Morning Post*. Retrieved from: <https://www.scmp.com/economy/china-economy/article/3101362/tiktoks-algorithm-not-sale-bytedance-tells-us-source>

DEEPPAKES AND VISUAL DATA LITERACY

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As a new form of machine vision and automated image manipulation, synthetic media, or deepfakes, have begun to change the landscape of visual literacy. They threaten harms through image-based abuse (Winter and Salter 2019) and trouble verification processes for journalists and automated platform moderation systems with a further erosion of truth in online information. Existing scholarship and popular responses push for a combination of technical, regulatory, and educational forms of redress to reduce the risk associated with deepfakes (e.g., Karnouskos 2020). However, there is little to guide regulation or suggest how education and literacy can help.

While deepfakes can create spectacular social media events, they also exemplify the everyday activities and knowledge building that shape AI applications. They are becoming an ordinary part of our everyday visual data cultures. This paper develops an approach to AI and data literacies (McCosker 2017) that addresses the 'cultures of learning' – both machinic and social – that circumscribe the automated media production associated with deepfakes. Analyzing communities of practice on GitHub and YouTube, I focus on deepfake practices that involve 'learning with' machine learning techniques and mobilizing and manipulation visual datasets to generate new media content.

Background

Deepfakes describe various forms of synthetic media but primarily refer to the convincing replacement of faces and voice in digital videos. This is made possible by developments in deep learning systems and the availability of extensive video datasets used to *train* generative learning models and produce synthesized outputs. The problems of accountability with deepfakes stem from their underlying technology. They apply convolutional neural networks (CNNs) and generative adversarial networks (GANs) and similar techniques for automating image classification and transformation (Goodfellow et al. 2014). The outputs can be notoriously difficult for recognition systems to identify, and increasingly challenging for people to see as 'fake'.

Because deepfakes emerged through the cultural milieu of communities of practice on Reddit, as well as porn sharing platforms such as Pornhub, they were embedded from the beginning within the 'macro context of gender inequality' (Winter and Salter 2019). It has also been their perceived threat to democracy through political deception, and their impact on trust in media institutions more broadly that has gained attention (Chesney and Citron 2019).

While literacy and education are seen as mitigating responses (Karnouskos 2020), popular concepts of literacy place the onus on individual social media users, or journalists, to identify and dismiss the truth claims of synthetic media. In major reports on the imminent threat of deepfakes, literacy is delegated to the humans who confront or consume them in a 'behaviour change' model that is suggestive but says nothing about how (e.g., Smith and Mansted 2020). These approaches misunderstand the situated, cultural, collective, and increasingly technical nature of literacy deepfakes and other generative machine vision techniques exemplify.

Methods

I draw case studies from 791 GitHub repositories available through a search of 'deepfake' as of October 2020. Taking into account the known gender disparity, bias and discrimination on GitHub (Winter and Salter 2019), the analysis examines code purpose, the critical or ethical 'stance' taken in README.md instructional content, and the number of stars as an indicator of attention within the community. Alongside cases of select GitHub repositories, I examine a selection of 14 popular YouTube developer and AI education channels and their tutorial videos on deepfakes, drawn from the top 50 deepfake videos (or videos about deepfakes) by number of views during October 2020.

'tl;dr: training data + trial and error': Towards a data literacies, social learning agenda

The quote above is from the Deepfake/FaceSwap repository's README in a section 'About machine learning'. The section contains two explainer videos in an attempt to respond to the questions: 'How does a computer know how to recognize/shape faces? How does machine learning work? What is a neural network?' The cute, ironic humor points to the new kind of computational and data literacies needed for working with deepfakes and AI-assisted image manipulation. Three insights can be drawn from the analysis presented in this paper, supporting the goal of using these technocultural

contexts to enhance the socialization of AI and build better spaces for learning with AI systems and techniques.

First, code-sharing and developer communities help shape the dimensions through which AI tech and the data that underpins it is accessed and operationalized. The cases discussed cover both simple applications and projects seeking to cultivate critical data AI mindset (but rarely about the datasets on which the systems are trained or the outputs are constructed).

They are sometimes uncritically generative of synthesized outputs, and sometimes disruptive, protective or security oriented. The supporting materials, academic papers, code-sets and video explainers can be inclusive or exclusive but not always as expected. Those working to produce detectors or disruptors often use highly specialized knowledge and language. Developer ed influencers are driven by a desire for reach and influence in the community, but sometimes work to individualize activity, sometimes make it collective.

Second, even the GitHub repositories and YouTube tutorials set purely to apply deepfake code and algorithms take an ethical stance of sorts, but rarely in relation to the datasets and the treatment of visual data. Some try to establish ethical or critical practice, but most stop short of interrogating the (potential) outputs as part of their technical work. Third, the contexts and situations that shape and are shaped by the public development of AI and data literacies through collective practices are dynamic, changing and most importantly changeable.

Conclusions

We need to move beyond and better understand the limitations of the 'literacy as awareness' approach to addressing new applications of AI as they affect media and communication practice. Similarly, 'critical literacy' cannot simply equate with skepticism, mistrust or doubt – as danah boyd (2018) has argued – of the digital environments through which synthetic media and deepfakes circulate. New AI and data literacies that involve 'learning with' deepfakes and the visual datasets that power AI models can promote practices that are more open, collective and accountable. This is to say we need more ground-up development and discussion of AI applications. In the processes of building and applying AI to new media production, there are opportunities to embed greater reflexivity around the consequences of manipulating visual datasets to create new outputs, as practical steps for learning more ethically, and collectively *with* AI.

References

Chesney, R., and Citron, D. (2019). Deepfakes and the new disinformation war: The coming age of post-truth geopolitics. *Foreign Affairs*, 98, 147.

boyd, d. (2018). You think you want media literacy... do you? *Medium*, 10 March. Available from: <https://points.datasociety.net/you-think-you-want-media-literacy-do-you-7cad6af18ec2>.

Goodfellow, I., Pouget-Abadie, J., Mirza, M., Xu, B., Warde-Farley, D., Ozair, S., et al., and Bengio, Y. (2014). Generative adversarial nets, *Proceedings in Advances in Neural Information Processing Systems 27 (NIPS 2014)*, 2672-2680.

Karnouskos, S. (2020). Artificial intelligence in digital media: The era of deepfakes. *IEEE Transactions on Technology and Society*.

McCosker, A. (2017). Data literacies for the postdemographic social media self. *First Monday*, 22(10), <https://journals.uic.edu/ojs/index.php/fm/article/view/7307>.

Smith, H. and Mansted, K. (2020). *Weaponised deep fakes: National security and democracy*, Australian Strategic Policy Institute. Available From: <https://www.aspi.org.au/report/weaponised-deep-fakes>.

Winter, R., and Salter, A. (2019). DeepFakes: uncovering hardcore open source on GitHub. *Porn Studies*, 1-16, <https://doi.org/10.1080/23268743.2019.1642794>.

DATA VISUALISATION AND THE GENDERED PLEASURES OF SEXTech

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Introduction

As Robards and colleagues (2020) have demonstrated, digital platforms and devices have supported and promoted a proliferation of everyday gendered practices of intimate datafication and self-tracking. The emerging field of sextech has become a space where intimate data are both cultivated and contested. The term has become a catch-all, variously applied to dating apps, sexual entertainment platforms and services (such as OnlyFans), and networked sex toys.

Sextech is emerging as a space in which everyday understandings of 'intimacy' and 'privacy' are contested as both tech users and commentators respond to the potential for both data brokerage and data leaks (Sundén 2020). This paper does not focus on the 'leakiness' of intimate data, but instead reflects on the diverse ways that everyday sexual experience is constructed as data within sextech industry press and marketing content. It offers a brief comparative case study of two sextech devices – the Lioness and the Lelo F1. It contextualizes these contemporary representations of datafication in relation to pre-digital practices of data visualisation that underpin contemporary understandings of normative sexual pleasure.

Sextech meets femtech

The field of sextech overlaps with femtech, a term that is applied both to sex toys and apps and platforms primarily targeting cis women, including apps supporting reproductive and sexual health (for example period trackers). While datafied sex toys (such as butt plugs, vibrators and masturbation sleeves) fall under both the femtech and sextech umbrellas, they are framed quite differently in these intersecting domains. Toys primarily directed to cis men are marketed as opportunities to playfully experiment with self-tracking in a leisure context. In contrast, femtech-oriented sex toys are more likely to be presented as enhancing 'wellbeing'.

In these contexts, marketing materials represent data collection and self-tracking is less an opportunity for play, and more akin to a health regime. Indeed, the Femtech Collective, a networking association for entrepreneurs in the field, describes femtech as "a category of software, diagnostics, products, and services that include...fertility solutions, period-tracking apps, pregnancy and nursing care, women's sexual wellness, and reproductive system health care" (Femtech Collective 2021).

The Lioness vibrator, which contains a sensor that records vaginal contractions and visualizes them via an associated app and dashboard, is an exemplar of the sextech/femtech crossover. The Lioness website features images of the toy connected (via Bluetooth) to a phone displaying a 'Session Analysis', or waveform graph representing vaginal contractions. Across the site, the device is promoted as a tool that facilitates self-knowledge, wellbeing and communication in relationships. Lioness users are explicitly invited to contribute their data to sexuality researchers to build collective knowledge. The Lioness research portal invites users to 'do it for science', by donating their data to researchers, and participating in surveys and other studies.

In contrast, the Lelo F1 masturbation sleeve is promoted to cis men as a means of engaging with data for the sole purpose of optimizing solo sexual pleasure. Users are offered an interface that visually evokes the dashboard of a high-performance car - measuring thrusts, speed, pressure and temperature. Unlike Lioness users, F1 owners are not invited to donate their data for the common good, but are offered a 'developers' kit' that allows them to customize the sleeve's sensations and track "progress - and prowess" (Miss Ruby 2021).

Visualising sex through data

Normative understandings of gender and sexuality are almost cartoonishly manifested within the marketing materials for these two sex tech devices. The Lioness offers data visualization and tracking as therapeutic tools and pathways to self-empowerment, and a means of contributing to a common good. The F1's design and features promise mastery, control, and play with 'big boys toys'. These marketing approaches undoubtedly build on contemporary understandings of sexual pleasure that underpin the rise of the popular feminist sex-toy market (as documented by Comella, 2017); in which masturbation is represented as a source of self-care and wellbeing. But they also resonate with historical trajectories within the fields of sex research and sexology that sought to render gender and sexuality both visible and quantifiable in normatively reductive terms.

For example, Masters and Johnson's research into human sexuality documented sex workers masturbating within laboratory settings, using cinematic practices to produce their theoretical model and graphic visualization of the 'human sexual response cycle'. This process and outcome has been extensively contested – both by fellow sex researchers, and by social scientists (for example see Teifer, 1991). Despite these critiques, Masters and Johnson's graphic visualization of their 'human sexual response cycle' model as a linear graph (with peaks and troughs labeled 'excitement', 'plateau', 'orgasm' and 'resolution') has been widely circulated, and was adopted as a popular prescription/blueprint for 'successful' sexual experience in the late twentieth century (Jagose 2013).

Conclusion

This brief history suggests that the promises implicit in sextech marketing - that datafication is a desired means of making 'private' internal sensations and processes visible – builds on familiar, well-established understandings of how sex and gender can and should operate in everyday life.

This does not mean that sextech does not offer novel sources of stimulation. The Lioness website features endorsement from users who do not frame the toy's capacity to visualize their sexual sensations simply as a source of feedback for assessing 'wellbeing', but as a site of pleasure in and of itself. For example, a five-star review/testimonial from 'Shona B' states: "The very first time I used the Lioness, I was blown away. Absolutely loved it! I am big on data, so I loved to see and track my orgasms. It makes me excited to have a "session". I am not just doing it to fall asleep anymore."

As queer and feminist scholars have argued, contemporary understandings of normative sexuality and gender shape - and are shaped by - scientific and popular practices of visual representation. This paper offers a preliminary exploration of the ways that sextech and femtech marketers represent gendered pleasure and/as data. It suggests that the mapping of physiological activities and responses (such as penile thrusts or vaginal contractions) as visual data is not an imposition of digital culture on an otherwise 'natural' experience of human sexuality. On the contrary, it is a continuation of established Western discourses that seek to classify – and visualize - bodily pleasure and sexual sensation according to gendered norms.

References

Comella, L., (2017). *Vibrator nation: How feminist sex-toy stores changed the business of pleasure*. Durham: Duke University Press

Femtech Collective, (2021). *About Us*. <https://femtechcollective.com/about-us>. accessed April 12, 2021

Miss Ruby, (2020). *Review: LELO F1s Developer's Kit Red Penis Masturbator* <https://missrubyreviews.com/review-lelo-f1s-developers-kit-red-penis-masturbator/> accessed April 12, 2021

Lelo, (2021). *F1s™ Developer's Kit Red*. <https://www.lelo.com/f1s-developers-kit-red>. accessed April 12, 2021

Lioness, (2021). *Lioness Homepage* <https://lioness.io/products/the-lioness-vibrator?variant=43704398918> accessed April 12, 2021

Robards, B., Lyall, B. and Moran, C., (2020). Confessional data selfies and intimate digital traces. *New Media & Society*, p.1461444820934032.

Sundén, J., (2020). Play, secrecy and consent: Theorizing privacy breaches and sensitive data in the world of networked sex toys. *Sexualities*, p.1363460720957578.

Jagose, A., (2013). *Orgasmology*. Durham: Duke University Press.

Tiefer, L. (1991). Historical, scientific and feminist criticisms of the “human sexual response cycle model”. *Annual Review of Sex Research*, 2: 1–23.

USB PORTABLE FLASH DRIVES AND EVERYDAY DATA CULTURE

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Introduction

In this paper, we seek to develop a deeper understanding of everyday data cultures as they pertain to personal information management practices. In examining everyday interactions with these devices, we consider how our participants keep (store) and organize (arrange) information on these devices. We also examine device and data sharing, and cross-tool information management, specifically the nexus between portable hard drive/USB use and cloud storage. The argument of this article is that portable hard drives and USBs, due to their miniaturization, ease of portability, affordability and storage capacity, add considerable complexity to established understandings of personal information management practices, which have historically tended to focus on desktop and laptop computing not portable storage devices.

Theoretical Framework: Everyday Data Cultures, and Personal Information Management

A key aim of this research is to seek to understand the richness, messiness and largely idiosyncratic character of individual’s everyday data practices involving portable hard drives and USB portable flash drives.

Within critical data studies, there is the view that there is much we still don't know about information as it manifests as data about individuals and as generated by individuals, and thus what is required is much "greater understanding of everyday living with data" (Kennedy, 2018, 18) at the individual level. This is a view shared by Jean Burgess (2017), who develops the concept of vernacular or everyday data cultures as a productive way of framing and comprehending how individuals live, day-to-day, with data. Everyday data cultures, Burgess (2017) argues, are composed of three distinct (but interacting) aspects. First, "data cultures are ordinary as in everyday – increasingly common and unremarkable, but not bland, banal, or necessarily even benign" (Burgess, 2017). Second, that everyday data cultures serve as "the site of development and contestation among emergent norms, codes, and corrections" (Burgess, 2017), with users developing "workarounds" and exploring unintended or unusual uses for these systems. Third, everyday data cultures are "situated in specific sociotechnical and sociocultural contexts" (Burgess, 2017) – a point emphasized strongly in STS scholarship. Burgess's tripartite conceptualization of everyday data cultures provides a productive frame for the present paper in that it highlights the need for, and value of, paying continued, close attention to everyday, routinized individual practice involving personal information management and portable device use (USBs).

More broadly, there has been renewed critical interest in the importance of files (both paper and digital) as an information resource and in the handling of them – that is, how files are found, kept, and organized – within law, media studies, media anthropology, as well as within human-computer interaction studies and library information science. Indeed, across these last two disciplines, a specific subfield has emerged – Personal Information Management (PIM) – that is dedicated to the study of files, how they are found, kept, and organized, and how these practices might be potentially further streamlined.

Approach

We draw on findings of fourteen in-depth interviews with users of portable hard drives and USB portable flash drives to examine participants' reflections on the everyday management of personal information on their devices.

The interviews explored the practices of participants who possess portable storage devices, and why these devices continue to be of practical use. Participants were asked to discuss their practices of portable storage device use around the following topics: the material form of their device, including its storage capacity and personalisation practices associated with their use of it; how the device was acquired; how the device is accessed and by whom; how the device is transported; why the device is preferred over other means of data storage and transferal; practices of use; ways of thinking about the device, including personal significance of the device; and, ways of retaining and ordering data on their devices.

A key aspect of the interview process was "show and tell" (Chamberlain and Lyons, 2016). Participants were asked to bring their USB portable flash drives to the interviews. Having inquired into the type of content typically stored on their device and methods of ordering that data, we invited participants to access their portable hard drive, using a

laptop provided, and to show us how data is ordered and stored on the devices they had with them, and to tell us about these devices and data. This presented an opportunity to explore discrepancies between people's description of their practices, and the evidence of practice coded onto the devices. Images of the devices, as well as screenshots of the data ordering file structures, were analysed together with the interview transcripts.

Findings & Conclusion

We framed our analysis of USB use through a focus on individual practices and everyday data cultures. Applying Burgess's conceptualization of everyday data cultures broadens our understanding of PIM by highlighting the need for and value of sustained attention to everyday, routinized individual practices of personal information management and portable device use (USBs). In adopting this approach in our study we made the following insights.

First, paying attention to individual practice revealed the complexity and multifaceted nature of keeping – the types of data files kept, the reasons for keeping them, and how this content was stored – as well as some of the more idiosyncratic individual methods and logics behind these processes. For example, with respect to how content was stored on USBs, one participant performed particularly creative forms of steganography (hiding information in plain sight) through the use of quirky file names.

Second, being attentive to individuals' everyday data practices uncovered how, for some in our study, decisions over what and how information was organized was a rather fraught process and subject to many boundary disputes concerning what goes where and why. These boundary disputes, we found, were also exacerbated by the proliferation of USB devices and their use across different contexts (where, for instance, the same USBs are used for work and for home).

Third, that USBs are shared widely, both within and across personal and work contexts. Not only does this sharing suggest the need to further qualify the "personal" in personal information management, but it also complicates established understandings of information keeping and organization, and retrieval.

Fourth, and with respect to the interactions between USBs and cloud storage, we found the two to be largely complementary technologies. While there has been speculation that the rise of cloud services would lead to the decline and disappearance of USBs, their portability, storage capacity, affordability, and lack of reliance on network connectivity in order to work mean that they have enduring appeal and utility. Nevertheless, USBs and cloud storage are both part of an increasingly complex ecology of everyday data cultures. And, for participants in our study, the arrival of cloud storage only served to contribute additional layers of complexity to the data handling stages and decision-making processes described in this article and the PIM literature.

Given these insights, future scholarship might productively draw from established work within mobile communication (and from elsewhere) that frames and conceives of

portable devices as both highly personalized technologies and as subject to distribution and sharing.

References

Burgess J (2017) Hook-up apps' vernacular data cultures. Unpublished paper presented at the Social Life of Data symposium, April, RMIT University, Melbourne.

Chamberlain K & Lyons A (2016) Using material objects and artifacts in research. In: Smith B and Sparkes AC (eds) *Routledge Handbook of Qualitative Research in Sport and Exercise*. London: Sage, pp. 164-177.

Credence Research (2019) USB 3.0 Flash Drives Market, Share, Trend, Analysis And Forecast To 2027. CredenceResearch.com.

<https://www.credenceresearch.com/report/usb-3-0-flash-drives-market>

Kennedy H (2018) Living with data: Aligning data studies and data activism through a focus on everyday experiences of datafication. *Krisis: Journal for Contemporary Philosophy* 1: 18-30.