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Sexual Deepfakes and Image-Based Sexual Abuse: Victim-Survivor Experiences and Embodied Harms

Victoria Rousay

A Thesis in the Field of Anthropology

for the Degree of Master of Liberal Arts in Extension Studies

Harvard University

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Abstract

The democratization of deepfake technology over the last six years has resulted in an unprecedented emergence and growth of a new type of image-based sexual abuse: sexual deepfakes. Sexual deepfakes are a pernicious form of sexual violence that profoundly impacts the physical, emotional, and social aspects of victims' lives. While academic research has addressed the lived experiences of victim-survivors of other forms of image-based sexual abuse, because of their relative recency, sexual deepfakes are an under-researched phenomenon, leaving victims with little recourse or recognition of their experience as a legitimate form of sexual violence. The purpose of this phenomenological study is to explore the lived experiences of victim-survivors of image-based sexual abuse, with a specific focus on exploring the lived experiences of victim-survivors of sexual deepfakes.

I chose to incorporate a purposeful mixed sampling, combining three different sampling techniques that were most consistent with the study's research purpose: voluntary homogeneous sampling, criterion sampling, and confirming case sampling. Each sampling technique corresponded with one of the study's three phases, screening survey, semi-structured interviews, and amplifying emerging themes through confirmed cases of lived experience experts (LEE). LEE cases were selected to amplify the voices of the victim-survivors interviewed in the current study, four of five of whom revealed participation in semi-structured interviews to be the first time they had spoken out about their experience.

Recruitment occurred from August 2022 until November 2022, in which a total of 58 individuals were invited to participate in semi-structured interviews; 63% (37) of participants reported experiences of sexual deepfake abuse, all of whom reported that their sexual deepfakes had been monetized online.

One-on-one (N=5) semi-structured interviews with victim-survivors of image-based sexual abuse, including experiences of sexual deepfake abuse, were conducted between October 2022 and November 2022. Semi-structured interviews were analyzed using interpretative phenomenological analysis (IPA), in which preliminary coding of emerging themes provided a foundation for selecting a total of seven public cases from sexual deepfake lived experience experts (LEE). Findings from this study suggest that sexual deepfake abuse is a severely gendered phenomenon in which heteronormativity has become the template for enacting sexual violence – irrespective of the victim's sex, gender identity, or sexual orientation. Additionally, this study found sexual deepfake abuse to be particularly harmful because of the fluidity and co-occurrence of online-offline experiences of abuse, resulting in endless reverberations of abuse in which every aspect of the victim's life is permanently disrupted.

Dedication

I dedicate this thesis to my parents. Thank you for your unwavering support, guidance, and encouragement throughout this process. Words cannot express how grateful I am for the opportunity to continue my education.

To my dearest friends and family who put up with me missing almost every event because “my thesis is due soon…” Your support and patience did not go unnoticed. Calvin, thank you for being a constant listener and supporter throughout my endeavors. It meant the world to me.

To all my wonderful colleagues at NCOSE. I am thankful for the guidance and wisdom that each one of you has shared with me.

To my sweetest girls Brinley and Nova – I couldn’t have done this without you!

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Chapter I.

Introduction

"Imagine a world where any woman could end up in a porn film. Without their consent…This is digital trafficking. This is a sex crime."[1]

In her documentary, *Deepfake Porn: Could You Be Next?* Jess Davies said these words to describe the real and present dangers presented by AI technology sophisticated enough to submit images and video so life-like that any woman could easily *become pornography*. While this technology realistically allows for *anyone* to non-consensually become pornography, this is not the reality. This is evident through the democratization of synthetic media technology[2] and the persistent unraveling of targets from influential and celebrity women to women at large.[3] The threat of deepfake technology is an immediate and tangible danger, the target and purpose made exceedingly clear – women and pornography.

Over the last six years, deepfakes production and circulation have rapidly expanded in technological sophistication and quantity. Preliminary deepfake and synthetic media researchers frequently highlighted the unprecedented speed and scope at

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[1] *Deepfake Porn: Could You Be Next?*, Documentary (BBC Three, 2022), https://www.bbc.com/mediacentre/proginfo/2022/42/deepfake-porn-could-you-be-next.
[2] Public-Private Analysis Exchange Program, "Increasing Threat of Deepfake Identities," 2021, https://www.dhs.gov/sites/default/files/publications/increasing_threats_of_deepfake_identities_0.pdf.
[3] Henry Ajder, Giorgio Patrini, and Francesco Cavalli, "Automating Image Abuse: Deepfake Bots on Telegram," *Sensity*, October 2020; Asher Flynn et al., "Deepfakes and Digitally Altered Imagery Abuse: A Cross-Country Exploration of an Emerging Form of Image-Based Sexual Abuse," *The British Journal of Criminology*, December 3, 2021, azab111, https://doi.org/10.1093/bjc/azab111; Britt Paris and Joan Donovan, "Deepfakes and Cheap Fakes," September 18, 2019; Henry Ajder et al., "The State of Deepfakes: Landscape, Threats, and Impact," *Sensity*, September 2019.

which deepfake technology is developing, the constantly shifting landscape, and the "rapidly materializing threats resulting in increased scale and impact"[4] that would soon become the future of the deepfake landscape.[5] Unfortunately, that future is now. Today, it takes *less* time to brew a cup of coffee in a Keurig than it does to create realistic deepfake content, < 60 seconds.[6]

The consistent failure to address or acknowledge systemic gender power inequities influences the proliferation of this type of abuse is disturbing. Sexual deepfake victim-survivors have been addressing the gendered harms of deepfake technology since its inception, but only recently have they been heard. The experiences of sexual deepfake survivors are part of a historical trend that repeats itself with the emergence of each new form of sexual violence. This is reminiscent of the dismissal victim-survivors of other forms of traditional sexual violence, such as obscene phone calls, sexual harassment, catcalling, and marital rape.[7] More recently, this has been seen with forms of image-based sexual abuse and technology-facilitated sexual violence such as non-consensual dissemination of sexually explicit media (colloquially known as 'revenge pornography'),

[4] Ajder et al., "The State of Deepfakes: Landscape, Threats, and Impact."
[5] Ajder, Patrini, and Cavalli, "Automating Image Abuse: Deepfake Bots on Telegram"; Paris and Donovan, "Deepfakes and Cheap Fakes"; Ajder et al., "The State of Deepfakes: Landscape, Threats, and Impact."
[6] Katherine Jongsma and Patti Timmons Fritz, "The Role of Pornography Use in Intimate Partner Violence in Different-Sex Couples: A Prospective Longitudinal Study," *Journal of Interpersonal Violence*, November 16, 2021, 088626052110551, https://doi.org/10.1177/08862605211055145; Ajder et al., "The State of Deepfakes: Landscape, Threats, and Impact," September 2019; *Deepfake Porn: Could You Be Next?*; Peter Johnson, "Pornography Drives Technology: Why Not to Censor the Internet," *Federal Communications Law Journal*, 8, 49, no. 1 (November 1996), https://www.repository.law.indiana.edu/fclj/vol49/iss1/8.
[7] Liz Kelly, "The Continuum of Sexual Violence," in *Women, Violence and Social Control*, ed. Jalna Hanmer and Mary Maynard (London: Palgrave Macmillan UK, 1987), 46–60, https://doi.org/10.1007/978-1-349-18592-4_4; Liz Kelly, *Surviving Sexual Violence* (Minneapolis: University of Minnesota Press, 1988).

cyber-flashing, doxxing, and online sexual harassment.[8] While academic literature research has addressed the phenomenon of sexual deepfakes, studies have been limited primarily to quantitative research studies estimating the proliferation and context of the deepfake landscape. To the best of my knowledge, only one other study has addressed the lived experiences of victim-survivors of sexual deepfakes.[9] The lived experiences of victim-survivors of sexual deepfakes are an understudied phenomenon I address in this study.

The Triad of Sexual Deepfakes: Women, Pornography, and Technology

The general application of deepfake technology is relatively recent. Its first known appearance occurred in 2017 when an anonymous Reddit user by the name of u/deepfakes uploaded a self-titled video in which they had superimposed the faces of female celebrities onto the bodies of women in pornographic media.[10] The first set of videos, initially coined "deepfake pornography," amassed millions of views within the first month of their reveal, required *hundreds* of Google images, stock photos, and YouTube videos of the actress to superimpose her into a pre-existing incest-themed

[8] Clare McGlynn et al., "'It's Torture for the Soul': The Harms of Image-Based Sexual Abuse," *Social & Legal Studies* 30, no. 4 (August 1, 2021): 541–62, https://doi.org/10.1177/0964663920947791; Clare McGlynn, Erika Rackley, and Ruth Houghton, "Beyond 'Revenge Porn': The Continuum of Image-Based Sexual Abuse," *Feminist Legal Studies* 25, no. 1 (April 2017): 25–46, https://doi.org/10.1007/s10691-017-9343-2; Nicola Henry, Asher Flynn, and Anastasia Powell, "Technology-Facilitated Domestic and Sexual Violence: A Review," *Violence Against Women* 26, no. 15–16 (December 2020): 1828–54, https://doi.org/10.1177/1077801219875821; Erika Rackley et al., "Seeking Justice and Redress for Victim-Survivors of Image-Based Sexual Abuse," *Feminist Legal Studies* 29, no. 3 (November 2021): 293–322, https://doi.org/10.1007/s10691-021-09460-8; Anastasia Powell and Nicola Henry, "Technology-Facilitated Sexual Violence Victimization: Results From an Online Survey of Australian Adults," *Journal of Interpersonal Violence* 34, no. 17 (September 2019): 3637–65, https://doi.org/10.1177/0886260516672055.
[9] Flynn et al., "Deepfakes and Digitally Altered Imagery Abuse."
[10] Ajder, Patrini, and Cavalli, "Automating Image Abuse: Deepfake Bots on Telegram," October 2020; Britt Paris and Joan Donovan, "Deepfakes and Cheap Fakes," September 18, 2019; Ajder et al., "The State of Deepfakes: Landscape, Threats, and Impact," September 2019.

pornographic video.[11] According to AI expert and researcher Alex Champandard, one of the most frightening aspects was that u/deepfakes was not a deepfake expert but merely an 'interested programmer' who could create relatively realistic deepfakes with only a few hundred images in a matter of days. In 2017, this was a significant feat, considering that even the most sophisticated technologies required multiple hours to create content of similar realism:

> Everyone needs to know just how easy it is to fake images and videos, to the point where we won't be able to distinguish forgeries in a few months from now. Of course, this was possible for a long time, but it would have taken a lot of resources and professionals in visual effects to pull this off. Now it can be done by a single programmer with recent computer hardware.[12]

In the days and weeks following the initial sexual deepfake videos, u/deepfakes unleashed deepfake pornography videos of Taylor Swift, Maisie Williams, Kristen Bell, Scarlet Johanssen, Aubrey Plaza, and many other famous or influential women setting the precedent of normalization of this type of abuse and exploitation of women that only escalated in the following years.[13]

Targeted online violence against women has grown exponentially with the ubiquity of digital and Internet communication technologies such as smartphones, social networking sites, blogs, video-uploading websites, and virtual worlds in contemporary life.[14] Information and communication technologies (ICTs) possess unique aspects in

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[11] Paris and Donovan, "Deepfakes and Cheap Fakes," September 18, 2019; Samantha Cole, "AI-Assisted Fake Porn Is Here and We're All Fucked," *Motherboard - Vice*, December 11, 2017, https://motherboard.vice.com/en_us/article/gydydm/gal-gadotfake-ai-porn.
[12] Samantha Cole, "AI-Assisted Fake Porn Is Here and We're All Fucked," *Motherboard - Vice*, December 11, 2017, https://motherboard.vice.com/en_us/article/gydydm/gal-gadotfake-ai-porn.
[13] Cole.
[14] Ajder, Patrini, and Cavalli, "Automating Image Abuse: Deepfake Bots on Telegram," October 2020; Samantha Bates, "Revenge Porn and Mental Health: A Qualitative Analysis of the Mental Health Effects of Revenge Porn on Female Survivors," *Feminist Criminology* 12, no. 1 (January 2017): 22–42,

which potential impacts are significantly magnified through the collapse of spatial-temporal barriers, multiple connectivities, third victimization, and the anonymity and plasticity of digital identities.[15] To put it plainly, the Internet is a hunting ground for abuse – hosting millions of potential targets/victims, an unlimited number of motivations for perpetrators (referring to both the anonymity provided by the Internet and the significant potential reward at the expense of minimal effort), the relative absence of capable guardianship, and polyvictimization.[16] While women have historically been subjected to disproportionate levels of sexual violence, sexual double standards, victim-blaming, and 'slut-shaming,' the temporality and scope of Internet communication technologies (ICTs), such as through deepfake and synthetic media technologies make it a unique environment through reverberations of abuse.[17]

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https://doi.org/10.1177/1557085116654565; Alexa Dodge, "Digitizing Rape Culture: Online Sexual Violence and the Power of the Digital Photograph," *Crime, Media, Culture: An International Journal* 12, no. 1 (April 2016): 65–82, https://doi.org/10.1177/1741659015601173; Flynn et al., "Deepfakes and Digitally Altered Imagery Abuse"; Nicola Henry and Anastasia Powell, "Embodied Harms: Gender, Shame, and Technology-Facilitated Sexual Violence," *Violence Against Women* 21, no. 6 (June 1, 2015): 758–79, https://doi.org/10.1177/1077801215576581; Julia Chan, "Becoming Pornography: White Women, Voyeuristic Surveillance, and Image-Based Sexual Abuse" (Thesis, Kingston, Ontario, Canada, Queen's University, 2020); Laura McVey, Lauren Gurrieri, and Meagan Tyler, "The Structural Oppression of Women by Markets: The Continuum of Sexual Violence and the Online Pornography Market," *Journal of Marketing Management* 37, no. 1–2 (January 2, 2021): 40–67, https://doi.org/10.1080/0267257X.2020.1798714.

[15] Majid Yar, "The Novelty of 'Cybercrime': An Assessment in Light of Routine Activity Theory," *European Journal of Criminology* 2, no. 4 (October 1, 2005): 407–27, https://doi.org/10.1177/147737080556056.

[16] Henry and Powell, "Embodied Harms"; Yar, "The Novelty of 'Cybercrime': An Assessment in Light of Routine Activity Theory"; Majid Yar and Jacqueline Drew, "Image-Based Abuse, Non-Consensual Pornography, Revenge Porn: A Study of Criminalization and Crime Prevention in Australia and England & Wales," March 13, 2020, https://doi.org/10.5281/ZENODO.3709306.

[17] Ganaele Langlois and Andrea Slane, "Economies of Reputation: The Case of Revenge Porn," *Communication and Critical/Cultural Studies* 14, no. 2 (April 3, 2017): 120–38, https://doi.org/10.1080/14791420.2016.1273534; Dodge, "Digitizing Rape Culture"; Nicola Henry and Asher Flynn, "Image-Based Sexual Abuse: Online Distribution Channels and Illicit Communities of Support," *Violence Against Women* 25, no. 16 (December 2019): 1932–55, https://doi.org/10.1177/1077801219863881; Henry, Flynn, and Powell, "Technology-Facilitated Domestic and Sexual Violence"; Sophie Maddocks, "'A Deepfake Porn Plot Intended to Silence Me': Exploring Continuities between Pornographic and 'Political' Deep Fakes," *Porn Studies* 7, no. 4 (October 1, 2020): 415–23, https://doi.org/10.1080/23268743.2020.1757499; Britt Paris, "Configuring Fakes: Digitized

Over the last six years, the deepfake landscape has witnessed significant and unprecedented growth in both sophistication and quantity, expanding from niche programmers and developers to widespread societal adoption and normalization,[18] which would not have been possible without deepfake technology's early adoption by the pornography industry.[19] While initial reports and publications directly address issues of consent, these narratives were quickly silenced and hidden by popular media discourses of political disruption and dismantling democracy – despite the years of insurmountable and irrefutable evidence documenting the physical, psychological, and social damage experienced by victims of sexual deepfakes.[20] It wouldn't be another six years after

Bodies, the Politics of Evidence, and Agency," *Social Media + Society* 7, no. 4 (October 1, 2021): 20563051211062920, https://doi.org/10.1177/20563051211062919; Alexa Dodge, "Restorative Responses to the Rhizomatic Harm of Nonconsensual Pornography" (Cham: Springer International Publishing, n.d.), 565–82, https://doi.org/10.1007/978-3-030-83734-1_28; Sidsel Kirstine Harder, "Re-Faced and Pornified—a Visual, Narrative Analysis of Sexual Scripts in Police Cases of Image-Based Abuse," *The British Journal of Criminology*, July 5, 2022, azac051, https://doi.org/10.1093/bjc/azac051.

[18] Ajder, Patrini, and Cavalli, "Automating Image Abuse: Deepfake Bots on Telegram," October 2020; Ajder et al., "The State of Deepfakes: Landscape, Threats, and Impact," September 2019; Paris and Donovan, "Deepfakes and Cheap Fakes," September 18, 2019; Giorgio Patrini, "The State of Deepfakes 2020: Update on Statistics and Trends," *Sensity*, March 2021.

[19] Frederick Lane, *Obscene Profits: Entrepreneurs of Pornography in the Cyber Age* (Routledge, 2001), https://www.routledge.com/Obscene-Profits-Entrepreneurs-of-Pornography-in-the-Cyber-Age/Lane/p/book/9780415931038; Johnson, "Pornography Drives Technology: Why Not to Censor the Internet."

[20] Ajder, Patrini, and Cavalli, "Automating Image Abuse: Deepfake Bots on Telegram," October 2020; Carl Öhman, "Introducing the Pervert's Dilemma: A Contribution to the Critique of Deepfake Pornography," *Ethics and Information Technology* 22, no. 2 (June 2020): 133–40, https://doi.org/10.1007/s10676-019-09522-1; Samantha Bates, "Revenge Porn and Mental Health: A Qualitative Analysis of the Mental Health Effects of Revenge Porn on Female Survivors," *Feminist Criminology* 12, no. 1 (January 2017): 22–42, https://doi.org/10.1177/1557085116654565; Matthew Hall, Jeff Hearn, and Ruth Lewis, "Image-Based Sexual Abuse: Online Gender-Sexual Violations," *Encyclopedia* 3, no. 1 (2023): 327–39, https://doi.org/10.3390/encyclopedia3010020; Kweilin T. Lucas, "Deepfakes and Domestic Violence: Perpetrating Intimate Partner Abuse Using Video Technology," *Victims & Offenders* 17, no. 5 (July 4, 2022): 647–59, https://doi.org/10.1080/15564886.2022.2036656; Ajder et al., "The State of Deepfakes: Landscape, Threats, and Impact," September 2019; Britt Paris, "Configuring Fakes: Digitized Bodies, the Politics of Evidence, and Agency," *Social Media + Society* 7, no. 4 (October 1, 2021): 20563051211062920, https://doi.org/10.1177/20563051211062919; Patrini, "The State of Deepfakes 2020: Update on Statistics and Trends," March 2021.

Champandard's calling for "a very loud and public debate" to finally "put our focus on transforming society to be able to deal with this" would a societal awakening occur.[21]

Problem Statement

Recent years have witnessed a proliferation of preventative initiatives aimed at addressing the non-consensual creation, dissemination, and commodification of sexual deepfakes, colloquially known as "deepfake pornography."[22] Suggested measures of regulation have included new criminal and civil laws, high-level policy initiatives, detection technologies, digital watermarking, and the outright banning of sexual deepfakes on social media websites and online platforms.[23] While the issue of why these initiatives fail is largely complex and multi-faceted, exceeding the scope of the current study, it is worth noting that narrowly focused and singular initiatives, either for prevention or regulation, fail to holistically address the problem, rendering such targeted initiatives insufficient. Because synthetic media technology disrupts a range of interconnected contexts, social, political, and historical, measures of mitigation must address the interconnected web of consequences produced within and between the

[21] Cole, "AI-Assisted Fake Porn Is Here and We're All Fucked."
[22] Henry Ajder et al., "The State of Deepfakes: Landscape, Threats, and Impact," *Sensity*, September 2019; Rob Volkert et al., "Understanding the Illicit Economy for Synthetic Media."
[23] Brian Dolhansky et al., "The Deepfake Detection Challenge (DFDC) Preview Dataset," *ArXiv:1910.08854 [Cs]*, October 23, 2019, http://arxiv.org/abs/1910.08854; Vasileia Karasavva and Aalia Noorbhai, "The Real Threat of Deepfake Pornography: A Review of Canadian Policy," *Cyberpsychology, Behavior and Social Networking* 24, no. 3 (n.d.): 23–209, https://doi.org/10.1089/cyber.2020.0272; Mika Westerlund, "The Emergence of Deepfake Technology: A Review," *Technology Innovation Management Review* 9, no. 11 (January 1, 2019): 39–52, https://doi.org/10.22215/timreview/1282.

various contexts, especially those pertaining to the mutually constitutive relationship between technology and gender.[24]

For these reasons, rather than proposing measures of mitigation, prevention, or regulation, I will explore two main facets: 1. Showing how sexual violence persists and adapts by exploring how traditional sexual violence has been reinvented and amplified through technological developments, specifically through Internet communication technologies (ICTs), through 2. Exploring the lived experiences of victim-survivors of image-based sexual abuse, specifically sexual deepfakes.

Research Questions

The purpose of this qualitative study is to provide an in-depth exploration of image-based sexual abuse victim/survivor experiences and its harms and determine similarities, if any, between experiences of victim-survivors of IBSA, including sexual deepfakes and its existence along the synthetic sexually explicit media spectrum, and victim-survivors of other forms of traditional sexual violence by answering the following questions:

1. Are IBSA and sexual deepfakes forms of gendered sexual violence?

a. Do experiences of IBSA/sexual deepfakes demonstrate propensities to 'gender' by designating distinct roles of masculinity versus femininity?

2. How does IBSA impact the lives of victim-survivors?

[24] Paris, "Configuring Fakes"; Judy Wajcman, *TechnoFeminism* (Cambridge; Malden, MA: Polity, 2004); Judy Wajcman, "Addressing Technological Change: The Challenge to Social Theory," *Current Sociology* 50, no. 3 (May 1, 2002): 347–63, https://doi.org/10.1177/0011392102050003004; Flynn et al., "Deepfakes and Digitally Altered Imagery Abuse"; Karasavva and Noorbhai, "The Real Threat of Deepfake Pornography."

3. How are victim-survivors emotionally, psychologically, and socially impacted by sexual deepfakes?
4. Does “rape culture” negatively impact victim-survivors?

Research Objectives

Through intersectional and technofeminist epistemologies, this study seeks to highlight the human cost of image-based sexual abuse, specifically regarding sexual deepfakes as a collectively qualitatively gendered phenomenon through Interpretative Phenomenological Analysis (IPA). Considering that sexual deepfakes are a relatively new phenomenon, there is little knowledge about this form of sexual violence. Because of these limitations, theoretic conceptualization would be insufficient without understanding the all-encompassing or ‘rhizomatic’ nature of sexual deepfakes in their entirety. Demonstrating sexual deepfakes as rhizomatic will occur throughout the whole of this thesis and will be explicitly addressed at the close of the study.

Contributions

This project has the potential to contribute to several critical areas of study in anthropology, including understandings of how re-traditionalized gender hierarchies and inequalities exist in a digital society, acknowledging the embodied harms in “virtual” sexual violence, raising awareness about victim-survivor experiences of image-based sexual abuse (IBSA) by explicitly addressing its most emergent form, sexual deepfakes. To the best of my knowledge, only one other study has explored the lived experiences of victim-survivors of sexual deepfakes. Presumably, my research would be the second study to explore the lived experiences of victim-survivors of sexual deepfakes globally

and the first study to do so in the United States. As sexual violence increasingly permeates digital spaces, this study has the potential to address uncharted areas of research, bridging the gap between the physical and the virtual and expanding current conceptualizations of sexual violence.

The remainder of this chapter is divided into two sections. The first section will briefly touch on the typology and function of deepfake technology. The second section will serve as a continuation of the first by conceptualizing synthetic sexually explicit media (SSEM) as a spectrum as well as setting up the framework for situating image-based sexual abuse (IBSA), sexual deepfakes, and SSEM along the larger continuum of sexual violence.

Synthetic Sexually Explicit Media (SSEM)

A Brief Introduction to Deepfake Technology

The term 'deepfake' is a portmanteau of two concepts, deep learning (a subfield of machine learning) and fake content that directly refers to videos, images, or audio of and/or images of individuals saying or doing things they have not done.[25] Deepfakes are a type of synthetic media that uses The term first appeared in 2017 when an anonymous Reddit user uploaded a video titled 'deepfakes,' in which the user had manipulated pornographic content by swapping the original female faces with the faces of famous

[25] Flynn et al., "Deepfakes and Digitally Altered Imagery Abuse"; "The Ethics of Deepfakes," n.d.; Dolhansky et al., "The Deepfake Detection Challenge (DFDC) Preview Dataset"; Nick Dunard, "The Algorithms That Create and Detect Them and the National Security Risks They Pose" 8 (n.d.); Mika Westerlund, "The Emergence of Deepfake Technology: A Review," *Technology Innovation Management Review* 9, no. 11 (n.d.): 39–52, https://doi.org/10.22215/timreview/1282; Paris, "Configuring Fakes"; Volkert et al., "Understanding the Illicit Economy for Synthetic Media," March 2020.

female celebrities[26] – quickly making its way into the American lexicon as well as an official term in the Oxford English Dictionary by 2018.[27]

Deepfake technology is a subset of synthetic media technology that uses deep learning algorithms, most commonly Generative Adversarial Networks (GANs), to teach themselves how to solve problems within large data sets (pornography).[28] Deepfake technology uses two deep learning neural networks, "forger" and "detector," which are fed the same data and 'fight' back and forth in a battle of generation and detection until the detector network stops rejecting the synthetic image (sexual deepfakes).[29] This back-and-forth is one of the reasons the race to create accurate deepfake detection technology is referred to as the deepfake "arms race" because the same technology used to detect deepfakes is used to create them.[30] This poses severe challenges in creating successful deepfake detection technology that is unsusceptible to malicious deepfakes learning the detection technology's 'points of weakness.'[31]

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[26] Henry Ajder et al., "The State of Deepfakes: Landscape, Threats, and Impact," n.d.
[27] Raina Davis, "Technology Factsheet: Deepfakes," Edited by Chris Wiggins, Joan Donovan and Amritha Jayanti. Policy Brief, *Belfer Center for Science and International Affairs, Harvard Kennedy School*, Spring 2020.
[28] Identity Management Institute (IMI), "The Deep Trouble with Deepfakes," February 6, 2023, https://identitymanagementinstitute.org/the-deep-trouble-with-deepfakes/; Ivan Perov, "DeepFaceLab 2.0 Guide," *Welcome to Mr.DeepFakes Forums*, February 5, 2020, https://mrdeepfakes.com/forums/threads/guide-deepfacelab-2-0-guide.3886/.
[29] Identity Management Institute (IMI), "The Deep Trouble with Deepfakes"; Michel Kana Ph.D, "Generative Adversarial Network (GAN) for Dummies — A Step By Step Tutorial," Medium, February 19, 2021, https://towardsdatascience.com/generative-adversarial-network-gan-for-dummies-a-step-by-step-tutorial-fdefff170391.
[30] Deeraj Nagothu et al., "Deterring Deepfake Attacks with an Electrical Network Frequency Fingerprints Approach," *Future Internet* 14, no. 5 (May 2022): 125, https://doi.org/10.3390/fi14050125.
[31] Ajder, Patrini, and Cavalli, "Automating Image Abuse: Deepfake Bots on Telegram," October 2020; Ajder et al., "The State of Deepfakes: Landscape, Threats, and Impact," September 2019; Volkert et al., "Understanding the Illicit Economy for Synthetic Media," March 2020; Patrini, "The State of Deepfakes 2020: Update on Statistics and Trends," March 2021.

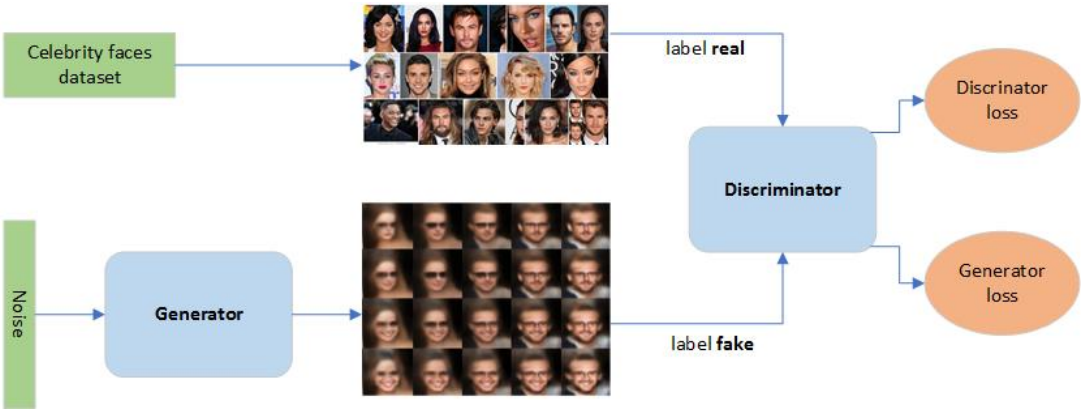


Figure 1. Generative Adversarial Networks (GANs) Diagram[32]

Sexual Deepfakes

Sexual deepfakes are a subset of both image-based sexual abuse and the synthetic sexually explicit media (SSEM) spectrum. The pornographic origins of ‘deepfakes’ were not lost on the public, resulting in the pervasive adaption to the term ‘deepfake pornography,’ which by 2018 had also made its way into the everyday vocabulary of Western culture.[33] However popular the colloquialism ‘deepfake pornography’ may have become over the last several years, this study finds an issue with equating experiences of abuse to pornography and, further, as objects for the sexual gratification of men. As such, this study suggests the term sexual deepfakes as a suitable alternative for the following reasons:

1. The word "pornography" removes the possibility of violating experiences by alluding to such experiences as objects used for the sexual gratification of others.
2. It focuses on the content and hides the abusive nature of these images and videos.

[32] Ph.D, “Generative Adversarial Network (GAN) for Dummies — A Step By Step Tutorial.”
[33] Raina Davis, “Technology Factsheet.”

3. The term “Deepfake pornography” fails to capture the inherent lack of consent.

This study strongly asserts that these changes in terminology are purposeful and are not to be regarded as arbitrary but rather imperative to this study’s inspiration and purpose. Creating, sharing, or threatening to create/share sexually explicit images and videos of an individual without their consent is not ‘pornography’ – it is abuse and should be understood as such.

Synthetic Media

Synthetic media ranges in scale and sophistication from basic video processing technology such as Photoshop to algorithmically generated digital content, such as deepfakes and artificial intelligence (AI), to modify audio or visual content to represent their particular ideas.[34] This study defines synthetic sexually explicit media (SSEM) by two key characteristics:[35]

1. The non-consensual creation of sexually explicit and/or sexualized media.
2. An intentionally malicious design that facilitates the dissemination and increased shareability on social media platforms.

[34] Paris and Donovan, “Deepfakes and Cheap Fakes,” September 18, 2019; Ajder et al., “The State of Deepfakes: Landscape, Threats, and Impact,” n.d.; Dolhansky et al., “The Deepfake Detection Challenge (DFDC) Preview Dataset”; Giorgio Patrini, “The State of Deepfakes 2020: Update on Statistics and Trends,” n.d.; Samuel Henrique Silva et al., “Deepfake Forensics Analysis: An Explainable Hierarchical Ensemble of Weakly Supervised Models,” *Forensic Science International: Synergy* 4 (2022): 100217, https://doi.org/10.1016/j.fsisyn.2022.100217; “The Ethics of Deepfakes”; Ángel Vizoso, Martín Vaz-Álvarez, and Xosé López-García, “Fighting Deepfakes: Media and Internet Giants’ Converging and Diverging Strategies Against Hi-Tech Misinformation,” *Media and Communication* 9, no. 1 (March 3, 2021): 291–300, https://doi.org/10.17645/mac.v9i1.3494.

[35] Ajder et al., “The State of Deepfakes: Landscape, Threats, and Impact,” n.d.; Ajder, Patrini, and Cavalli, “Automating Image Abuse: Deepfake Bots on Telegram,” October 2020; Patrini, “The State of Deepfakes 2020: Update on Statistics and Trends,” n.d.; Paris, “Configuring Fakes”; Paris and Donovan, “Deepfakes and Cheap Fakes,” September 18, 2019; Öhman, “Introducing the Pervert’s Dilemma”; “The Ethics of Deepfakes.”

These key characteristics result in damaging consequences such as the denigration or ruin of the target's online and offline reputation.[36]

Synthetic Media as a Catch-All Phrase

For this study, the phrase synthetic sexually explicit media (SSEM) will be used as a catch-all phrase for any sexually explicit or sexualized content, regardless of intent created using synthetic media technology. Colloquially and academically, the terms "deepfake" and "synthetic" have acquired similar connotations and are frequently used synonymously.[37] This is similar to the terms "Kleenex," "Xerox," and "Photoshop" which at one time represented specific products from a single respective manufacturer, whereas today, they are used interchangeably and are universally recognized as a broad category rather than specific products.[38] While this study does not intend to endorse the 'misuse' of these terms, it recognizes the terminology's fluidity. For the sake of pragmaticism, this study will use the term "synthetic" to refer to any media that has been altered using digital editing, AI, or machine learning technology but will specify instances in which the subset of "deepfake" technology has been used by using the term "deepfake(s)." Because of the vast variation in tools and sophistication, it would be erroneous to assume that deepfake technology is the only form of synthetic media that can appear visually realistic. To err on the side of caution, a continuum of SSEM was

[36] Paris and Donovan, "Deepfakes and Cheap Fakes," September 18, 2019; Paris, "Configuring Fakes"; Langlois and Slane, "Economies of Reputation"; Carolyn A Uhl et al., "An Examination of Nonconsensual Pornography Websites," *Feminism & Psychology* 28, no. 1 (February 2018): 50–68, https://doi.org/10.1177/0959353517720225.
[37] Program, "Increasing Threat of Deepfake Identities."
[38] Program.

applied to allow room for uncertainties or unknowns regarding the type of technology used to create any such synthetic media.

Chapter II.

Literature Review

The Continuum of Image-Based Sexual Abuse (IBSA)

Image-Based Sexual Abuse (IBSA)

Image-based sexual abuse (IBSA) is a multifarious and widespread phenomenon, with reports of different forms of IBSA originating from almost every part of the globe. IBSA is the act of creating, sharing, or threatening to create and/or share sexually explicit and/or sexualized content of an individual without their consent, and often without knowledge. Technology is constantly evolving, and so are how IBSA can be perpetrated, including but not limited to non-consensual dissemination of sexually explicit media (NCDSEM) or revenge pornography; "sextortion;" "upskirting;" "downblousing;" photoshopped/digitally altered, or "deepfake" images/videos.[39]

IBSA and Sexual Deepfakes: A Snapshot

In many cases, experiences of IBSA and sexual deepfakes occur in tandem with other forms of violence, demonstrating experiences of polyperpetration and polyvictimization. In the Steubenville, Ohio, case, arguably the most publicized case in

[39] Clare McGlynn et al., "'It's Torture for the Soul': The Harms of Image-Based Sexual Abuse," *Social & Legal Studies* 30, no. 4 (August 1, 2021): 541–62, https://doi.org/10.1177/0964663920947791; Nicola Henry and Anastasia Powell, "Embodied Harms: Gender, Shame, and Technology-Facilitated Sexual Violence," *Violence Against Women* 21, no. 6 (June 1, 2015): 758–79, https://doi.org/10.1177/1077801215576581; Willy Pedersen et al., "Sexual Victimization in the Digital Age: A Population-Based Study of Physical and Image-Based Sexual Abuse Among Adolescents," *Archives of Sexual Behavior*, January 20, 2022, https://doi.org/10.1007/s10508-021-02200-8; Nicola Henry, Anastasia Powell, and Asher Flynn, "Not Just 'Revenge Pornography': Australians' Experiences of Image-Based Abuse A Summary Report," 2018, https://doi.org/10.13140/RG.2.2.29903.59045.

North America, the rape of an unconscious teenage girl was photographed by her rapists, two teenage boys, and "witnesses" (secondary perpetrators) that were then posted and shared with others via social media, text message, and email. Perhaps the most notorious photo was of the two teenage boys carrying the victim between locations by her wrists and ankles.[40] In 2019, the name of a 27-year-old Indian female veterinarian was "trending" on popular pornography sites, surpassing 8 million searches in 72 hours after being kidnapped, brutally raped, suffocated, set on fire, and murdered by four men.[41] Her body was found under a bridge, burned beyond recognition, on the outskirts of Hyderabad. In India and Pakistan, the doctor's name was the top "trending" search, propelled by videos purporting to be of her rape and murder and through user searches by those hoping to find sexual gratification from watching her rape and murder.[42]

Numerous studies have found that female journalists and politicians disproportionately experience online violence, sexual harassment, and IBSA.[43] Florida Democratic Senator, Lauren Book, was a target of sextortion by a 19-year-old male who threatened to release deepfake images and videos of the Senator and her husband unless

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[40] Cressida J. Heyes, "Dead to the World: Rape, Unconsciousness, and Social Media," *Signs: Journal of Women in Culture and Society* 41, no. 2 (January 2016): 361–83, https://doi.org/10.1086/682964.
[41] Anushree Fadnavis, "'Nuke the Humanity!' Shocked & Disgusted Indians Demand Porn Site Remove Gang-Rape Victim Priyanka Reddy's Name from Trends," *Reuters*, accessed December 10, 2022, https://www.rt.com/news/474802-priyanka-reddy-porn-trends-scandal/; Cutacut Editorial Team, "After Being Raped and Killed, Priyanka Reddy's Name Has Been Searched '8 Million Times' on Adult Websites," December 4, 2019, https://cutacut.com/2019/12/04/after-being-raped-and-killed-priyanka-reddys-name-has-been-searched-8-million-times-on-adult-websites/.
[42] Fadnavis, "'Nuke the Humanity!' Shocked & Disgusted Indians Demand Porn Site Remove Gang-Rape Victim Priyanka Reddy's Name from Trends"; Cutacut Editorial Team, "After Being Raped and Killed, Priyanka Reddy's Name Has Been Searched '8 Million Times' on Adult Websites"; Julie Posetti et al., "Online Violence against Women Journalists," *UNESCO*, 2020.
[43] Julie Posetti et al., "Online Violence against Women Journalists," *UNESCO*, 2020; Anya Schiffrin, Karolina Koc-Michalska, and Michelle Ferrier, "Women in the Digital World," *Information, Communication & Society* 24, no. 14 (October 26, 2021): 1991–97, https://doi.org/10.1080/1369118X.2021.1974520; Michelle Ferrier and EL Munoz, "Attacks and Harassment: The Impact on Female Journalists and Their Reporting," *Internafional Womens Media Foundafion & TrollBusters*, 2018, https://Www. Iwmf. Org/Attacks-and-Harassment.

she agreed to give him $5,000 in gift cards.[44] Rana Ayyub, an Indian investigative journalist, was the target of a non-consensual sexual deepfake campaign after reporting on the rape of an eight-year-old Kashmiri girl and how the nationalist Bhartiya Janata Party (BJP) was supporting the accused. Supporters of the BJP superimposed the journalist into a pornographic video shared on Twitter, Facebook, Instagram, and WhatsApp. She was solicited for sex, sexually harassed, doxxed through a fake Twitter account, subjected to rape and death threats, and refused assistance from the police.[45]

Suicide has also been prevalent in cases of IBSA, particularly in cases of teenage girls, such as the Canadian cases of 13-year-old Amanda Todd and 15-year-old Rehtaeh Parsons, both of which died by suicide after experiencing non-consensual dissemination of sexually explicit media (NCDEM) and subsequent bullying (both online and offline).[46] In 2022, a 15-year-old Australian teenage girl who was superimposed into a sexual deepfake video by classmates died by suicide. She was severely bullied in the years leading up to the deepfake video and after her death. Just hours after her death, the same classmates that harassed her while she was alive posted vile slurs on Snapchat, joking about her tragic suicide.[47] In December 2021, Passant Khaled, an Egyptian 17-year-old

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[44] Virginia Chamlee, "Inside the Case of Lawmaker Who Discovered Intimate 'Deepfake' Photos of Her Were Circulating Online," People, January 31, 2022, https://people.com/politics/inside-the-case-of-the-florida-lawmaker-who-realized-deepfake-nudes-online/.

[45] Rana Ayyub, "In India, Journalists Face Slut-Shaming and Rape Threats," *The New York Times*, May 22, 2018, https://www.nytimes.com/2018/05/22/opinion/india-journalists-slut-shaming-rape.html; Rana Ayyub, "I Was The Victim Of A Deepfake Porn Plot Intended To Silence Me," *Huffington Post UK*, November 21, 2018, https://www.huffingtonpost.co.uk/entry/deepfake-porn_uk_5bf2c126e4b0f32bd58ba316.

[46] Heyes, "Dead to the World."

[47] Sam McPhee, "Matilda Tilly Rosewarne: Teenage Suicide Victim's Torment Revealed by Family in Heartwrenching Essay," *Daily Mail UK*, accessed March 29, 2023, https://www.dailymail.co.uk/news/article-10645971/Matilda-Tilly-Rosewarne-Teenage-suicide-victims-torment-revealed-family-heartwrenching-essay.html; Summer Wooley, "Bullies Who Drove Young Matilda 'Tilly' Rosewarne to Death Mocked Her with Vile Slurs Hours after Her Final Act," *7news AU*, March 24, 2022, sec. NSW News, https://7news.com.au/news/nsw/matilda-tilly-rosewarnes-family-calls-for-change-after-teens-suicide-c-6187165.

teenage girl, died by suicide after being bullied by classmates over a non-consensual sexual deepfake image of her after turning down the proposal of a young man. In retaliation, he and a friend hacked into Passant's computer, stole her pictures, superimposed her face onto the body of a naked woman, and posted it on social media. Passant was bullied by classmates and teachers, with one of her teachers telling the class that her image was "trending" online.[48] Dedicated doxxing websites such as *IsAnyoneUp?* and *PornWikiLeaks*, both of which are now defunct, encouraged users to identify and harass the individuals whose images and videos were non-consensually posted to their sites. Not only did victims suffer from the open solicitation of non-consensual sexually explicit media (NCSEM), but their suffering was amplified by the humiliation, harassment, and violence they endured as a result of the exposure of their identifying information.[49]

Camera-enabled mobile devices, smartphones, and computers, and a relatively permanent connection to the Internet demonstrate the dangerous aspects of the Internet that not only permit but encourage harmful online behaviors, particularly towards women.[50] Instances of "upskirting," also known as *appu-sukaato*, in Japan are correlated to the increase in accessibility and affordability of mobile phones and smart phone

[48] Magdy Samaan, "Egyptian Girl, 17, Kills Herself over Naked Photos Online," *The Times UK*, January 7, 2022, https://www.thetimes.co.uk/article/egyptian-girl-17-kills-herself-over-naked-photos-online-7r80l9gwm.
[49] Nicola Henry and Asher Flynn, "Image-Based Sexual Abuse: Online Distribution Channels and Illicit Communities of Support," *Violence Against Women* 25, no. 16 (December 2019): 1932–55, https://doi.org/10.1177/1077801219863881; Chan, "Becoming Pornography: White Women, Voyeuristic Surveillance, and Image-Based Sexual Abuse."
[50] Kathryn Branch et al., "Revenge Porn Victimization Of College Students In The United States: An Exploratory Analysis," April 9, 2017, https://doi.org/10.5281/ZENODO.495777; Nicola Henry, "Beyond the 'Sext': Technology- Facilitated Sexual Violence and Harassment against Adult Women," n.d.; Elizabeth M. Clancy et al., "Sext Dissemination: Differences across Nations in Motivations and Associations," *International Journal of Environmental Research and Public Health* 18, no. 5 (March 2, 2021): 2429, https://doi.org/10.3390/ijerph18052429.

technology.[51] A similar correlation in South Africa demonstrates the positive correlation between the recent uptick in the distribution of 'viral' rape videos and mobile phone use.[52] Virtual rape (cyber rape) of adults and minors has been an increasingly common experience, especially within virtual/augmented reality platforms such as those offered by Meta in the Metaverse.[53] Virtual/cyber rape is the simulation of sexual violence online, either through avatars, images, or verbal/textual iterations of rape.[54]

This list is not exhaustive of every example of IBSA but instead demonstrates the contexts and resulting harms of IBSA. While this study focuses on exploring the lived experiences of victim-survivors of sexual deepfakes, it is equally important to address the evolutionary nature of sexual violence by exploring how traditional sexual violence has been reinvented and amplified through Internet communication technologies. A subset of the continuum of IBSA is synthetic sexually explicit media (SSEM), a smaller spectrum of image-based sexual abuse limited to instances in which synthetic media technologies are employed.

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[51] Chan, "Becoming Pornography: White Women, Voyeuristic Surveillance, and Image-Based Sexual Abuse"; David Murakami Wood, "Editorial: People Watching People," *Surveillance & Society* 2, no. 4 (2004), https://doi.org/10.24908/ss.v2i4.3358.

[52] Chan, "Becoming Pornography: White Women, Voyeuristic Surveillance, and Image-Based Sexual Abuse"; Jennifer Radloff, "Digital Security as Feminist Practice," *Feminist Africa*, December 1, 2013, 145–55.

[53] Nick Yee and Jeremy Bailenson, "The Proteus Effect: The Effect of Transformed Self-Representation on Behavior," *Human Communication Research* 33, no. 3 (July 2007): 271–90, https://doi.org/10.1111/j.1468-2958.2007.00299.x; Laura Ortiz, "Risks of the Metaverse: A VRChat Study Case," *The Journal of Intelligence, Conflict, and Warfare* 5, no. 2 (November 24, 2022): 53–128, https://doi.org/10.21810/jicw.v5i2.5041.

[54] Jesse Fox et al., "Sexualized Avatars Lead to Women's Self-Objectification and Acceptance of Rape Myths," *Psychology of Women Quarterly* 39, no. 3 (September 2015): 349–62, https://doi.org/10.1177/0361684314553578; Jesse Fox, Jeremy N. Bailenson, and Liz Tricase, "The Embodiment of Sexualized Virtual Selves: The Proteus Effect and Experiences of Self-Objectification via Avatars," *Computers in Human Behavior* 29, no. 3 (May 2013): 930–38, https://doi.org/10.1016/j.chb.2012.12.027; Dodge, "Digitizing Rape Culture"; Laura Ortiz, "Risks of the Metaverse: A VRChat Study Case," *The Journal of Intelligence, Conflict, and Warfare* 5, no. 2 (November 24, 2022): 53–128, https://doi.org/10.21810/jicw.v5i2.5041; Anastasia Powell and Nicola Henry, *Sexual Violence in a Digital Age* (London: Palgrave Macmillan UK, 2017), https://doi.org/10.1057/978-1-137-58047-4.

The Deepfake Landscape: A Snapshot

In what is believed to be the first global mapping of the deepfake landscape, conducted by an Amsterdam-based company providing detection technologies and research, Sensity AI (formerly Deeptrace) estimated from December 2018 to December 2020, the number of deepfake videos have doubled every six months - representing a compounded annual growth rate of 226%, with malicious and pornographic deepfakes remaining the overwhelming majority (93%) of identified videos, primarily targeting women (~90%).[55] This growth was "supported by the commodification of tools and services that lower the barrier for non-experts to create deepfakes,"[56] none of which would have been possible without deepfake technology's early adoption by the pornography industry.[57]

In 2018, most sexual deepfakes were hosted on dedicated sexual deepfake platforms, with the top four dedicated sexual deepfake websites harnessing over 134 million views.[58] The large viewership becomes even most concerning under the pretense that the first dedicated deepfake pornography website was only launched in February 2018, which was 'coincidentally' the same month Reddit 'banned' involuntary

[55] Ajder, Patrini, and Cavalli, "Automating Image Abuse: Deepfake Bots on Telegram," October 2020; Ajder et al., "The State of Deepfakes: Landscape, Threats, and Impact," September 2019; Patrini, "The State of Deepfakes 2020: Update on Statistics and Trends," March 2021.; Only about 8,000 deepfake videos existed in December 2018, but by July 2019, the landscape had grown to approximately 15,000 deepfake videos, representing close to a 100% increase over the course of seven months – 96% of which were "deepfake pornography" (~14,000 videos), targeting women in 100% of cases. Two years later, in December 2020, that total had risen to over 85,000 identified deepfakes, 93% of which were pornographic maintaining a predominant focus on targeting women (~90%).

[56] Ajder, Patrini, and Cavalli, "Automating Image Abuse: Deepfake Bots on Telegram," October 2020; Ajder et al., "The State of Deepfakes: Landscape, Threats, and Impact," September 2019; Patrini, "The State of Deepfakes 2020: Update on Statistics and Trends," March 2021.

[57] Johnson, "Pornography Drives Technology: Why Not to Censor the Internet"; S Silkunas, "Obscene Profits: The Entrepreneurs of Pornography in the Cyber Age.," 1999.

[58] Ajder et al., "The State of Deepfakes: Landscape, Threats, and Impact," September 2019.

pornography, "including depictions that may have been faked" from its platform.[59] Today, sexual deepfakes continue to be hosted and advertised on mainstream pornography platforms such as XVideos, Xnxx, xHamster, and PornHub, accumulating tens of millions of views. One deepfake video, found on all three sites: XVideos, Xnxx, and xHamster, is a 30-second video of a famous female celebrity (left unnamed to respect her privacy) had been viewed over 23 million times between all three sites and over 13 million times on Xnxx alone between 2018 and 2020.[60]

Since Reddit removed r/deepfakes, sexual deepfakes have become increasingly commodified through the democratization of deepfake and synthetic media technology, the increasing presence of dedicated deepfake forums, the expansion of open-source repositories, and publicly accessible sexual deepfake codes, deepfake services offered on encrypted chats and social media applications, as well as from the emergence of "nudifying" bots generating images through private chats such as on Telegram and Discord.[61]

The public exposure of non-consensual sexually explicit deepfake videos of multiple female Twitch streamers in January 2023 was a rude and violent awakening

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[59] Robertson, "Reddit Bans 'Deepfakes' Ai Porn Communities," *The Verge*, February 7, 2018, https://www.theverge.com/2018/2/7/16982046/reddit-deepfakes-ai-celebrity-face-swap-porn-community-ban.; Ajder et al., "The State of Deepfakes: Landscape, Threats, and Impact," September 2019; Ajder, Patrini, and Cavalli, "Automating Image Abuse: Deepfake Bots on Telegram," October 2020.

[60] Matt Burgess, "Deepfake Porn Is Now Mainstream. And Major Sites Are Cashing In," *Wired UK*, August 27, 2020, https://www.wired.co.uk/article/deepfake-porn-websites-videos-law.

[61] Ajder et al., "The State of Deepfakes: Landscape, Threats, and Impact," n.d.; Ajder, Patrini, and Cavalli, "Automating Image Abuse: Deepfake Bots on Telegram," October 2020; Patrini, "The State of Deepfakes 2020: Update on Statistics and Trends," n.d.; Volkert et al., "Understanding the Illicit Economy for Synthetic Media," March 2020; Samantha Cole, "Deepnude: The Horrifying App Undressing Women.," *Motherboard: Tech by Vice*, June 26, 2019, https://www.vice.com/en/article/kzm59x/deepnude-app-creates-fake-nudes-of-any-woman.; James Vincent, "Copies of Ai Deepfake App DeepNude Are Easily Accessible Online - and Always Will Be.," *The Verge*, July 3, 2019, https://www.theverge.com/2019/7/3/20680708/deepnude-ai-deepfake-app-copies-easily-accessible-available-online.

after five years of misleading narratives and public concerns surrounding political disruption and dismantling democracy, contributing to the minimization of harms experienced by "deepfake pornography" – which has been and still is the most significant facet of the deepfake landscape.[62] The transparency of their experiences was the unfortunate but seemingly necessary catalyst in initiating these discussions. Discussions that finally assert sexual deepfakes as morally impermissible "on the basis of their role in gender inequality."[63] One survivor described her experience as devastatingly painful and violating, sentiments that have been and will be echoed by countless others:

> This is what it looks like to feel violated. This is what it feels like to be taken advantage of, this is what it looks like to see yourself naked against your will being spread all over the internet. This is what it looks like… "F- -k the f- -king internet. F- -k [offender's name] for showing it to thousands of people. F- -k the people DMing me pictures of myself from that website. F- -k you all! This is what it looks like, this is what the pain looks like.[64]

As such, the anonymity, accessibility, and affordability of the Internet not only make it a unique tool for facilitating historical forms of sexual violence but also for reinventing historical forms of sexual violence against women, such as through sexual deepfakes."[65] Despite the significant challenges posed by the democratization and decentralization of this technology in analyzing the proliferation and context of the

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[62] Samantha Cole, "'You Feel So Violated': Streamer QTCinderella Is Speaking Out Against Deepfake Porn Harassment," *Morthboard: Tech by Vice*, February 23, 2023, https://www.vice.com/en/article/z34pq3/deepfake-qtcinderella-atrioc.
[63] Öhman, "Introducing the Pervert's Dilemma."
[64] Bevan, "QTCinderella Vows To Sue Explicit Deepfake Website Using Her Image," *The Gamer*, January 31, 2023, https://www.thegamer.com/qtcinderella-atrioc-deepfake-site-lawsuit-sue/.
[65] Majid Yar and Jacqueline Drew, "Image-Based Abuse, Non-Consensual Pornography, Revenge Porn: A Study of Criminalization and Crime Prevention in Australia and England & Wales," March 13, 2020, https://doi.org/10.5281/ZENODO.3709306; S Brown, "Integration by Way of the Criminology of Hybrids," *Criminology: An Integrated Approach*, 2006, 118–21; Henry and Powell, "Embodied Harms"; Yar, "The Novelty of 'Cybercrime': An Assessment in Light of Routine Activity Theory"; Majid Yar, "E-Crime 2.0: The Criminological Landscape of New Social Media," *Information & Communications Technology Law* 21, no. 3 (October 2012): 207–19, https://doi.org/10.1080/13600834.2012.744224; Majid Yar, "The Policing of Internet Sex Offences: Pluralised Governance versus Hierarchies of Standing," *Policing and Society* 23, no. 4 (December 2013): 482–97, https://doi.org/10.1080/10439463.2013.780226.

deepfake landscape, the purpose and target has remained unequivocally evident: reinventing and amplifying traditional forms of sexual violence against women.

Pornography and Technology

Often amongst the earliest adopters, pornography has played a pivotal role in the diffusion of new media technologies by providing a profitable niche market of early consumers willing to initially pay higher costs, lowering the barrier of entry and transaction costs for larger markets in the mainstream economy.[66] Technology's democratization of pornography, coupled with the increasing social acceptance of sexually explicit media, has consequently reshaped the nature of pornography.

Pornography's role in the diffusion of new media technologies dates back to the printing press, wherein before its invention, pornography was only accessible to a select few, primarily affluent, heterosexual, white men.[67] The printing press dramatically altered the landscape of pornography by increasing accessibility through mass publication, lowering production costs, and creating a relatively unregulated public market.[68] The extent to which these three elements have impacted pornography has increased with the

[66] Johnson, "Pornography Drives Technology: Why Not to Censor the Internet"; Jonathan Coopersmith, "Pornography, Technology, and Progress," *Icon (London, England)* 4 (1998): 94–125; Margaret Macdonald, "Desire for Data: PornHub and the Platformization of a Culture Industry" (PhD Thesis, Concordia University, 2019), https://spectrum.library.concordia.ca/id/eprint/986147/7/MacDonald_MA_S2020.pdf.
[67] Johnson, "Pornography Drives Technology: Why Not to Censor the Internet"; Coopersmith, "Pornography, Technology, and Progress"; Carl Öhman, "Introducing the Pervert's Dilemma: A Contribution to the Critique of Deepfake Pornography," *Ethics and Information Technology* 22, no. 2 (June 2020): 133–40, https://doi.org/10.1007/s10676-019-09522-1; Fabio Zattoni et al., "The Impact of COVID-19 Pandemic on Pornography Habits: A Global Analysis of Google Trends," *International Journal of Impotence Research* 33, no. 8 (December 1, 2021): 824–31, https://doi.org/10.1038/s41443-020-00380-w.
[68] Johnson, "Pornography Drives Technology: Why Not to Censor the Internet"; Coopersmith, "Pornography, Technology, and Progress."

advent of each new media technology and further solidifies the relationship between pornography, technology, and society. G.N. Gordon comments on this:

> The avidity with which eroticism was devoured by the technologies of communication that might allow people to accomplish these ends is confirmed by one startling (to me) fact: Each and every instrument of communication that has been devised to date by man (including television) has been almost immediately turned to the service of what the culture in which it was invented called "pornography", not on a limited basis but to whatever extent that technology - and the inventive mind of man - could contrive, regardless of so-called 'public attitudes' at the time or the law.[69]

Over the last 50 years, the relationship between pornography and technology further solidified. Pornography, as an early adopter, has played a crucial role in the diffusion of more recent new media technologies: cable, satellite, and digital TV, VHS, VCR, "900" numbers, DVDs, desktop computers, the Internet, web hosting, e-commerce, web payment, Webcams, streaming video, tube sites, and social media.[70] Akin to the printing press, pornography consumers were early buyers, lowering the barrier of entry and reducing transaction costs for more mainstream markets. In *Pornography Drives Technology*, Johnson argues that the convergence of television, computer, and recording technologies paved the way to an increasingly connected web of new media technologies, all of which have a detailed lineage that traces back to pornography, "Nonetheless, at the edges of the growing web of networks, some strings still dangle that identify the sources of all this convergence. Tug one and up pops porn."[71]

Significantly, technology has democratized pornography on an exclusionary basis in which accessibility is based on hierarchical gender power relations. The mutually

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[69] Jonathan Coopersmith, "Pornography, Technology, and Progress," *Icon (London, England)* 4 (1998): 94–125.
[70] Bill Roberts, "Dirty Little Secret," *Electronic Business* 32, no. 7 (2006): 30.
[71] Johnson, "Pornography Drives Technology: Why Not to Censor the Internet."

constitutive relationship between the pornography industry and technology, akin to that conceptualized by Judy Wajcman in *Technofeminism* (2004) of gender and technology, is crucial in identifying systemic gender power structures that have been reproduced and amplified through technological development such as that with synthetic media technologies.[72] Gender power inequalities are present throughout the pornography industry as consumers, producers, and distributors are predominantly men.[73] Technology similarly has remained a male-dominated space wherein "privileged white, male, able-bodied and heterosexual identities are embedded in technology's development or taken as normative in many online interactions."[74] What has resulted is the creation of a technology primed for pornography, its purpose and intent solely lying within women *becoming pornography* to fulfill gratification of some form, either economic, sexual, or both.

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[72] Judy Wajcman, *TechnoFeminism* (Cambridge; Malden, MA: Polity, 2004).

[73] Coopersmith, "Pornography, Technology, and Progress."; McVey, Gurrieri, and Tyler, "The Structural Oppression of Women by Markets."; Macdonald, "Desire for Data: PornHub and the Platformization of a Culture Industry."

[74] Anastasia Powell, Asher Flynn, and Lisa Sugiura, eds., *The Palgrave Handbook of Gendered Violence and Technology* (Cham: Springer International Publishing, 2021), https://doi.org/10.1007/978-3-030-83734-1; Powell and Henry, *Sexual Violence in a Digital Age*; Noelle Martin, "Image-Based Sexual Abuse and Deepfakes: A Survivor Turned Activist's Perspective," in *The Palgrave Handbook of Gendered Violence and Technology*, ed. Anastasia Powell, Asher Flynn, and Lisa Sugiura (Cham: Springer International Publishing, 2021), 55–72, https://doi.org/10.1007/978-3-030-83734-1_4; Noelle Martin, "Image-Based Sexual Abuse and Deepfakes: A Survivor Turned Activist's Perspective," in *The Palgrave Handbook of Gendered Violence and Technology*, ed. Anastasia Powell, Asher Flynn, and Lisa Sugiura (Cham: Springer International Publishing, 2021), 55–72, https://doi.org/10.1007/978-3-030-83734-1_4; Lauren Rosewarne, "Abuse as Artefact: Understanding Digital Abuse of Women as Cultural Informant," in *The Palgrave Handbook of Gendered Violence and Technology*, ed. Anastasia Powell, Asher Flynn, and Lisa Sugiura (Cham: Springer International Publishing, 2021), 135–53, https://doi.org/10.1007/978-3-030-83734-1_8; Walter S. DeKeseredy and Martin D. Schwartz, "Thinking Sociologically About Image-Based Sexual Abuse: The Contribution of Male Peer Support Theory," *Sexualization, Media, & Society* 2, no. 4 (December 1, 2016): 237462381668469, https://doi.org/10.1177/2374623816684692; Asher Flynn and Elena Cama, *Image-Based Abuse: Gender Differences in Bystander Experiences and Responses* (Australian Institute of Criminology, 2022), https://doi.org/10.52922/ti78672; Amanda R. Champion et al., "Examining the Gendered Impacts of Technology-Facilitated Sexual Violence: A Mixed Methods Approach," *Archives of Sexual Behavior* 51, no. 3 (2022): 1607–24, https://doi.org/10.1007/s10508-021-02226-y.

Sexual deepfakes are unique to previous technological developments because its public application was created with pornography as both an early adopter and a source of innovation, representing a distinct escalation in harm and intent. Technology is no longer merely facilitating access to pornography and the female body. Still, it is being used to create a new form of 'pornography' in which "physicality is no longer a requirement."[75] Building on the findings of Henry and Powell (2019), sexual deepfakes are then connected to a "growing demand for pornography that plays on fantasies of rape and humiliation of women while also favoring authenticity and amateurism."[76] This is consistent with Harder et al.'s (2022) research on sexual deepfake and SSEM offenders that found 'fake pornography' ideal because it increased the realism of sexual fantasies and gave them a sense of "sharing something with someone else."[77]

Although offenders were enticed by the advanced realism that deepfake technology awarded preconceived sexual fantasies, these same affordances were not depicted in their attitudes regarding the traumatic experiences felt by their victims.[78] DeKeseredy and Schwartz (2016) most clearly explain the causality between pornography and image-based sexual abuse in that "[p]ornography reflects, amplifies, and provides support for sexist attitudes and values, making it an integral part of today's modern and expanded rape-supportive culture that contributes to image-based sexual

[75] Foziha Hamid, "A Study of Sexual Violence in the Digital Age: Working with Technology-Facilitated Sexual Violence against Women within Sexual Violence Support Services," n.d.
[76] Nicola Henry and Asher Flynn, "Image-Based Sexual Abuse: Online Distribution Channels and Illicit Communities of Support," *Violence Against Women* 25, no. 16 (December 2019): 1932–55, https://doi.org/10.1177/1077801219863881.
[77] Öhman, "Introducing the Pervert's Dilemma"; Harder, "Re-Faced and Pornified—a Visual, Narrative Analysis of Sexual Scripts in Police Cases of Image-Based Abuse," July 5, 2022.
[78] Harder, "Re-Faced and Pornified—a Visual, Narrative Analysis of Sexual Scripts in Police Cases of Image-Based Abuse," July 5, 2022.

violence."[79] As new media technologies have blurred the lines between the producers, distributors, and consumers of pornography, deepfake technology has likewise blurred the lines between the physical and the virtual, resulting in a stark sense of dissonance between the perceived realism awarded to perpetrators and consumers of sexual deepfakes and its victims.[80]

The Deepfake Marketplace: Pornhub and GitHub

The emergence of "deepfake pornography" on mainstream pornography, social media, open-sourced repositories, and messaging platforms further solidified the societal acceptance and normalization of viewing, creating, and profiting from non-consensual imagery, something that has been of much debate in recent years. The following subsection will focus on two particularly problematic platforms: GitHub and Pornhub.

GitHub

Open-source repositories such as GitHub, which defines itself as a "code hosting platform for version control and collaboration,"[81] actively host codes, guides, and links to

[79] DeKeseredy and Schwartz, "Thinking Sociologically About Image-Based Sexual Abuse."
[80] Coopersmith, "Pornography, Technology, and Progress"; Rob Volkert et al., "Understanding the Illicit Economy for Synthetic Media," n.d., 14; Ganaele Langlois and Andrea Slane, "Economies of Reputation: The Case of Revenge Porn," *Communication and Critical/Cultural Studies* 14, no. 2 (April 3, 2017): 120–38, https://doi.org/10.1080/14791420.2016.1273534; Uhl et al., "An Examination of Nonconsensual Pornography Websites," February 2018; Kathrine Elmose Jørgensen and Jakob Demant, "Shame, Shaming and Economy: A Theory of Image-Based Sexual Abuse Within Different Online Sharing Environments," *First Monday* 26, no. 4 (March 20, 2021), https://doi.org/10.5210/fm.v26i4.11670; Harder, "Re-Faced and Pornified—a Visual, Narrative Analysis of Sexual Scripts in Police Cases of Image-Based Abuse," July 5, 2022; Nicola Henry and Asher Flynn, "Image-Based Sexual Abuse: Online Distribution Channels and Illicit Communities of Support," *Violence Against Women* 25, no. 16 (December 2019): 1932–55, https://doi.org/10.1177/1077801219863881.
[81] "Hello World," GitHub Docs, accessed March 28, 2023, https://ghdocs-prod.azurewebsites.net/en/get-started/quickstart/hello-world. Stars tell users how many times a certain software has been saved or 'liked' for future use on GitHub and uses 'forks' to determine the number of times a certain software has been

community forums, dedicated to the creation, collaboration, and commodification of synthetic media technologies, sexual deepfakes, and AI-leveraged 'nudifiying' websites and applications.[82] Three of the most notorious examples of exploitative codes/technologies, both of which remain publicly accessible and replicable on GitHub as of February 2023 despite the platform's alleged promise to remove and ban the original and prohibit any replicated codes, are: DeepFaceLab (DFL), the leading deepfake software, DeepNude, the first "AI-leveraged "nudifying" website and was quickly replicated to become the first AI-leverage 'nudifying' chat bot, and Unstable Diffusion, a 'donation' based sexual deepfake bot based off of the Stable Diffusion coding on GitHub.[83]

DeepNude. In October 2020, Sensity AI published results from their investigation of a deepfake ecosystem on Telegram, revealing its focal point to be an AI-powered bot that allows its users to 'strip' women of their clothing.[84] The ecosystem consisted of seven affiliated Telegram channels, with over 100,000 members, with the central hub channel

replicated or contributed to by other uses. This means that over 38,200 people have 'liked' or saved the DFL software for future use and over 8,500 users have created their own version of the DFL software.

[82] Ajder et al., "The State of Deepfakes: Landscape, Threats, and Impact," September 2019; Henry Ajder, Giorgio Patrini, and Francesco Cavalli, "Automating Image Abuse: Deepfake Bots on Telegram," *Sensity*, October 2020; Patrini, "The State of Deepfakes 2020: Update on Statistics and Trends," March 2021; Volkert et al., "Understanding the Illicit Economy for Synthetic Media," March 2020; "Hello World"; Hany Farid, "Creating, Using, Misusing, and Detecting Deep Fakes," *Journal of Online Trust and Safety* 1, no. 4 (2022).

[83] Kyle Wiggers and Amanda Silberling, "Meet Unstable Diffusion, the Group Trying to Monetize AI Porn Generators," *TechCrunch+*, November 17, 2022, https://techcrunch.com/2022/11/17/meet-unstable-diffusion-the-group-trying-to-monetize-ai-porn-generators/; Ivan Perov et al., "DeepFaceLab: Integrated, Flexible and Extensible Face-Swapping Framework" (arXiv, June 29, 2021), https://doi.org/10.48550/arXiv.2005.05535; Perov, "DeepFaceLab 2.0 Guide"; DeepNudecom, "DeepNudecom," GitHub, June 30, 2019, https://github.com/deepnudecom; Opendreamnet, "DreamTime and DreamPower: DeepNude Algorithm Fork with Improvements," Github, 2023, https://github.com/orgs/opendreamnet/repositories; Vincent, "Copies of Ai Deepfake App DeepNude Are Easily Accessible Online - and Always Will Be."; Opendreamnet, "The Leading Platform for Photo Nudification Join 7,000+ Satisfied Users! Our User-Friendly Platform Offers Seamless Photo Nudification across Multiple Devices, with Secure Storage for up to 12 Months!," Github, 2023, https://github.com/sukebenet.

[84] Ajder, Patrini, and Cavalli, "Automating Image Abuse: Deepfake Bots on Telegram," October 2020.

totaling over 45,0000 unique members from over 25 countries. By July 2020, more than 104,800 women had been publicly 'nudified.' From April 2020 to July 2020, these images increased by 198%. The bot also represented the recognizable shift away from targeting female celebrities towards private female individuals, wherein self-reporting by the bot's users indicated that private female individuals represented 70% of targets.[85] Notably, the bot had only been trained on female genitalia and could only 'strip' or 'nudify' images/videos of women.[86] Even in 2023, there has yet to be a 'nudifying' bot that functions on anyone other than women. Current 'nudifying' websites/applications advertise their strong opposition to creating training sets or bots that could strip different genders because it would interfere with the overarching goal of "making men's dreams come true."[87]

The bot was free to use but also had options to pay for more realistic content and removal of watermarks for a fee.[88] Its core functionality was provided by an open-source version of DeepNude software and was set up through an interface similar to an instant messaging app. Because the bot functioned as a 'chat' feature within Telegram, all users had to do to access the bot was log into Telegram, using either their desktop computer or mobile device (smartphone, tablet, etc.) and chat with the bot by uploading the image and wait for the 'stripped' response.[89]

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[85] Ajder, Patrini, and Cavalli.
[86] Adam Dodge, "Online Abuse Trends in 2023 and Beyond" (Virtual Presentation, EndTAB, Zoom, February 1, 2023).
[87] Jane Wakefield, "MP Maria Miller Wants AI 'nudifying' Tool Banned," *BBC News*, August 4, 2021, https://www.bbc.com/news/technology-57996910; Ben Wodecki, "British Politician Decries AI 'Nudifier' Platform, Calls for the Site to Be Banned," *AI Business*, August 5, 2021, https://aibusiness.com/responsible-ai/british-politician-decries-ai-nudifier-platform-calls-for-the-site-to-be-banned.
[88] Ajder, Patrini, and Cavalli, "Automating Image Abuse: Deepfake Bots on Telegram," October 2020.
[89] Ajder, Patrini, and Cavalli.

DeepFaceLab. DeepFaceLab is the leading deepfake software, estimated to be the software behind 95% of all deepfake videos,[90] and has been replicated over 8,000 times on GitHub.[91] What is perhaps more than a mere coincidence – it is also the primary technology to create sexual deepfakes, as the software was created by the founder of the most prolific dedicated sexual deepfakes website in the United States, Mr. Deepfakes.[92] As of 2023, Mr.Deepfakes contains over 20,000 videos, has over 13 million visits per month, and is home to what is believed to be the largest deepfake community with over 250,000 members, built through its extensive forum and messaging features.[93]

The DeepFaceLab repository on GitHub contains links to the software's primary source material – guides and tutorials, supplementary material, and communication groups. At which point, by clicking the links, users are directly sent to the Mr. Deepfakes website to learn how to use the DFL software.[94] These guides, while marked "SWF" are direct referrals to the most prolific deepfake pornography website in the United States, built on practices of sexual objectification, misogyny, and violence against women. Although GitHub publicly stated that the DeepNude codes violated their policies and would be removed and banned from re-uploading or the uploading of replicated coding,[95] as of February 2023, the original source code and *thousands* of replicated codes remain

[90] Ivan Perov et al., "DeepFaceLab: Integrated, Flexible and Extensible Face-Swapping Framework" (arXiv, June 29, 2021), https://doi.org/10.48550/arXiv.2005.05535; iperov, "DeepFaceLab," Python, March 18, 2020, https://github.com/iperov/DeepFaceLab.
[91] iperov, "DeepFaceLab"; "Hello World."
[92] iperov, "DeepFaceLab"; Perov et al., "DeepFaceLab"; Perov, "DeepFaceLab 2.0 Guide."
[93] *Deepfake Porn: Could You Be Next?*
[94] Perov, "DeepFaceLab 2.0 Guide."
[95] Samantha Cole, "GitHub Removed Open-Source Versions of DeepNude," *Motherboard: Tech by Vice*, July 9, 2019, https://www.vice.com/en/article/8xzjpk/github-removed-open-source-versions-of-deepnude-app-deepfakes; Vincent, "Copies of Ai Deepfake App DeepNude Are Easily Accessible Online - and Always Will Be."; Samantha Cole, "AI-Generated Porn Makers Have Been Kicked Off Their Favorite Host," *Motherboard: Tech by Vice*, January 31, 2018, https://www.vice.com/en/article/vby5jx/deepfakes-ai-porn-removed-from-gfycat.

publicly accessible on the platform.[96] Despite policies allegedly banning the replication of sexual deepfake codes, GitHub, similar to Pornhub, remains one of the top referral websites to Mr.DeepFakes.

		Domain (193)	Industry	Global Rank	Traffic Share ↓	
⌄	1	theporndude.com	Adult	#809	5.4M	51.69%
⌄	2	urporn.com	Adult	#2,150	1.1M	10.44%
⌄	3	simpcity.su	Adult	#560	646.1K	6.16%
⌄	4	shufflesex.com	Adult	#5,244	488.9K	4.66%
⌄	5	yandex.com	Search Engines	#113	468.1K	4.46%
⌄	6	xxxporn123.com	Adult	#6,547	457.3K	4.36%
⌄	7	forums.socialmediagirls.com	Adult	-	322.1K	3.07%
⌄	8	vervesex.com	Adult	#13,414	152.3K	1.45%
⌄	9	pornhub.com	Adult	#11	149.7K	1.43%
⌄	10	github.com	Programming and Developer Software	#70	118.2K	1.13%

Figure 2. GitHub in Top Ten Referral Sites to Mr.DeepFakes[97]

Notably, many platforms have publicly addressed the harms of sexual deepfakes, such as PornHub, Discord, Reddit, Gyfcat, Twitter, and GitHub, and have subsequently implemented policies prohibiting sexual deepfakes, 'how to' tutorials, and/or dedicated sexual deepfake codes and their copies – all of which have yet to enforce these policies.[98]

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[96] Opendreamnet, "The Leading Platform for Photo Nudification Join 7,000+ Satisfied Users! Our User-Friendly Platform Offers Seamless Photo Nudification across Multiple Devices, with Secure Storage for up to 12 Months!"; Opendreamnet, "DreamTime and DreamPower: DeepNude Algorithm Fork with Improvements"; DeepNudecom, "DeepNudecom"; iperov, "DeepFaceLab"; Wiggers and Silberling, "Meet Unstable Diffusion, the Group Trying to Monetize AI Porn Generators," November 17, 2022; Vincent, "Copies of Ai Deepfake App DeepNude Are Easily Accessible Online - and Always Will Be."

[97] SimilarWeb, "Top 10 Incoming Sites to Mr.DeepFakes.Com, January 2023 – February 2023," SimilarWeb + Mr.DeepFakes, January 2023, https://pro.similarweb.com/#/digitalsuite/websiteanalysis/referrals/incoming-traffic/*/999/2m?webSource=Total&key=mrdeepfakes.com.

[98] Vincent, "Copies of Ai Deepfake App DeepNude Are Easily Accessible Online - and Always Will Be."; Cole, "'You Feel So Violated': Streamer QTCinderella Is Speaking Out Against Deepfake Porn Harassment"; Cole, "GitHub Removed Open-Source Versions of DeepNude"; Samantha Cole, Emanuel Maiberg, and Anna Koslerova, "'Frankenstein's Monster:' Images of Sexual Abuse Are Fueling Algorithmic Porn," *Motherboard: Tech by Vice*, November 10, 2020, https://www.vice.com/en/article/akdgnp/sexual-abuse-fueling-ai-porn-deepfake-czech-casting-girls-do-

This is repeatedly seen through the implementation of lackluster responses, choosing only to enforce policies of non-consensual imagery when confronted by public scrutiny or through the flagrant disregard to potential harm incurred because the content is considered 'fake.' Pornhub is a particularly evident example of victim-blaming, lackluster policies, and complete dismissal of harm.

Pornhub.

Pornhub and its parent company MindGeek have been under intense scrutiny for the last several years – and for good reason. The exploitative truth behind the most notorious brand in the pornography industry has been rapidly unraveling since December 2020, when a New York Times article exposed the unbridled child sexual abuse material (CSAM), sex trafficking, rape, incest, and other non-consensually shared content that not only existed but was being monetized by the platform.[99] On December 14, 2020, just days after the NYT article, Pornhub removed over 10.6 million videos, reducing its library from 13.8 million videos to roughly 3 million videos in a matter of hours.[100] This was followed by the temporary suspension of downloading, limiting content uploads to verified users only, and expanding content moderation practices. Despite the alleged increase in moderation practices, what Pornhub executives referred to as "the most

porn; Cole, "AI-Generated Porn Makers Have Been Kicked Off Their Favorite Host"; Charlie Wetzel, "Pornhub Banned Deepfake Celebrity Sex Videos, But The Site Is Still Full Of Them," *BuzzFeed*, April 18, 2018, https://www.buzzfeednews.com/article/charliewarzel/pornhub-banned-deepfake-celebrity-sex-videos-but-the-site; Wakefield, "MP Maria Miller Wants AI 'nudifying' Tool Banned"; Thomas McMullan, "Pornhub And Reddit Ban AI-Generated Deepfake Porn, Say It Is Non-Consensual," *Alphr*, February 7, 2018, https://www.alphr.com/life-culture/1008423/pornhub-and-reddit-ban-ai-generated-deepfake-porn-say-it-is-non-consensual/.

[99] Nicholas Kristoff, "The Children of Pornhub," *The New York Times*, December 4, 2020, Opinion Editorial, https://www.nytimes.com/2020/12/04/opinion/sunday/pornhub-rape-trafficking.html.

[100] Dawn Hawkins, "Millions of Abuse Videos Removed in Hours! NCOSE Named as Major Reason.," NCOSE, December 14, 2020, https://endsexualexploitation.org/articles/millions-of-abuse-videos-removed-in-hours-ncose-named-as-major-reason/.

comprehensive safeguards in user-generated platform history,"[101] Pornhub knowingly and willingly profited from content documenting the sex trafficking, rape, drugging, coercion, and physical abuse of multiple women from two separate Content Partners: GirlsDoPorn and Czech Casting.[102]

GirlsDoPorn, a long-time Content Partner and casting couch pornography company was found guilty of sex trafficking more than 40 women, some of which were underage, and selling their content on Pornhub.[103] Pornhub was aware of the company's indictment for sex trafficking for five months prior to the removal of their official channel, but some of these videos remained accessible on Pornhub until late December 2020, after the platform's purge of almost 80% of their content.[104]

Czech Casting was part of the largest pornography company in the Czech Republic and was another long-time Content Partner of Pornhub and its parent company MindGeek. Czech Casting was only removed from Pornhub after nine individuals associated with the channel were arrested for human trafficking, coercion, and rape in July 2020.[105] The Czech Casting channel had accumulated more than 79 million views on Pornhub "and boasted '[t]he largest casting on Earth!' The owners of this channel had several channels on Pornhub collectively garnering almost 1 billion views."[106] This case

[101] Pornhub, "Pornhub Announces Major Policy Updates to Safeguard Platform," Pornography, December 14, 2020, https://www.pornhub.com/press/show?id=2132.
[102] NCOSE, Doe.v.MindGeek, No. 7:21-cv-00220-LSC.
[103] NCOSE; Hawkins, "Millions of Abuse Videos Removed in Hours! NCOSE Named as Major Reason."
[104] NCOSE, Doe.v.MindGeek, n.d.
[105] Samantha Cole, Emanuel Maiberg, and Anna Koslerova, "'Frankenstein's Monster:' Images of Sexual Abuse Are Fueling Algorithmic Porn," *Motherboard*, November 10, 2020, https://www.vice.com/en/article/akdgnp/sexual-abuse-fueling-ai-porn-deepfake-czech-casting-girls-do-porn; NCOSE, Doe.v.MindGeek, n.d.
[106] NCOSE, Doe.v.MindGeek, n.d.; Jewell Baraka, "BREAKING: Young Women Trafficked onto Pornhub Via Fake Modeling Ads," Exodus Cry, July 24, 2020, https://exoduscry.com/articles/breaking-young-women-trafficked-onto-pornhub-via-fake-modeling-ads/.

was strikingly similar to that of GirlsDoPorn in which pornography producers lied, manipulated, coerced, and abused women into engaging in sex acts on camera and selling them to mainstream pornography websites for profit.[107]

Additionally, victims from both GDP and Czech Casting were subjected to years of large-scale doxing schemes, in which channels encouraged users to identify the women in the videos, post their identifying information, and harass them online and offline.[108] This is consistent with previous research demonstrating the permeation of offline harms in online spaces, particularly gendered-sexual violence. The darkest, most painful experiences of their lives exist infinitely online for a company's profit and sexual gratification of others.[109]

In November 2020, Motherboard investigators discovered of an entire database containing the images and videos of victims from Czech Casting and GirlsDoPorn that was "circulating in deepfake communities online."[110] This dataset was found by u/GeneratedPorn, a PhD student who used the dataset like many other community members to generate "new pornography" from the Czech Casting and GirlsDoPorn content.[111] At the time of its creation, Pornhub hosted the largest repositories of Czech

[107] NCOSE, Doe.v.MindGeek, n.d.
[108] Cole, Maiberg, and Koslerova, "'Frankenstein's Monster:' Images of Sexual Abuse Are Fueling Algorithmic Porn," November 10, 2020; NCOSE, Doe.v.MindGeek, n.d.
[109] McVey, Gurrieri, and Tyler, "The Structural Oppression of Women by Markets"; Langlois and Slane, "Economies of Reputation"; Jørgensen and Demant, "Shame, Shaming and Economy: A Theory of Image-Based Sexual Abuse Within Different Online Sharing Environments," March 20, 2021; Martha McCaughey and Jill Cermele, "Violations of Sexual and Information Privacy: Understanding Dataraid in a (Cyber)Rape Culture," *Violence Against Women* 28, no. 15–16 (December 2022): 3955–76, https://doi.org/10.1177/10778012211070316; Brandon Sparks, "A Snapshot of Image-Based Sexual Abuse (IBSA): Narrating a Way Forward," *Sexuality Research and Social Policy*, April 27, 2021, https://doi.org/10.1007/s13178-021-00585-8; Macdonald, "Desire for Data: PornHub and the Platformization of a Culture Industry," 2019.
[110] Cole, Maiberg, and Koslerova, "'Frankenstein's Monster:' Images of Sexual Abuse Are Fueling Algorithmic Porn," November 10, 2020.
[111] Cole, Maiberg, and Koslerova.

Casting and GirlsDoPorn content, both of which had revenues dependent on outsourcing their content to third-party content hosting platforms and monetization partnerships such as with Pornhub.[112] Additionally, the download feature was still available when the data set was created.[113]

Czech Casting and GDP film scenes from the same type of angels, using the same backgrounds, and even take a series of photographs of the women in various stages of undress.[114] Close-ups of their genitalia, nipples, facial features, and full-body nude shots are also taken.[115] The rise of virtual reality pornography led Czech Casting to start creating interactive VR content, requiring 360 views of the women posing.[116] The large quantity, the unique algorithm in which content is produced, and the structural similarity between casting couch pornography provided creators with 'the perfect dataset' to train deepfake technology.[117]

Much like that of u/deepfakes, u/GeneratedPorn trained the dataset by modifying a deepfake code found on GitHub, an open-sourced repository. Importantly, akin to u/deepfakes' position as an 'interested programmer,' the creator of this dataset was a PhD student who was simply interested in machine learning:

> This all started as a quest for me to learn how all of this cool tech worked but then I ended up pivoting into the porn generation stuff as I thought it was a cool concept, especially after watching the movie *Her*.[118]

[112] NCOSE, Doe.v.MindGeek, n.d.; McVey, Gurrieri, and Tyler, "The Structural Oppression of Women by Markets"; Macdonald, "Desire for Data: PornHub and the Platformization of a Culture Industry," 2019.
[113] Pornhub, "Pornhub Announces Major Policy Updates to Safeguard Platform."
[114] Cole, Maiberg, and Koslerova, "'Frankenstein's Monster:' Images of Sexual Abuse Are Fueling Algorithmic Porn," November 10, 2020.
[115] Cole, Maiberg, and Koslerova.
[116] Cole, Maiberg, and Koslerova.
[117] Cole, Maiberg, and Koslerova.
[118] Cole, Maiberg, and Koslerova.

In one Czech Casting video, a woman starts to cry during filming and asks the man to stop. When he does, the camera zooms in on the woman to show that she is bleeding. The man hands her a towel and tells her to clean it up.[119] Investigators at Motherboard confirmed during their investigation that this video was part of the deepfake data set being used to generate pornography.[120] It is important to highlight the lack of consideration and blatant disregard for the ethics of creating a tool powerful enough to generate sexual deepfakes as well as sexual deepfakes based on actual experiences of sex trafficking, rape, and drugging.

Image-based sexual abuse deeply impacts and affects every aspect of victims' lives, physically, emotionally, and socially.[121] One study found that 51% of victims of non-consensual dissemination of sexually explicit media (revenge pornography) had suicidal thoughts/contemplated suicide, 93% reported their experienced caused severe psychological and emotional damage, 55% feared their reputation was ruined, and 57% were afraid for their professional advancement and employability.[122] Additionally, studies have demonstrated how rape, technology-facilitated sexual violence, and image-based sexual abuse impact women differently in that it uniquely results in economic

[119] Cole, Maiberg, and Koslerova, "'Frankenstein's Monster:' Images of Sexual Abuse Are Fueling Algorithmic Porn," November 10, 2020.
[120] Cole, Maiberg, and Koslerova, "'Frankenstein's Monster:' Images of Sexual Abuse Are Fueling Algorithmic Porn," November 10, 2020.
[121] DeKeseredy and Schwartz, "Thinking Sociologically About Image-Based Sexual Abuse"; Jørgensen and Demant, "Shame, Shaming and Economy: A Theory of Image-Based Sexual Abuse Within Different Online Sharing Environments," March 20, 2021; Henry, Flynn, and Powell, "Technology-Facilitated Domestic and Sexual Violence"; Yanet Ruvalcaba and Asia A. Eaton, "Nonconsensual Pornography among U.S. Adults: A Sexual Scripts Framework on Victimization, Perpetration, and Health Correlates for Women and Men.," *Psychology of Violence* 10, no. 1 (January 2020): 68–78, https://doi.org/10.1037/vio0000233; Henry and Flynn, "Image-Based Sexual Abuse," December 2019.
[122] Cyber Civil Rights Initiative, "End Revenge Porn Campaign," Statistics, 2014, https://www.cybercivilrights.org/wp-content/uploads/2014/12/RPStatistics.pdf.

consequences.[123] This was true in the case of one Czech Casting woman who was fired from her teaching job after her students found her video. When she attempted to speak out about her victimization by the casting company, people were only further compelled to find her video.

Considering the ubiquity of non-consensual and violent themed pornography, content depicting actual acts of violence goes unnoticed, dismissed as fake or part of a 'sexual fantasy,' such as through titles insinuating violence, non-consensual acts, 'step family fantasy' (the theme of one of the very first sexual deepfakes),[124] fake spy cam, fake hostel, fake taxi, and fake casting couch pornography, further contributing to rape myth narratives, misogyny, racism, reduced support for victims, the normalization of sexual violence, and the commodification of non-consensual content.

Importantly, Pornhub's business model is built on maximizing views and traffic to their platform. Much like YouTube, Pornhub is a tube site in which most of its revenue is generated from advertising.[125] In 2021, former CEO Feras Antoon estimated that roughly 51% of Pornhub's revenue was generated from advertising, claiming, "We are an ad-supported platform. That's how we make our revenues. That's how Pornhub makes its revenues."[126] However, according to a 2018 news article, this number is actually

[123] Rebecca M. Loya, "Rape as an Economic Crime: The Impact of Sexual Violence on Survivors' Employment and Economic Well-Being," *Journal of Interpersonal Violence* 30, no. 16 (October 1, 2015): 2793–2813, https://doi.org/10.1177/0886260514554291; Langlois and Slane, "Economies of Reputation"; Uhl et al., "An Examination of Nonconsensual Pornography Websites," February 2018; Volkert et al., "Understanding the Illicit Economy for Synthetic Media," n.d.; Henry and Flynn, "Image-Based Sexual Abuse," December 2019.
[124] Cole, "AI-Assisted Fake Porn Is Here and We're All Fucked"; Cole, Maiberg, and Koslerova, "'Frankenstein's Monster:' Images of Sexual Abuse Are Fueling Algorithmic Porn," November 10, 2020.
[125] NCOSE, Doe.v.MindGeek, n.d.
[126] NCOSE, "50% of Pornhub's Revenue Comes from Ads," April 7, 2021, https://endsexualexploitation.org/articles/50-of-mindgeek-pornhubs-parent-company-revenue-comes-from-ads-help-contact-their-top-advertisers/.

significantly higher, estimating that "In 2018, MindGeek generated $213 million in advertising, and only $52 million in premium subscriptions."[127] This is crucial, considering that sexual deepfakes and related ads can still be found on Pornhub today.

Recent litigation revealed that Pornhub could maintain copious amounts of illicit and non-consensual content on its platform by banning specific keywords and replacing them with similar terms.[128] These techniques are the same ones that enabled investigative journalists to easily locate over 70 sexual deepfakes months after Pornhub allegedly banned this content.[129] Although Pornhub publicly banned deepfakes in February 2018, becoming the only mainstream pornography platform to do so, sexual deepfake videos continued to proliferate, amassing tens of millions of views, underscoring the potential for monetization opportunities.[130]

A team of investigative journalists uncovered Pornhub's deceptive moderation and business practices revealing the platform's purposeful placing of advertisements before some of the most popular deepfake videos, directly profiting from non-consensual content. After clicking through some deepfake videos, investigators were recommended more deepfakes, suggesting that Pornhub's algorithms actively promote content from "categories that the platform deems non-consensual to users on its homepage."[131] Further,

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[127] Martin Patriquin, "Credit-Card Companies Still Processing Pornhub Advertising Buys," *Montreal Gazzette*, January 24, 2022, https://montrealgazette.com/news/local-news/credit-card-companies-still-processing-pornhub-advertising-buys.
[128] NCOSE, Doe.v.MindGeek, n.d.
[129] Wetzel, "Pornhub Banned Deepfake Celebrity Sex Videos, But The Site Is Still Full Of Them."
[130] Bryan Clark, "Pornhub Promised to Ban 'Deepfakes' Videos. and It Failed Miserably.," *The Next Web (TNW)*, December 10, 2018, https://thenextweb.com/news/pornhub-promised-to-ban-deepfakes-videos-and-it-failed-miserably; Wetzel, "Pornhub Banned Deepfake Celebrity Sex Videos, But The Site Is Still Full Of Them."
[131] Wetzel, "Pornhub Banned Deepfake Celebrity Sex Videos, But The Site Is Still Full Of Them."

Pornhub's permittance and promotion of deepfakes was found to have created "secondary markets" in which users would advertise the creation and purchase of deepfake videos:

> One account uploading fake celebrity videos and allegedly located in Russia directed visitors to its deepfakes store and invited them to connect via the secure messaging app Telegram. "What we have for sale: 500 deep fakes and number is growing you can purchase them one by one or in one full pack with a big discount," the account read before advertising secondary services, including "access to private forums," a "guide on making deep fakes," and a tutorial on "how to make money selling deep fakes."[132]

Some users strategically advertised their 'products and services' in the opening seconds of their deepfake videos on Pornhub, calling for interested viewers to purchase personalized deepfakes or tutorials for "DIY" deepfakes using cryptocurrency.[133] Users were encouraged to go to the seller's website or connect on encrypted messaging platforms such as Telegram.[134] Users were encouraged to go to the seller's website or connect on encrypted messaging platforms such as Telegram. It was eerily reminiscent of the 'nudifying' bots found at the center of a deepfake ecosystem on Telegram and the sexual deepfake community, Unstable Diffusion, that accepts member 'donations' of nude women to assist in compiling their training data set.[135] These communities are fueled by open-sourced repositories such as GitHub, where users can access coding for decentralized deepfake technology that can be replicated, modified, shared, and monetized.

The image below was found using related keyword searches on Pornhub. It was uploaded by a verified user on March 12, 2023, and garnered over 2.1K views at the time

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[132] Wetzel.
[133] Wetzel.
[134] Wetzel.
[135] Kyle Wiggers and Amanda Silberling, "Meet Unstable Diffusion, the Group Trying to Monetize AI Porn Generators," *TechCrunch+*, November 17, 2022, https://techcrunch.com/2022/11/17/meet-unstable-diffusion-the-group-trying-to-monetize-ai-porn-generators/.; Ajder, Patrini, and Cavalli, "Automating Image Abuse: Deepfake Bots on Telegram," October 2020.

this screenshot was taken. The video contained over six different Traffic Junky placed advertisements between the various rotating banner ads, side bar ads, and ads that would appear upon pausing the video. Every ad was marked in the top right corner by the Traffic Junky logo, symbolizing Pornhub as a complicit actor in the monetization of non-consensual and exploitative content.

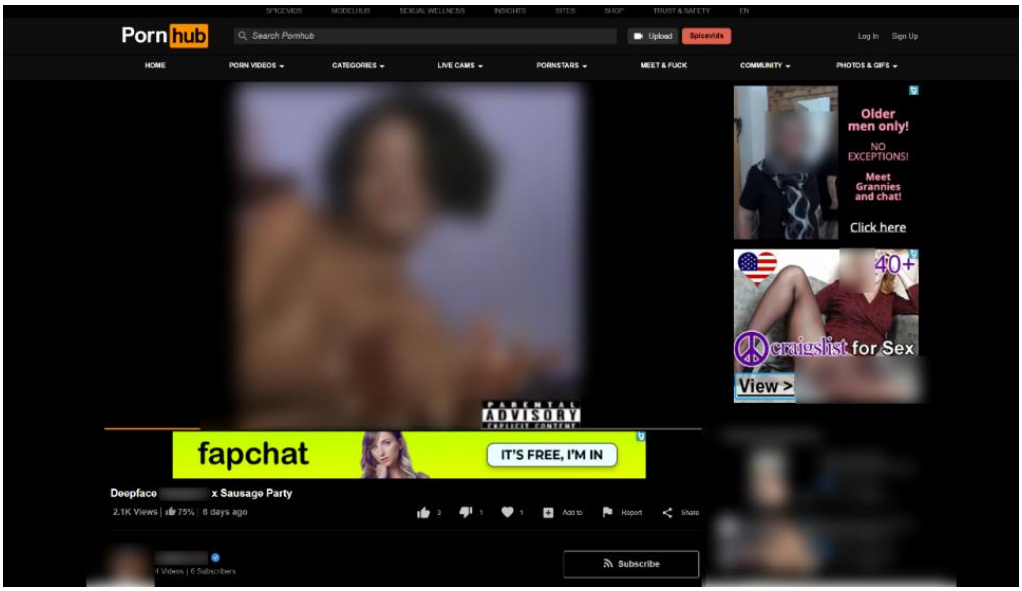


Figure 3. Sexual Deepfake on Pornhub[136]

In January 2023, Twitch streamer Atrioc was exposed for viewing sexual deepfakes of other female Twitch streamers, in which he claims he was led to the content from an ad on Pornhub.[137] As seen in Figure 2, Github and Pornhub were two of the top ten referral sites to Mr.Deepfakes from January 2023-Februry 2023. Additionally, in February 2023, Trafficjunky was listed as one of the top advertisers for Mr.DeepFakes.

[136] Uploaded by Verified User, "Deepface [Celebrity Name] x Sausage Party," Pornography, Pornhub, March 12, 2023.
[137] John Rigolizzo, "Twitch Streamer Caught Viewing AI-Generated 'Deepfake' Porn Of Female Streamers," *Daily Wire+*, February 1, 2023, https://www.dailywire.com/news/twitch-streamer-caught-viewing-ai-generated-deepfake-porn-of-female-streamers.

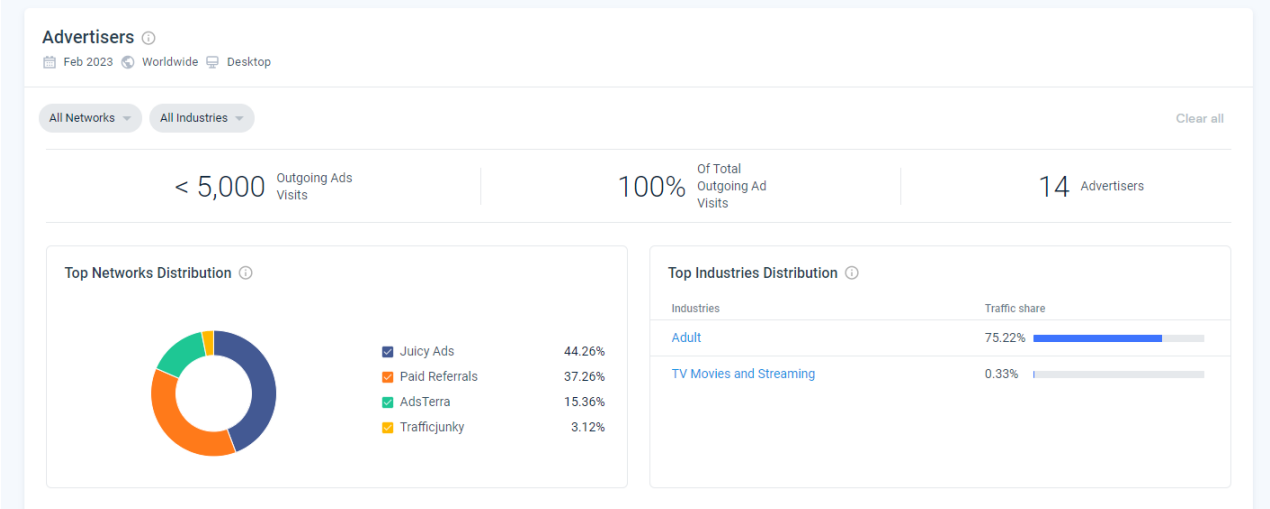


Figure 4. Trafficjunky Ads on Mr.Deepfakes[138]

Simply Googling Mr.Deepfakes videos on Pornhub returns dozens of results. It is evident through evidence such as this that despite it being a violation of their non-consensual content policies, Pornhub is still actively promoting and monetizing sexual deepfakes.

[138] SimilarWeb, "Top Advertisers to Mr.Deepfakes in February 2023," SimilarWeb + Mr.DeepFakes, February 2023, https://pro.similarweb.com/#/digitalsuite/websiteanalysis/referrals/incoming-traffic/*/999/2m?webSource=Total&key=mrdeepfakes.com.

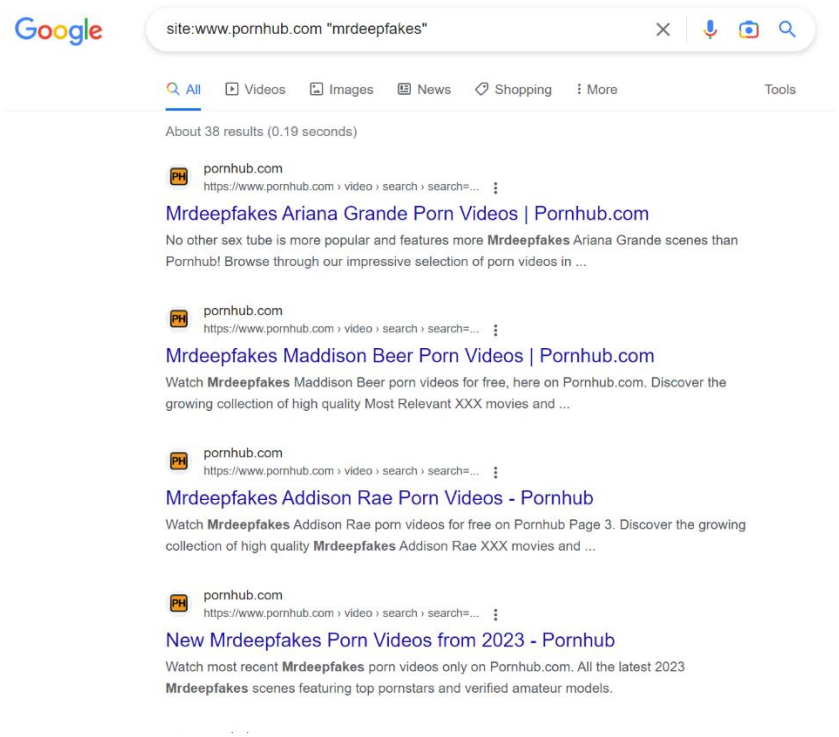


Figure 5. Searching Mr.Deepfakes on Pornhub[139]

Pornhub's advanced search engine optimization (SEO) also drives traffic to their site, returning significant profit even if links are no longer active. Pornhub may remove non-consensual content, but they leave links to removed content live as well as their keywords and tags, allowing a simple Google search to return links to removed content. Despite the public scrutiny and legal implications, Pornhub still participates in this behavior.

[139] "Google 'Dorking,' 'site: www.Pornhub.com 'MrDeepFakes','" Pornhub + Mr.DeepFakes, 2023.

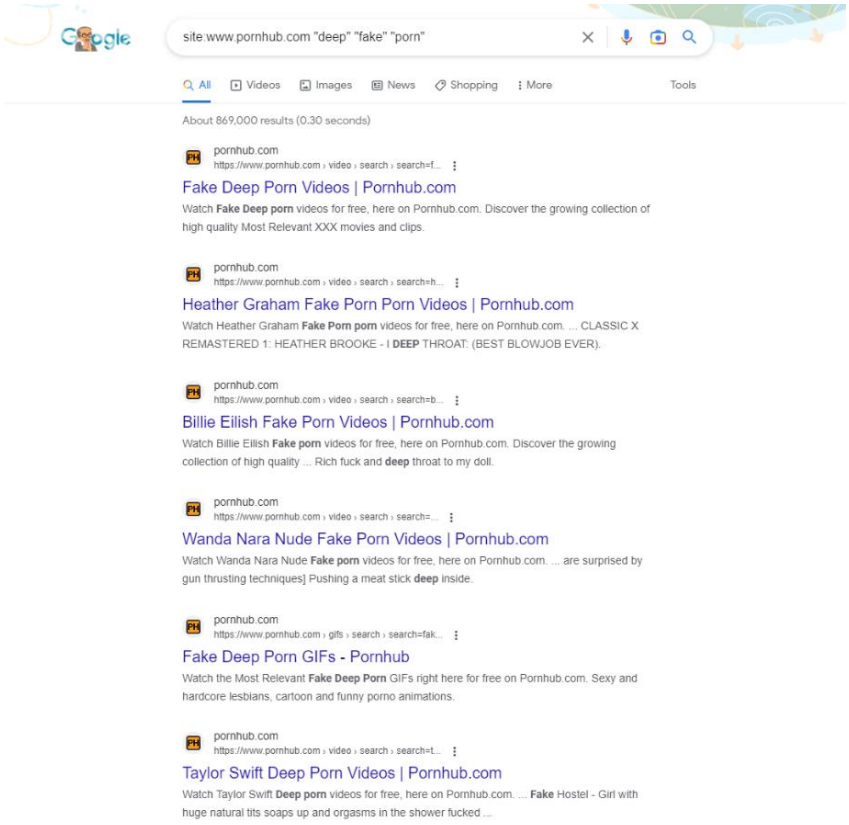


Figure 6. Searching for Expired Links on Pornhub[140]

There is a clear and distinct lineage in which sexual violence has permeated online spaces through the elevation and normalization of deceptive business practices utilized by the pornography industry. Content depicting real rape, sex trafficking, and non-consensually filmed and shared imagery, in addition to the rise of sexual deepfakes, it is clear that sexual violence is no longer restricted to offline behaviors but also defines our online spaces, providing a sense of fluidity between real and virtual harms in which they can no longer be distinguished or thought of as distinct and separate entities. The democratization of deepfake technology has been made possible through its early acceptance by the pornography industry as well as using open-sourced repositories,

[140] "Google 'Dorking,' 'site: Www.Pornhub.Com 'Mrdeepfakes'.'"

lowering the barrier of accessibility, and increasing simplicity to the point in which any smartphone user can create a realistic sexual deepfake within seconds.

Embodied Harms

Recent literature has explored the embodied harms of technology-facilitated sexual violence and image-based sexual abuse, dismantling false dichotomies of physical and virtual harms that only five years ago dominated academic literature and societal understandings.[141] Researchers have framed virtual harms as having real and tangible effects on physical and psychological beings "and are not tangential, but increasingly central to how individuals experience and live their everyday lives."[142] Necessary now, is the extension of this conceptualization of the embodied harm perpetuated by sexual deepfakes as they exist along the spectrum of synthetic sexually explicit media, as a qualitatively gendered phenomenon.

Traditional forms of sexual violence were limited by geographic location, accessibility/opportunity to victim(s), and time constraints of traditional forms of sexual violence; however, this is no longer the reality.[143] The anonymity, accessibility, and

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[141] Henry and Powell, "Embodied Harms"; Fox, Bailenson, and Tricase, "The Embodiment of Sexualized Virtual Selves"; Powell and Henry, "Technology-Facilitated Sexual Violence Victimization"; Bates, "Revenge Porn and Mental Health," January 2017; Tahlee Mckinlay and Tiffany Lavis, "Why Did She Send It in the First Place? Victim Blame in the Context of 'Revenge Porn,'" *Psychiatry, Psychology, and Law* 27, no. 3: 386–96, accessed February 3, 2022, https://doi.org/10.1080/13218719.2020.1734977; McVey, Gurrieri, and Tyler, "The Structural Oppression of Women by Markets"; Öhman, "Introducing the Pervert's Dilemma"; Harder, "Re-Faced and Pornified—a Visual, Narrative Analysis of Sexual Scripts in Police Cases of Image-Based Abuse," July 5, 2022.

[142] Henry and Powell, "Embodied Harms."

[143] Majid Yar, "E-Crime 2.0: The Criminological Landscape of New Social Media," *Information & Communications Technology Law* 21, no. 3 (October 2012): 207–19, https://doi.org/10.1080/13600834.2012.744224; Majid Yar, "The Policing of Internet Sex Offences: Pluralised Governance versus Hierarchies of Standing," *Policing and Society* 23, no. 4 (December 2013): 482–97, https://doi.org/10.1080/10439463.2013.780226; Yar and Drew, "Image-Based Abuse, Non-Consensual Pornography, Revenge Porn"; Yar, "The Novelty of 'Cybercrime': An Assessment in Light of Routine Activity Theory."

affordability of the Internet not only make it a unique tool for facilitating historical forms of sexual violence but also for reinventing historical forms of sexual violence against women, such as through sexual deepfakes.

Despite recent progress in understanding between embodied harms, such as through the creation of and implementation of new legislation, detection technologies to combat synthetic media abuse, and refining language and terminology to frame abuses appropriately, the perpetuation of the false dichotomy between "real" and "virtual" harms is still violently present. [144] Such as what was experienced by deepfake survivor Maya Higa:

> In 2018, I was inebriated at a party and I was used for a man's sexual gratification without my consent. Today, I have been used by hundreds of men for sexual gratification without my consent. The world calls my 2018 experience rape. The world is debating over the validity of my experience today. The debate over our experience as women in this is, not shockingly,

[144] Asia A. Eaton and Clare McGlynn, "The Psychology of Nonconsensual Porn: Understanding and Addressing a Growing Form of Sexual Violence," *Policy Insights from the Behavioral and Brain Sciences* 7, no. 2 (October 2020): 190–97, https://doi.org/10.1177/2372732220941534; Nicola Henry, Anastasia Powell, and Asher Flynn, "Not Just 'Revenge Pornography': Australians' Experiences of Image-Based Abuse A SUMMARY REPORT," 2018, https://doi.org/10.13140/RG.2.2.29903.59045; Kelley R. Holladay, W. Bryce Hagedorn, and David Boote, "The Influence of Cyber-Sexual Assault on the Mental Health Outcomes of Survivors," *Journal of Counseling Sexology & Sexual Wellness: Research, Practice, and Education*, January 11, 2021, 93–103, https://doi.org/10.34296/02021026; Jin Ree Lee and Steven Downing, "An Exploratory Perception Analysis of Consensual and Nonconsensual Image Sharing" 2 (n.d.): 22; Clare McGlynn et al., "'It's Torture for the Soul': The Harms of Image-Based Sexual Abuse," *Social & Legal Studies* 30, no. 4 (August 2021): 541–62, https://doi.org/10.1177/0964663920947791; McGlynn and Rackley, "Image-Based Sexual Abuse," 2017; McGlynn, Rackley, and Houghton, "Beyond 'Revenge Porn'"; Erika Rackley et al., "Seeking Justice and Redress for Victim-Survivors of Image-Based Sexual Abuse," *Feminist Legal Studies* 29, no. 3 (November 2021): 293–322, https://doi.org/10.1007/s10691-021-09460-8; Henry, Flynn, and Powell, "Technology-Facilitated Domestic and Sexual Violence"; Henry and Powell, "Embodied Harms"; Robert Chesney and Danielle Keats Citron, "Deep Fakes: A Looming Challenge for Privacy, Democracy, and National Security," *SSRN Electronic Journal*, 2018, https://doi.org/10.2139/ssrn.3213954; Danielle Keats Citron, *Hate Crimes in Cyberspace* (Cambridge, Massachusetts ; London, England: Harvard University Press, 2014); Danielle Keats Citron, "Privacy Injunctions," *Emory Law Journal* 71, no. 5 (2022): 955–83; Antoinette Raffaela Huber, "Image-Based Sexual Abuse: Online Communities and the Broader Misogynistic Landscape," *The British Journal of Criminology*, September 14, 2022, azac067, https://doi.org/10.1093/bjc/azac067; McGlynn and Rackley, "Image-Based Sexual Abuse," 2017; Rachel Brydolf-Horwitz, "Embodied and Entangled: Slow Violence and Harm via Digital Technologies," *Environment and Planning C: Politics and Space* 40, no. 2 (March 1, 2022): 391–408, https://doi.org/10.1177/2399654418791825; Asher Flynn, Anastasia Powell, and Sophie Hindes, "Technology-Facilitated Abuse: A Survey of Support Services Stakeholders," *ANROWS*, February 2021, 60.

> amongst men. None of you should care or listen to what any male streamer's "take" is on how we feel.
>
> I founded a non-profit animal sanctuary at 22 years old. I have raised over $1 million for conservation work at 24 years old. I have created zero sexual content in my three years on Twitch. Despite this, my face was stolen so men could make me into a sexual object to use for themselves. If anyone doesn't think it's a big deal that MY NAME is in headlines where thousands of people are commenting on the sexualization of MY BODY against MY WILL, you are the problem.[145]

This results in limited understanding of how sexual deepfakes are experienced, denying victims complete "permission" to heal from harm perceived as nonexistent. Individuals like 'Gorkem,' a 'personalized' deepfake creator encourage such problematic notions: "I can see how some women would have psychological harm from this, but on the other hand, they can just say, "It's not me, this has been faked, I can't suffer any damages from this." I think they should just recognise that and get on with their day."[146] The owner of the most prolific deepfake website, Mr. Deepfakes in the United States, similarly shared Gorkem's sentiments: "I think that as long as you're not trying to pass it off as a real thing, that should really matter because it's basically fake. I don't really feel that consent is required – it's a fantasy, it's not real."[147]

While this dichotomy could be intentionally or unintentionally perpetuated, it is important to recognize that our society is increasingly digitized. Our virtual selves are no longer distinct from our physical selves but act as an extension of our corporeal beings, in which traumatic embodiment does not always result from physical harm.[148] Survivors,

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[145] Maya (@mayahiga), "Deepfake Survivor Quote.," *Twitter*, February 1, 2023, https://twitter.com/mayahiga/status/1620586546083803136?s=20.
[146] Sarah McDermott and Jess Davies, "Deepfaked: 'They Put My Face on a Porn Video,'" *BBC News*, October 21, 2022, https://www.bbc.com/news/uk-62821117; *Deepfake Porn: Could You Be Next?*
[147] McDermott and Davies, "Deepfaked: 'They Put My Face on a Porn Video'"; *Deepfake Porn: Could You Be Next?*
[148] Henry and Powell, "Embodied Harms."

advocates, and researchers have begun to emphasize this, and as this thesis adopts a survivor-centered approach, it is important that we not only listen but we *hear* survivor voices such as those outlined by Maya.

Liz Kelly outlined these concerns in her book *Surviving Sexual Violence* (1988), in which women who had experienced sexual harassment or received unsolicited obscene phone calls were hesitant to define their experiences as abuse even though they had admittedly suffered emotional, physical, and social harm.[149] Unfortunately, thirty-five years later, Maya problematizes the same notion with sexual deepfakes, demonstrating a stark comparison between the progress and awareness within the legal system and the overt displays of toxic masculinity, victim-blaming, and slut-shaming women experienced online, which invalidates their experiences as abuse. This is consistent with commentary by Rachel Wells, founder of Women Against Revenge Porn, arguing that language and careful articulation of naming abuse matters:

> It has been called 'revenge porn,' 'involuntary pornography,' and 'nonconsensual pornography.' But using these terms is like calling rape 'involuntary sex.' It simply doesn't reflect the emotional, psychological, and physical costs. Revenge porn is cyber rape, and we should call it as such.[150]

Similar to the experiences of victim-survivors of traditional sexual violence, victim-survivors of image-based sexual abuse similarly report experiences of public shaming, humiliation, and trauma that are exacerbated by feelings of loss of bodily control, in addition to negative health consequences and development of poor coping

[149] Kelly, "The Continuum of Sexual Violence," 1987; Kelly, *Surviving Sexual Violence*, 1988.
[150] FTND, "Their Private Videos Were Nonconsensually Uploaded to Pornhub, and Now These Women Are Fighting Back," Fight The New Drug, Accessed March 3, 2023, https://fightthenewdrug.org/their-private-photos-were-shared-non-consensually-to-pornhub-and-now-these-women-are-fighting-back/.

mechanisms.[151] The parallels between experiences of online and offline victimization are perfectly captured by Henry and Powell (2015), "[h]arms in the so-called "virtual" world can have real effects, both bodily and psychical, and are not tangential, but increasingly central, to how individuals experience and live their everyday lives."[152] This is especially true for women as misogyny and hierarchical gender relations have been constructed in similar, if not identical, ways as they are in the physical world. This is not to say that experiences of traditional sexual violence are equivalent to those of online sexual violence. Rather, it is to demonstrate the extent and severity of harm resulting from experiences of online sexual violence that demand equal amounts of consideration, understanding, and recognition as a serious form of sexual violence.[153] Sheila Brown (2006) perfectly captures these sentiments, ". . . endlessly circulating, shifting, pixels affect real lives . . . real humiliations and human pains are generated; and real relations of (patriarchal) power and exploitation are reproduced and reinforced."[154] Judy Wajcman, a technofeminist scholar argues that one way in which this occurs is because "traditional gender hierarchies and power dynamics are being replicated in and through digital technologies."[155] This has resulted in the diversification in which technology has become a powerful tool of violence and oppression against gendered bodies by motivated

[151] Bates, "Revenge Porn and Mental Health," January 2017; Ruvalcaba and Eaton, "Nonconsensual Pornography among U.S. Adults"; McGlynn, Rackley, and Houghton, "Beyond 'Revenge Porn'"; McGlynn et al., "'It's Torture for the Soul,'" August 1, 2021; Eaton and McGlynn, "The Psychology of Nonconsensual Porn"; Henry, Powell, and Flynn, "Not Just 'Revenge Pornography'"; McGlynn and Rackley, "Image-Based Sexual Abuse," 2017.
[152] Henry and Powell, "Embodied Harms."
[153] Henry and Powell; Ruvalcaba and Eaton, "Nonconsensual Pornography among U.S. Adults."
[154] Henry and Powell, "Embodied Harms"; Brown, "Integration by Way of the Criminology of Hybrids."
[155] Powell, Flynn, and Sugiura, *The Palgrave Handbook of Gendered Violence and Technology*; Powell and Henry, *Sexual Violence in a Digital Age*; Rosewarne, "Abuse as Artefact: Understanding Digital Abuse of Women as Cultural Informant"; Wajcman, *TechnoFeminism*; Wajcman, "Addressing Technological Change."

offenders and willing individuals, directly challenging the utopian vision of detraditionalization and disembodiment predicted by early cyberfeminists.[156]

Situating Sexual Deepfakes Along the Continuum of Sexual Violence

McGlynn (2017) establishes "that there is a continuum of practices that together form our concept of image-based sexual abuse; and, secondly, that image-based sexual abuse is on a continuum with other forms of sexual violence."[157] As its own continuum, image-based sexual abuse is representative of "all forms of the non-consensual creation and/or distribution of private sexual images." It exists along the larger continuum of sexual violence because it shares basic common characteristics with physical sexual assault defined by Kelly in 1988.[158] McGlynn (2017) found that women experience IBSA as a form of sexual assault as well as the harms delineated by Kelly (1988), "abuse, coercion, intrusion, threat, and force."[159] Because the continuum of IBSA was created as

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[156] Wajcman, "Addressing Technological Change"; Wajcman, *TechnoFeminism*; Henry, Flynn, and Powell, "Technology-Facilitated Domestic and Sexual Violence"; Henry and Powell, "Embodied Harms"; Kelley Holladay, "An Investigation of the Influence of Cyber-Sexual Assault on the Experience of Emotional Dysregulation, Depression, Post Traumatic Stress Disorder, and Trauma Guilt.," n.d., 391; Holladay, Hagedorn, and Boote, "The Influence of Cyber-Sexual Assault on the Mental Health Outcomes of Survivors," January 11, 2021; Maddocks, "'A Deepfake Porn Plot Intended to Silence Me'"; Olusesan Ayodeji Makinde et al., "The Nature of Technology-Facilitated Violence and Abuse among Young Adults in Sub-Saharan Africa," in *The Emerald International Handbook of Technology-Facilitated Violence and Abuse*, ed. Jane Bailey, Asher Flynn, and Nicola Henry (Emerald Publishing Limited, 2021), 83–101, https://doi.org/10.1108/978-1-83982-848-520211005; Mckinlay and Lavis, "Why Did She Send It in the First Place?"; Kathie Reveley, "'It's Been Devastating': An Interpretative Phenomenological Analysis of the Experience of Being Cyberstalked," n.d.; Ana Valentina Medeiros de Araújo et al., "Technology-Facilitated Sexual Violence: A Review of Virtual Violence against Women," *Research, Society and Development* 11, no. 2 (February 6, 2022): e57811225757, https://doi.org/10.33448/rsd-v11i2.25757; Manuel Gámez-Guadix et al., "Assessing Image-based Sexual Abuse: Measurement, Prevalence, and Temporal Stability of Sextortion and Nonconsensual Sexting ('Revenge Porn') among Adolescents," *Journal of Adolescence* 94, no. 5 (July 2022): 789–99, https://doi.org/10.1002/jad.12064; Yar, "The Novelty of 'Cybercrime': An Assessment in Light of Routine Activity Theory."

[157] McGlynn, Rackley, and Houghton, "Beyond 'Revenge Porn.'"

[158] Kelly, "The Continuum of Sexual Violence," 1987; Kelly, *Surviving Sexual Violence*, 1988.

[159] Liz Kelly, *Surviving Sexual Violence* (Minneapolis: University of Minnesota Press, 1988); Clare McGlynn, Erika Rackley, and Ruth Houghton, "Beyond 'Revenge Porn': The Continuum of Image-Based Sexual Abuse," *Feminist Legal Studies* 25, no. 1 (April 2017): 25–46, https://doi.org/10.1007/s10691-017-9343-2.

"sufficiently broad and flexible both to embrace new ways of perpetrating, and experiencing, these forms of abuse,"[160] and it is indicative of the non-consensual creation of "photoshopped" or "generated" sexually explicit/sexualized imagery, expanding the continuum of IBSA to include sexual deepfakes is plausible.

Further, based on the reports of sexual deepfakes victim-survivor experiences and limited literature on sexual deepfakes victim-survivor experiences, both of which demonstrate similarities to Kelly's (1988) conceptualization of the continuum of sexual violence through common characteristics including but not limited to: (i) abuse: "you've got a picture of my private area that obviously was never there before, it's still abuse. You're still abusing somebody, but it's, you're using technology to do it now.";[161] (ii) intimidation: "It was a massive nightmare...It was so much violation. It was so much fear. I obviously feared for my safety for a long time.";[162] (iii) intrusion: "…it impacts you emotionally, physiologically, professionally, in dating and relationships, in bloody every single factor of your life.";[163] and (iv) threat: "I have perpetrators who are still to this day are trying to reach out to me, doctoring images of me…and they're contacting me and they're showing me these goddam sites because they know that there's nothing that can be done to them."[164]

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[160] McGlynn, Rackley, and Houghton, "Beyond 'Revenge Porn': The Continuum of Image-Based Sexual Abuse"; Kelly, "The Continuum of Sexual Violence," 1987; Kelly, *Surviving Sexual Violence*, 1988.
[161] Kelly, *Surviving Sexual Violence*, 1988; Flynn et al., "Deepfakes and Digitally Altered Imagery Abuse," 1353.
[162] Kelly, *Surviving Sexual Violence*, 1988; Flynn et al., "Deepfakes and Digitally Altered Imagery Abuse," 1351.
[163] Kelly, *Surviving Sexual Violence*, 1988; Flynn et al., "Deepfakes and Digitally Altered Imagery Abuse," 1351.
[164] Kelly, *Surviving Sexual Violence*, 1988; Flynn et al., "Deepfakes and Digitally Altered Imagery Abuse," 1353.

Like traditional sexual violence and IBSA, victim-survivors of sexual deepfakes have also addressed the lack of legal recourse, especially when the perpetrator is unknown, "It's just such a situation where you are so powerless. ... If you're someone who doesn't know the perpetrator, there is no justice afforded to you, and there's no laws that can be handed down."[165] In the United States, like many other countries, federal synthetic media legislation is nonexistent. Only six states (California, Georgia, Florida, New York, Pennsylvania, and Texas) have synthetic media legislation, most of which require victims to prove a lack of consent and malicious intent by the perpetrator, rarely cover 'secondary' perpetrators (individuals who intentionally and maliciously share the imagery after the initial perpetrator), and cannot protect victims from websites who profit from the creation, distribution, and consumption of their abuse.[166] Additionally, synthetic media offenses are not covered under state "revenge pornography" laws, passed in 48 states and two territories. These similarly require victims to prove a lack of consent and malicious intent by the perpetrator.[167]

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[165] Flynn et al., "Deepfakes and Digitally Altered Imagery Abuse."

[166] Robert Chesney and Danielle Keats Citron, "Deep Fakes: A Looming Challenge for Privacy, Democracy, and National Security," *SSRN Electronic Journal*, 2018, https://doi.org/10.2139/ssrn.3213954; Lieutenant Frederick Dauer, "Law Enforcement in the Era of Deepfakes.," *Police Chief Magazine.*, no. Emeryville Police Department, California., accessed March 5, 2023, https://www.policechiefmagazine.org/law-enforcement-era-deepfakes/; Matthew Feeney, "Deepfake Laws Risk Creating More Problems Than They Solve," *Regulatory Transparency Project*, March 1, 2021, https://rtp.fedsoc.org/paper/deepfake-laws-risk-creating-more-problems-than-they-solve/; Eric Kocsis, "Deepfakes, Shallowfakes, and the Need for a Private Right of Action," *Dickinson Law Review (2017-Present)* 126, no. 2 (January 1, 2022): 621, https://ideas.dickinsonlaw.psu.edu/dlr/vol126/iss2/10; Douglas Harris, "Deepfakes: False Pornography Is Here and the Law Cannot Protect You," *Duke Law & Technology Review* 17, no. 1 (January 5, 2019): 99–127, https://scholarship.law.duke.edu/dltr/vol17/iss1/4; Matthew B Kugler and Carly Pace, "Deepfake Privacy: Attitudes and Regulation," *Northwestern University Law Review* 116, no. 3 (November 14, 2021), https://scholarlycommons.law.northwestern.edu/nulr/vol116/iss3/1/.

[167] Seth Fallik et al., "Revenge Porn: A Critical Content Analysis of the Nation's Laws and Reflection upon Social Science Research," *Criminology, Criminal Justice, Law & Society* 23, no. 1 (2022): 1–22, https://doi.org/10.54555/ccjls.4234.34102.

By framing sexual violence as a "social phenomenon that takes it meaning from social and historical context,"[168] and considering the current social climate of technological development and democratization of pornography, positing the plausibility that synthetic sexually explicit media, including sexual deepfakes similarly exist along the continuum of IBSA and Kelly's continuum of sexual violence.

[168] Kelly, "The Continuum of Sexual Violence," 1987; Kelly, *Surviving Sexual Violence*, 1988.

Chapter III.

Methodology and Current Study

Methodological Rationale

Through intersectional and technofeminist epistemologies, this study seeks to highlight the human cost of image-based sexual abuse, specifically regarding sexual deepfakes as a collectively qualitatively gendered phenomenon through purposeful-mixed sampling methods and Interpretative Phenomenological Analysis (IPA). IPA is a type of qualitative research analysis used in the social sciences that seeks to explore in detail how participants "make sense" and understand their lived experiences in the context of a particular phenomenon.[169]

IPA is a participant-oriented approach that provides participants with avenues to express themselves and their lived experiences openly and unobtrusively.[170] This type of analysis emphasizes that its central objective and motive are to explore and understand the lived experiences of the participants, aligning with the goals and purpose of this study. From an anthropological perspective, IPA is particularly useful when analyzing new or understudied phenomena and is especially useful when seeking to understand

[169] Catherine Marshall, Gretchen B. Rossman, and Gerardo L. Blanco, *Designing Qualitative Research* (SAGE Publications, 2021); Jonathan A Smith and Mike Osborn, "Interpretative Phenomenological Analysis," *Qualitative Psychology*, n.d.; Jonathan A Smith and Mike Osborn, "Interpretative Phenomenological Analysis as a Useful Methodology for Research on the Lived Experience of Pain," *British Journal of Pain* 9, no. 1 (February 2015): 41–42, https://doi.org/10.1177/2049463714541642; Jonathan A. Smith, "Evaluating the Contribution of Interpretative Phenomenological Analysis," *Health Psychology Review* 5, no. 1 (March 2011): 9–27, https://doi.org/10.1080/17437199.2010.510659.
[170] Alase, Abayomi. "The Interpretative Phenomenological Analysis (IPA): A Guide to a Good Qualitative Research Approach". *International Journal of Education and Literacy Studies* 5, no. 2 (2017): 9. https://doi.org/10.7575/aiac.ijels.v.5n.2p.9.

experiences of violence.[171] Because IPA studies aim to provide in-depth experimental accounts of the object of study, smaller samples are more favorable to ensure that sufficient attention to detail is given to understanding an individual's lived experience,[172] locating the in-depth exploration of the lived experiences of victim-survivors of sexual deepfakes as an optimal phenomenon for this type of methodology. This study follows Smith et al.'s (2009) description of IPA as a phenomenological, hermeneutic, and idiographic qualitative method.[173]

IPA is phenomenological because it sees individual experiences as meaningful and truthful representations of participants' realities. IPA is also consistent with its phenomenological roots, as the researcher aims to take the participants' side while examining their experiences from a higher level of interpretation and analysis.[174]

Methodologically, IPA utilizes a hermeneutic process in which the researcher seeks to gain access to what Smith refers to as the "insider's perspective"[175] and

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[171] Igor Pietkiewicz and Jonathan Smith, "A Practical Guide to Using Interpretative Phenomenological Analysis in Qualitative Research Psychology," *CPPJ* 20 (January 1, 2014): 7–14, https://doi.org/10.14691/CPPJ.20.1.7; Heidi Ashley, "Exploring Growth Outcomes in the Aftermath of Rape: An Interpretative Phenomenological Analysis," *PQDT - Global* (Psy.D., England, University of Surrey (United Kingdom), 2005), ProQuest Dissertations & Theses Global (2147811612), http://search.proquest.com.ezp-prod1.hul.harvard.edu/dissertations-theses/exploring-growth-outcomes-aftermath-rape/docview/2147811612/se-2?accountid=11311.

[172] B. Kennath Widanaralalage et al., "'I Didn't Feel I Was A Victim': A Phenomenological Analysis of the Experiences of Male-on-Male Survivors of Rape and Sexual Abuse," *Victims & Offenders* 17, no. 8 (November 17, 2022): 1147–72, https://doi.org/10.1080/15564886.2022.2069898; Smith and Osborn, "Interpretative Phenomenological Analysis as a Useful Methodology for Research on the Lived Experience of Pain"; Smith and Osborn, "Interpretative Phenomenological Analysis"; Smith, "Evaluating the Contribution of Interpretative Phenomenological Analysis."

[173] Jonathan A. Smith, Michael Howard Larkin, and Paul Flowers, "Interpretative Phenomenological Analysis: Theory, Method, and Research," *SAGE*, 2009.

[174] Smith and Osborn, "Interpretative Phenomenological Analysis"; Smith, "Evaluating the Contribution of Interpretative Phenomenological Analysis"; Isabella E. Nizza, Joanna Farr, and Jonathan A. Smith, "Achieving Excellence in Interpretative Phenomenological Analysis (IPA): Four Markers of High Quality," *Qualitative Research in Psychology* 18, no. 3 (July 3, 2021): 369–86, https://doi.org/10.1080/14780887.2020.1854404.

[175] Smith and Osborn, "Interpretative Phenomenological Analysis."

understand how the participant "interprets and rationalizes their own experiences"[176] as closely as possible. However, this is not done without complications as access depends on the researcher's own conceptions, which are also required to make sense of the participants' world through interpretative activity.[177] Thus, IPA is a two-stage process or a double hermeneutic in which the researcher seeks to understand how the participant "makes sense" and rationalizes their own experiences, while attempting to "make sense" of the participant "making sense" of their world.[178]

Finally, IPA is idiographic because it aims to explore individual experiences and recognize their individuality before constructing broader group themes across the complete data set.[179] Adhering to the sets of philosophical principles in IPA, as well as demonstrating how they were followed during analysis, is crucial to all IPA studies.

Recruitment

As recommended by IPA studies, participants were recruited through voluntary and purposive sampling methods to identify and recruit individuals with sizable knowledge and experience of the relevant phenomena.[180] IPA studies use purposive and voluntary sampling to narrow the range of variation and focus while simultaneously

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[176] Widanaralalage et al., "'I Didn't Feel I Was A Victim.'"
[177] Smith and Osborn, "Interpretative Phenomenological Analysis"; Smith, "Evaluating the Contribution of Interpretative Phenomenological Analysis."
[178] Smith and Osborn, "Interpretative Phenomenological Analysis as a Useful Methodology for Research on the Lived Experience of Pain"; Smith and Osborn, "Interpretative Phenomenological Analysis"; Smith, "Evaluating the Contribution of Interpretative Phenomenological Analysis"; Widanaralalage et al., "'I Didn't Feel I Was A Victim.'"
[179] Smith and Osborn, "Interpretative Phenomenological Analysis as a Useful Methodology for Research on the Lived Experience of Pain"; Smith and Osborn, "Interpretative Phenomenological Analysis"; Smith, "Evaluating the Contribution of Interpretative Phenomenological Analysis"; Widanaralalage et al., "'I Didn't Feel I Was A Victim.'"
[180] Smith and Osborn, "Interpretative Phenomenological Analysis"; Smith and Osborn, "Interpretative Phenomenological Analysis as a Useful Methodology for Research on the Lived Experience of Pain"; Smith, "Evaluating the Contribution of Interpretative Phenomenological Analysis."

recognizing the individualism and uniqueness of each account. Thus, using random or representative sampling would be inappropriate in an IPA study. Sample sizes are typically small (N < 5) and homogeneous to provide a heightened level of depth and attention to detail necessary to voice participants' lived experiences.[181] Recruitment occurred on an ongoing basis over a four-month period, beginning in August 2022 and ending in November 2022. During this time, both primary and secondary data recruitment were conducted virtually using mixed-purposive sampling and voluntary sampling methods. Mixed-purposeful sampling allowed me adequately select individuals with experiences across the various typologies and contexts in which IBSA is experienced while maintaining a specific focus on the lived experiences of sexual deepfakes.[182]

Participants

Although the study has a specific focus on sexual deepfakes, victim-survivors of sexual deepfakes as well as other types of image-based sexual abuse (IBSA) and

[181] Smith and Osborn, "Interpretative Phenomenological Analysis"; Widanaralalage et al., "'I Didn't Feel I Was A Victim'"; Smith and Osborn, "Interpretative Phenomenological Analysis as a Useful Methodology for Research on the Lived Experience of Pain"; Smith, "Evaluating the Contribution of Interpretative Phenomenological Analysis."

[182] Charlotte Benoot, Karin Hannes, and Johan Bilsen, "The Use of Purposeful Sampling in a Qualitative Evidence Synthesis: A Worked Example on Sexual Adjustment to a Cancer Trajectory," *BMC Medical Research Methodology* 16, no. 1 (February 18, 2016): 21, https://doi.org/10.1186/s12874-016-0114-6; Lawrence A. Palinkas et al., "Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research," *Administration and Policy in Mental Health and Mental Health Services Research* 42, no. 5 (2015): 533–44, https://doi.org/10.1007/s10488-013-0528-y; Albine Moser and Irene Korstjens, "Series: Practical Guidance to Qualitative Research. Part 3: Sampling, Data Collection and Analysis," *European Journal of General Practice* 24, no. 1 (2018): 9–18, https://doi.org/10.1080/13814788.2017.1375091; Yandisa Sikweyiya and Rachel Jewkes, "Perceptions and Experiences of Research Participants on Gender-Based Violence Community Based Survey: Implications for Ethical Guidelines," ed. Jeremy Miles, *PLoS ONE* 7, no. 4 (April 27, 2012): e35495, https://doi.org/10.1371/journal.pone.0035495.

synthetic sexually explicit media (SSEM), were recruited to participate in the study.[183] Because of the relative recency of sexual deepfakes, at the start of the study, it was unclear whether participants would emerge who had experienced sexual deepfake abuse, and if they did, there was a strong likelihood that their participation in this study would be amongst the first times speaking out about their experience, wherein the broadening of the scope was necessary. This led to my decision to include confirming cases of sexual deepfake abuse by lived experience experts (LEE). These were systematically collected through open-sourced and publicly accessible online channels. For these reasons, the study occurred in three separate phases: a screening survey, semi-structured interviews, and lived experience expert confirmation. Table 1 provides a brief overview of the phases and participant demographics of each phase.

[183] As sexual deepfakes and SSEM are subsets of IBSA, every participant has experienced IBSA of some form. To avoid confusion, when referring to specific participant experiences, the type of IBSA experienced will be directly stated, i.e. sexual extortion, non-consensually dissemination of sexually explicit media (NCDSEM), etc. Colloquially and academically, the terms "deepfake" and "synthetic" have seemingly acquired similar connotations. In alignment with prior research, this study does not intend to endorse the 'misuse' of these terms but recognize this fluidity in terminology. Meaning that this study will use the term "SSEM" to refer to any experience referring to media that has been altered using digital editing, AI, or machine learning technology but will specify instances in which the subset of "deepfake" technology has been used by using the term "sexual deepfake(s)."

Table 1. Comprehensive Overview of Study

Phase	Sampling Method	Goal	Participants
Phase One Screening Survey	Purposeful Homogeneous	Find a homogenous sample of participants with lived experiences of IBSA and sexual deepfakes eligible to participate in the in-depth, semi-structured interviews.	(59) 28 F, 30M, 1 Transgender Male
Phase Two Interviews	Purposeful Criterion	Conduct in-depth, semi-structured interviews with participants from Phase One. Transcribe and analyze interviews using Interpretative Phenomenological Analysis (IPA).	(5) 3F, 2M
Phase Three Confirming	Purposeful Confirming	To lend further support, meaning, importance, and depth to semi-structured interviews by a thorough analysis of sexual deepfake experiences from lived experience experts (LEE).	(7) 7F

Phase One – Screening Survey.

A screening survey created through Qualtrics was created to recruit participants for the in-depth, semi-structured interviews through voluntary and homogeneous purposive sampling methods through social media, online group memberships, and my professional networks. The goal of using a survey to recruit participants was to create a homogenous sample to "overcome the epistemological incommensurability of different qualitative methods."[184] Since IPA studies require a reasonably homogenous sample, focusing on a specific subset of individuals that experience a relatively understudied phenomenon, using a recruitment survey allowed for setting specific inclusionary criteria as well as gaining a broader sense of what potential participants had in common prior to conducting the in-depth, semi-structured interviews. IBSA is a widespread phenomenon,

[184] Benoot, Hannes, and Bilsen, "The Use of Purposeful Sampling in a Qualitative Evidence Synthesis: A Worked Example on Sexual Adjustment to a Cancer Trajectory."

and there was a high likelihood that participants would share similar experiences in the typology of sexual violence. Still, there would be diversity in experience and context between participants.

Most participants were recruited through specific groups on Reddit (i.e., subreddits) aimed towards victim-survivors of sexual assault, harmful experiences with technology, and pornography addiction help groups. Other social media sites such as Facebook, Twitter, Tumblr, LinkedIn, and Instagram were utilized during the survey recruitment process, but none garnered as much traction as Reddit. Because of the sensitive nature of the topics for the majority of subreddits in which recruitment information about the study was posted, all posts were closely monitored to ensure the safety and well-being of all group members on a daily basis from October 2022 to November 2022. Posts contained a description of the study, including a link and/or QR to the Participant Eligibility Survey and my contact information inviting individuals to participate in the semi-structured interviews.

Inclusionary criteria were set to ensure the safety and wellbeing of participants. Eligible participants were required to be 18 years of age or older, self-identify as victim-survivor of image-based sexual abuse (IBSA), and could not be currently pursuing and/or planning to pursue legal action regarding their experiences during the study. Those who did not meet the inclusionary criteria were redirected to a debriefing page with further information about the study, reasoning on why they were ineligible to participate, my contact information, and a compilation of resources. Participants who met the inclusionary criteria were directed to continue the remainder of the screening survey consisting of a total of 15 questions, four of which were optional, open-ended questions

regarding their experiences. Questions were categorized into three sections based on the definition of image-based sexual abuse: creation, dissemination, and threat to create and/or disseminate. Additionally, participants were asked to complete two questions specifically related to sexual deepfake experiences. A total of 59 participants were eligible to participate in the semi-structured interviews: 28 females, 30 males, and 1 transgender male. Table 2 provides a brief overview of the participant demographics, types of IBSA present, and preliminary findings on sexual deepfake abuse.

Table 2. Overview of Screening Survey Findings

Questions	*Female*	*Male*	*Transgender Male*	*Total*
Has someone ever created a nude, a semi-nude and/or sexual image(s) of you without your consent?				
Yes	18	25	1	44
No	5	2	----	7
I am not sure	4	3	----	7
	27	**30**	**1**	**58**
Has someone ever distributed a nude, a semi-nude and/or sexual image(s) of you without your consent?				
Yes	25	26	1	52
No	----	2	----	2
I am not sure	2	2	----	4
	27	**30**	**1**	**58**
Has someone ever threatened to create and/or distribute a nude, a semi-nude and/or sexual image(s) of you without your consent?				
Yes	24	24	1	49
No	2	6	----	8
I am not sure	----	----	----	----
	26	**30**	**1**	**57**

Survey Data. While this is a qualitative study, I believe that providing a comprehensive overview of the demographics, contexts, and brief descriptions of the potential participants is necessary. The following tables demonstrate the rates of prevalence for specific IBSA typologies, beginning with sexual deepfakes in Table 3.

Table 3. Sexual Deepfake Survey Data

Questions	*Female*	*Male*	*Transgender Male*	*Total*
Have you ever been superimposed into a sexually explicit image or video without your consent? (i.e. non-consensual sexual deepfakes, digitally altered sexual imagery)				
Yes	14	22	1	37
No	6	3	----	9
I am not sure	7	5	----	12
	27	**30**	**1**	**58**
To the best of your knowledge, has someone ever sold or threatened to sell non-consensual sexual deepfakes or digitally altered sexual images of you online or to another individual?				
Yes	17	21	1	39
No	1	1	----	2
I am not sure	3	5	----	8
	21	**27**	**1**	**49**

Importantly, every participant that experienced sexual deepfake abuse reported knowing about the monetization of the sexual deepfake content. This suggested the existence and establishment of the sexual deepfake marketplace preliminarily. Inconsistent with current quantitative literature on sexual deepfakes, in the current study, male participants reported higher rates of sexual deepfakes victimization (73%) than female participants (51%). Additionally, the transgender male participant also experienced sexual deepfake abuse, calling for future studies to explore differences in lived experiences beyond the gender binary. These findings are consistent with Flynn et al.'s (2021) sexual deepfake study.[185]

There was a notable disparity between the number of survey respondents and the number of individuals who chose to participate in semi-structured interviews. However, many survey respondents did answer the open-ended questions, some in great detail. The following charts (Figures 1-3) provided insightful preliminary understandings of the

[185] Flynn et al., "Deepfakes and Digitally Altered Imagery Abuse."

myriad of ways in which victim-survivors of IBSA and sexual deepfakes are impacted socially, emotionally, and physically. For a complete overview of data from the participant screening survey refer to Appendix I.

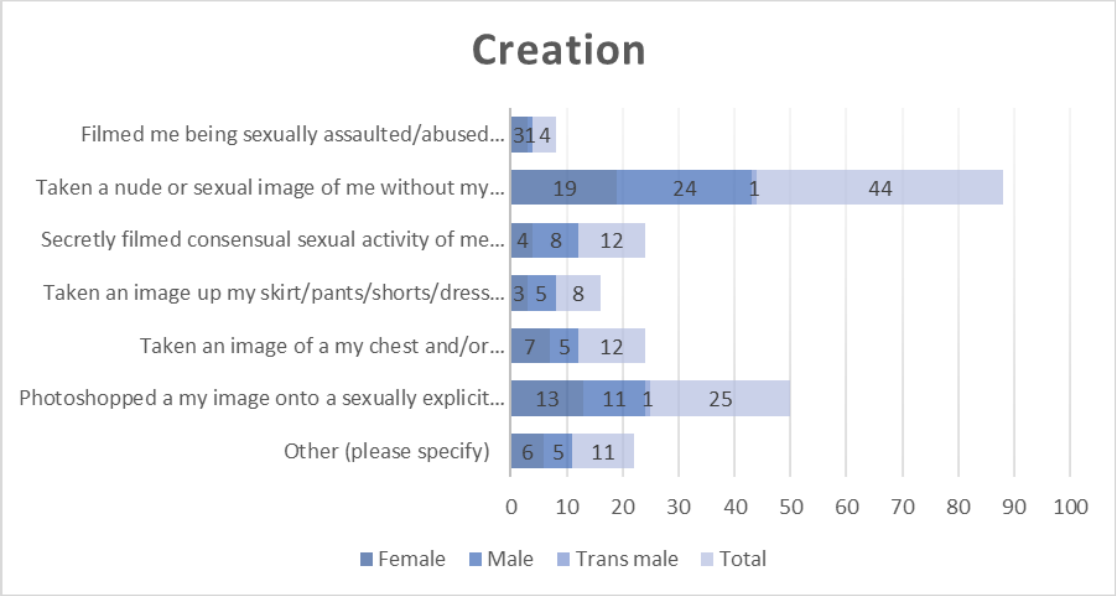


Figure 7. Screening Survey Data: IBSA-Creation.

This bar chart is based on screen survey responses and represents the type and prevalence of IBSA-Creation participant experiences.

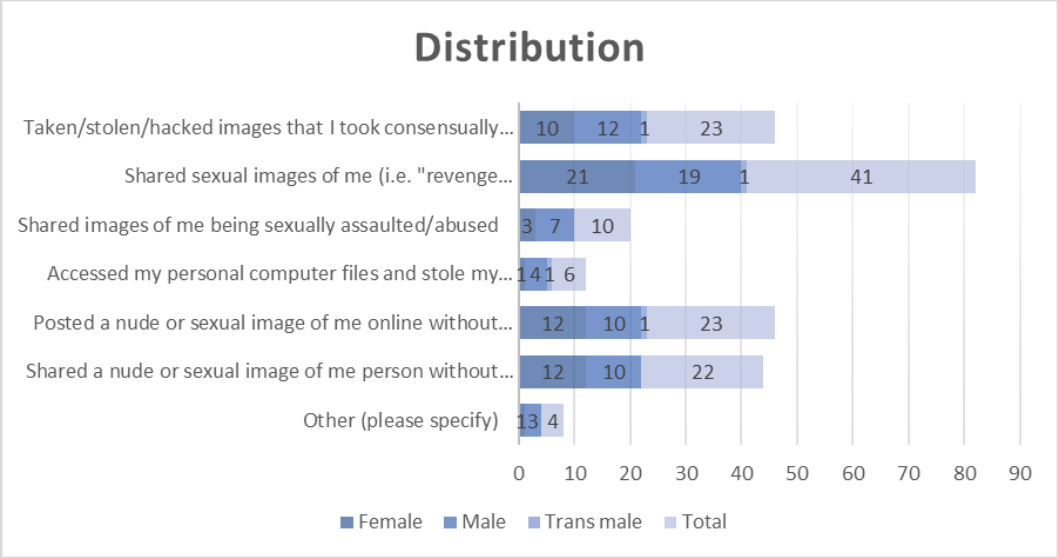


Figure 8. Screening Survey Data: IBSA-Distribution.

This bar chart is based on screen survey responses and represents the type and prevalence of IBSA-Distribution participant experiences.

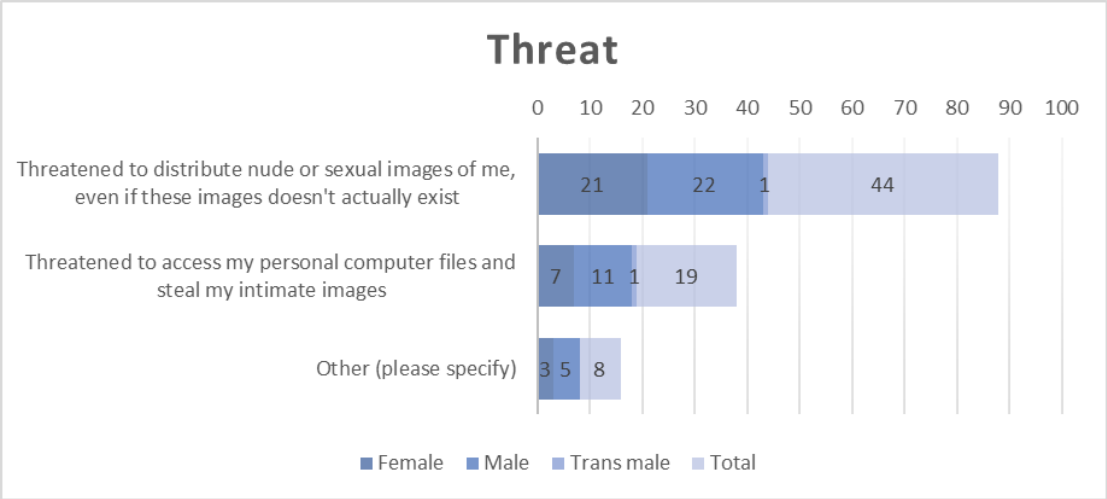


Figure 9. Screening Survey Data: IBSA-Threat.

This bar chart is based on screen survey responses and represents the type and prevalence of IBSA-Threat participant experiences.

Phase Two – Interviews.

A total of 59 participants were eligible to participate in the semi-structured interviews: 28 females, 30 males, and one transgender male. However, only seven participants chose to participate in the interviews, two of which were excluded during the transcription stage as it was apparent it was the same individual—resulting in a final total of five victim-survivors (3F and 2M) who participated in the in-depth, semi-structured interviews. Criterion sampling was used to transition between the screening survey and the interviews based on inclusionary criteria and willingness to participate. The resulting group of participants collectively shared lived experiences of IBSA but varied in the typology and context in which IBSA was experienced. As such, the specific type of IBSA experienced is listed in the table below. Table 4 outlines participants' numeric pseudonyms, demographics, and case-related information.

Table 4. Participant Demographics[186]

Participant		*Sexual Violence*	*Perpetrator*	
Pseudonym	Gender Identity	Typology	Knew Prior?	Gender Identity
River	Male	sexual extortion; SSEM; NCDSEM	Yes	Male
Luke	Male	sexual extortion; NCDSEM	No	Unknown
Lia	Female	sexual deepfakes; secret filming (voyeurism); IPV; SSEM; NCDSEM	Yes	Male
Judy	Female	NCDSEM	Yes	Male
Mary	Female	sexual deepfakes; hacking; NCDSEM; SSEM	Yes	Male

This is data collected from semi-structured interviews with victim-survivors. Table 4 includes sexual violence typologies and perpetrator demographics.

Semi-structured interviews were virtually conducted one-on-one (myself and the participant) through my Harvard University Zoom account and lasted from 30 minutes to an hour. Participants could access the interview "room" through a secured link, where entrance was only accessible by me and the participant. With participants' consent, interviews were recorded on an external audio device. Only the original audio was recorded and was immediately deleted upon transcription. I personally transcribed interviews verbatim, removed any identifying information, and assigned pseudonyms to protect their confidentiality and anonymity. Finally, participants were reminded that participation is completely voluntary, and they may stop the interview at any time without reason. No one asked to stop during the interview.

[186] SSEM: synthetic sexually explicit media; IBSA: image-based sexual abuse; NCDSEM: non-consensual dissemination of sexually explicit media; IPV: intimate partner violence

A participant interview guide was constructed prior to beginning the study and was used as a guideline to allow for a natural flow of discussion between myself and the participants and to allow for the focus on specific areas of interest and concern consistently.[187] While the aim was for an open discussion format about participants' experiences, four of the five participants required more guidance throughout the interview because this was the first time speaking out about their experiences. As such, it took a bit longer for these participants to develop the open discussion format during the interview. During interviews, all five participants revealed that they had little to no prior knowledge about IBSA, sexual deepfakes, or SSEM. Participants had essentially "learned by experience" and struggled to situate their experiences within the 'box' of sexual violence since this was an unknown form of abuse. They faced significant challenges navigating their experiences throughout the interview. Considering these challenges, having the guide helped participants understand and conceptualize their experience with greater clarity during the interview. The areas covered in the interview included: describing their experiences of image-based sexual abuse (inclusive of sexual deepfakes and synthetic sexually explicit media); harms and impacts: emotional, physiological, and social responses; support seeking: police, law enforcement, and legal assistance; and future directions and needs of victim-survivors.

During the interviews, the top priority was the participants' well-being. As such, it was necessary to pay close attention to the participants' tone of voice, the language used, and audible sounds of distress (crying, shaking voice, sniffling, etc.). When appropriate, participants were asked if they needed a break, would like to skip the

[187] Rackley et al., "Seeking Justice and Redress for Victim-Survivors of Image-Based Sexual Abuse," November 2021.

question, or if they needed to stop the interview altogether. None of the participants requested to stop the interview process.

The last two minutes of the interview was a debriefing period where I encouraged participants to ask questions and raise concerns – if they had any. Participants were also reminded of the study's overall purpose and main objectives. Upon completion of the interview, participants were reminded of the resources available and were sent a digital resource guide created for the purpose of this study. Finally, each participant received a follow-up email thanking them for their time, contribution, and bravery in speaking out. The email also contained a digital copy of the resources guide as well as a reminder that they could reach out with any questions or raise concerns they may have.

Once the data collection, transcription, and deidentification process was complete, Interpretative Phenomenological Analysis (IPA) was used to thematically code the de-identified data from Phase One using the qualitative data analysis software, NVivo 12.[188] This analysis builds on a technofeminist standpoint, epistemology, and methodology, viewing victim-survivors as having expert knowledge of IBSA which is fundamental and crucial to this study's analysis.[189] The preliminary IPA conducted during Phase One was

[188] McGlynn et al., "'It's Torture for the Soul,'" August 1, 2021; Nizza, Farr, and Smith, "Achieving Excellence in Interpretative Phenomenological Analysis (IPA)"; Smith and Osborn, "Interpretative Phenomenological Analysis"; Smith and Osborn, "Interpretative Phenomenological Analysis as a Useful Methodology for Research on the Lived Experience of Pain"; Smith, "Evaluating the Contribution of Interpretative Phenomenological Analysis."

[189] Sandra Harding and Kathryn Norberg, "New Feminist Approaches to Social Science Methodologies: An Introduction," *Signs: Journal of Women in Culture and Society* 30, no. 4 (2005): 2009–15, https://doi.org/10.1086/428420; Abigail Brooks, "Feminist Standpoint Epistemology: Building Knowledge and Empowerment Through Women's Lived Experience," 2007, 53–82, https://doi.org/10.4135/9781412984270.n3; McGlynn et al., "'It's Torture for the Soul,'" August 1, 2021; Wajcman, *TechnoFeminism*; Henry and Powell, "Embodied Harms."

used as a guide for selecting lived experience experts that amplified themes that emerged in victim-survivors' in-depth, semi-structured interviews.

Phase Three – Confirmation.

Phase Three consisted of the collection and analysis of interviews and testimonials from lived experience experts (LEE) of sexual deepfakes. Lived experience experts are survivors of phenomena that have used their experience to inform others through advocacy efforts across a diverse range of fields: legislative, political, economic, research, international, and community engagement.[190] Collection of LEE data was conducted through purposeful confirmation sampling to provide support, meaning, and a deeper understanding of emerging themes identified from the semi-structured interviews.[191] Confirmation sampling is typically conducted after a preliminary analysis of primary data has been conducted, which was the case in my study.[192]

The data collected for this section was found online, in open-source, publicly accessible channels varying in medium. Inclusionary criteria were established to maintain consistency between Phase Two and Phase Three analysis: lived experience experts must have spoken out more than once about their experience, only interviews, self-published testimonies, articles, essays, or videos would be considered, and they must have engaged

[190] Esmeralda Vázquez, Michelle Kim, and Maria E. Santaella, "Lived Experience Experts: A Name Created by Us for Us," *Expert Review of Hematology* 16, no. sup1 (March 15, 2023): 7–11, https://doi.org/10.1080/17474086.2023.2178410.
[191] Palinkas et al., "Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research."
[192] Benoot, Hannes, and Bilsen, "The Use of Purposeful Sampling in a Qualitative Evidence Synthesis: A Worked Example on Sexual Adjustment to a Cancer Trajectory"; Palinkas et al., "Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research"; Moser and Korstjens, "Series: Practical Guidance to Qualitative Research. Part 3: Sampling, Data Collection and Analysis."

in advocacy work regarding their experience at some point in time. Over the course of conducting research for this thesis, I documented the names and sources of various LEE who met the aforementioned criteria. After completing the initial analysis of Phase Two, data on seven lived experience experts were selected based on the documentation during the initial research stage, established inclusionary criteria, and amplifying emerging themes expressed by participants in the semi-structured interviews. The final sample consisted of seven female lived experience experts of sexual deepfake abuse. Table 5 outlines lived experience experts' pseudonyms, demographics, and case-related information. All lived experience experts were survivors of sexual deepfake abuse; as such the sexual violence typology is not listed in the chart.

Table 5. Lived Experience Experts[193]

Participants	*Gender Identity*	*Knew Perpetrator Prior*	*Perpetrator Gender*	*Data Source*
Ella	Female	No	Male	Journal Article
Annie	Female	Yes	Male	News Article, Op-Ed
Fran	Female	No	Male	News Articles with Audio Interview
Kathy	Female	No	Male	Video Testimony
Julie	Female	No	Male	News Articles
Aly	Female	No	Male	News Articles, Documentary
Rebecca	Female	No	Male	News Article with Video Interview

This table provides information on the data collected for confirming cases from lived experience experts.

A total of 11 pieces of data were collected across all seven participants: one self-published research article, seven news articles, and two videos, one of which had an attached transcript, the other I manually transcribed. All identifying information was removed prior to analysis from each of the collected pieces of data and replaced with a pseudonym.

[193] Lynn Enright, "The World of Deepfake Porn: How Fabricated Videos Are Being Used to Harm Women," *Inews*, November 25, 2022, https://inews.co.uk/inews-lifestyle/deep-fake-porn-fabricated-videos-harm-women-1879934; Cleo Abram, "The Most Urgent Threat of Deepfakes Isn't Politics. It's Porn.: A Video Explainer with Kristen Bell," *Vox*, June 8, 2020, https://www.vox.com/2020/6/8/21284005/urgent-threat-deepfakes-politics-porn-kristen-bell; Rana Ayyub, "In India, Journalists Face Slut-Shaming and Rape Threats," *The New York Times*, May 22, 2018, https://www.nytimes.com/2018/05/22/opinion/india-journalists-slut-shaming-rape.html; Martin, "Image-Based Sexual Abuse and Deepfakes," 2021; Rana Ayyub, "I Was The Victim Of A Deepfake Porn Plot Intended To Silence Me," n.d., 11; Helen Mort, "I Was a Victim of Deepfake Porn," *Women's Magazine Australia*, October 29, 2021, https://www.womenshealth.com.au/i-was-a-victim-of-deepfake-porn/; Gibi (@GibiOfficial), "Deepfakes video transcript," Twitter, November 10, 2022, https://www.twitlonger.com/show/n_1ss6387.; Sophie Cockerham, "Deepfake Porn Wrecks Lives – but, as One Woman Discovered, It Takes Just 8 Seconds to Make an Image.," *Metro UK*, October 21, 2022, https://metro.co.uk/2022/10/21/deepfake-porn-takes-seconds-to-make-but-can-wreck-lives-17605029/; Felicity Jackson, "Behind Every Image Is a Person," *Now Then Magazine*, January 26, 2021, https://nowthenmagazine.com/articles/helen-mort-behind-every-image-is-a-person-violence-against-women-deepfakes.

Because sexual deepfakes are a new phenomenon and only one academic research study has explored the lived experiences of victim-survivors, it was crucial that the voices of victim-survivors in the semi-structured interviews were validated and the harm and trauma they expressed were sufficiently displayed in this study. The personal accounts collected provide an "insider look" into the experiences of victim-survivors of a specific type of sexual violence and are not intended to be representative of the population at large but rather to build a greater understanding of the experiences presented by participants in the semi-structures interviews as well as of an understudied population.[194]

Interpretative Phenomenological Analysis (IPA)

To adhere with the philosophical principles of IPA, the research questions and participant interview guide were constructed with the intention of creating an engaging and discursive dynamic for victim-survivors of various types of image-based sexual abuse (IBSA), including sexual deepfakes to provide a personal account of their lived experiences. The interviews were transcribed verbatim to accurately reflect the interview's natural flow, taking into consideration pauses, technological interferences, inaudible words, and hesitations.[195] After transcription was complete, the analysis followed the four-stage process outlined by Smith et al., 2009, 2015:

1. re-reading and annotations;
2. initial coding and emerging themes;

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[194] Ashley, "Exploring Growth Outcomes in the Aftermath of Rape: An Interpretative Phenomenological Analysis"; Smith and Osborn, "Interpretative Phenomenological Analysis"; Smith and Osborn, "Interpretative Phenomenological Analysis as a Useful Methodology for Research on the Lived Experience of Pain"; Smith, "Evaluating the Contribution of Interpretative Phenomenological Analysis"; Widanaralalage et al., "'I Didn't Feel I Was A Victim.'"

[195] Divesh Lala, Shizuka Nakamura, and Tatsuya Kawahara, "Analysis of Effect and Timing of Fillers in Natural Turn-Taking.," 2019, 4175–79; Widanaralalage et al., "'I Didn't Feel I Was A Victim.'"

3. seeking relationships and clustering into list of master themes;
4. comparison of master themes across sample and identifying ambient superordinate themes.[196]

Using NVivo 12 software, I followed the four-stage process of IPA to analyze the data. First, each interview was carefully re-read and annotated. Next, utilizing the annotations, codes were created, relationships between codes identified, and listed themes for each interview by clustering related codes. Individual master lists were then internally compared against each another to create a master list of themes representing Phase Two and Phase Three data, respectively. Because of the high degree of consistency found during data analysis, the same set of overarching codes used for Phase Two was also used for Phase Three. By engaging in focused coding, and noting similarities and differences between the two master lists of themes, themes were refined to create a single list of master themes.

Ensuring Validity and Quality Assurance

Ensuring validity and making quality assurances were crucial to this study's design. IPA studies are frequently criticized for their wide applicability, resulting from a lack of standardization, ambiguous procedures, and failure to provide overall generalizability.[197] To overcome these critiques, in Widanaralalage et al.'s (2022) study,

[196]Smith and Osborn, "Interpretative Phenomenological Analysis"; Smith and Osborn, "Interpretative Phenomenological Analysis as a Useful Methodology for Research on the Lived Experience of Pain"; Widanaralalage et al., "'I Didn't Feel I Was A Victim'"; Pietkiewicz and Smith, "A Practical Guide to Using Interpretative Phenomenological Analysis in Qualitative Research Psychology"; Smith, Larkin, and Flowers, "Interpretative Phenomenological Analysis: Theory, Method, and Research."

[197] Nizza, Farr, and Smith, "Achieving Excellence in Interpretative Phenomenological Analysis (IPA)"; Smith and Osborn, "Interpretative Phenomenological Analysis"; Widanaralalage et al., "'I Didn't Feel I Was A Victim'"; K. Rodham, F. Fox, and N. Doran, "Exploring Analytical Trustworthiness and the Process of Reaching Consensus in Interpretative Phenomenological Analysis: Lost in Transcription," *International Journal of Social Research Methodology* 18, no. 1 (January 2, 2015): 59–71, https://doi.org/10.1080/13645579.2013.852368.

researches utilized a collective set of recommendations for ensuring the validity and quality assurance in IPA studies were incorporated.[198] Based on the methodological similarities between my research and Widanaralalage et al.'s, it was suitable to adopt the same three guidelines to ensure that appropriate and coherent methods were employed for the research questions:

5. Yardly's (2000) four principles for good qualitative research.
6. Smith's (2011) assessment tool for quality in IPA studies.
7. Nizza et al.'s (2021) four quality indicators for IPA research.[199]

These are briefly outlined below in Table 6.

[198] Widanaralalage et al., "'I Didn't Feel I Was A Victim.'"
[199] Nizza, Farr, and Smith, "Achieving Excellence in Interpretative Phenomenological Analysis (IPA)"; Widanaralalage et al., "'I Didn't Feel I Was A Victim'"; Lucy Yardley, "Dilemmas in Qualitative Research," *Psychology & Health - PSYCHOL HEALTH* 15 (March 2000): 215–28, https://doi.org/10.1080/08870440008400302; Smith, "Evaluating the Contribution of Interpretative Phenomenological Analysis."

Guideline	*Criteria*
Yardley (2000)	Sensitivity to Context Commitment and Rigor Transparency and Coherence Impact and Importance
J. A. Smith (2011)	Adherence to IPA Philosophical Principles Transparency and Coherence in the Analysis Sufficient Sampling from the Corpus Keeping Focused and Offering Depth Presenting Strong Data and Interpretation Engaging and Enlightening the Reader
Nizza et al. (2021)	Constructing a Compelling and Unfolding Narrative Developing a Vigorous Experiential and/or Existential Account Close Analytic Reading of Participants' Wording Attending to Convergence and Divergence

Table 6. Guidelines for Validity and Quality in the Current Study

Additionally, to further enhance the validity and reliability of the analysis, as well as to ensure awareness of participants' well-being, during the process of transcription and de-identification, changes in tone of voice, the language used, and audible sounds of distress (crying, shaking voice, sniffling, etc.) were documented. This extra step was essential throughout the analytical process, as it provided a deeper understanding of participants' lived experiences, primarily since interviews were not conducted in person.[200]

Finally, personal reflexivity is a crucial part of the analytical process, as under the hermeneutic approach, the researcher's own experiences and knowledge are "valuable guides in the research process."[201] As such, it was important to be "[m]indful of any biases

[200] Rodham, Fox, and Doran, "Exploring Analytical Trustworthiness and the Process of Reaching Consensus in Interpretative Phenomenological Analysis."
[201] Jonie Chiu and Ethel Quayle, "Understanding Online Grooming: An Interpretative Phenomenological Analysis of Adolescents' Offline Meetings with Adult Perpetrators," *Child Abuse & Neglect* 128 (June 1, 2022): 105600, https://doi.org/10.1016/j.chiabu.2022.105600.

or preconceptions that may impact findings, personal beliefs, attitudes, and relevant experiences of [myself as] the researcher were noted throughout the entirety of the research journey."[202]

[202] Chiu and Quayle.

Chapter IV.

Results

Three superordinate themes were identified based on analysis of lived experiences of image-based sexual abuse (IBSA), inclusive of sexual deepfakes, from both Phase Two and Phase Three: 1. Gendered narratives; 2. Forever changed; and 3. Conflicting identities. The three superordinate themes and their respective subordinate themes are outlined in Table 7. Given the strong similarities between superordinate and subordinate themes in Phase Two and Phase Three, resulting from the use of confirmation sampling through experiences of lived experience experts, the following review merges the two groups. Quotes from lived experience experts will be denoted by citations.

Table 7. Master List of Themes

Superordinate Themes	*Subordinate Themes*	*Semi-Structured Interviews*	*Lived Experience Experts*
Gendered narratives	Feminization as a Weapon	All	All
	Gender Performativity	All	All
	Stigmatization and Stereotypes	All	All
Forever changed	Visceral and Embodied Harms	All	All
	Escalation and Radiation of Abuse	Luke, Lia, Judy, Mary	All
	Impact and Recovery	All	All
	Hopelessness	Luke, Lia, Judy, Mary	All
Conflicting identities	Blame, Shame, and Responsibility	Luke, Lia, Judy, Mary	Ella, Annie, Fran, Kathy, Judy Aly
	Isolation and Behavior Change	All	All
	Becoming Pornography	All	Ella, Annie, Fran, Kathy, Aly
	All-Encompassing	All	All

This table provides information on the master themes identified from coding and the corresponding individuals in which emergent themes were identified.

Gendered Narratives

The varied and divergent roles and impact of gender were made palpable by participants, seamlessly expressed as both an influence and a consequence of victimization. Gendered narratives were emergent three subordinate themes: 1. feminization, 2. gender performativity, and 3. stigmatization & stereotypes.

Feminization as a Weapon.

Female and male participants described experiencing feminization as a result of their victimization. Although there were only two male participants in this study, both participants delineated experiences consistent with previous research establishing rape victimization as a "doubly feminine phenomenon: (a) because it entails (interpersonal) victimization, triggering associations of weakness and vulnerability traditionally associated with femininity, and (b) because it forces the victim into a particular role within sexual relations that is typically allocated to the feminine party."[203] This was seen across both genders and phases and was inclusive of image-based sexual abuse, sexual deepfakes, and along the spectrum of synthetic sexually explicit media, such as in the case of Mary, a female victim-survivor of four different types of image-based sexual abuse (IBSA):

> I felt gross. It was a violation of my trust and privacy…They hacked into my messages [Facebook and Discord] and stole my images…They spread from were stolen from my computer… I've never seen a woman, like go to a guy on social media and then Photoshop his swimsuit picture of the beach…They just can. So they do. I think they thought it was a joke, like it was funny.

Notably, male participant experiences contained aspects typically definitive of gender power inequities seen in narratives of male-perpetrated sexual violence against women where dominance is equated with masculinity and inferiority is synonymous with femininity.[204] Feelings of fear and isolation were identified by River, a male victim-

[203] McCaughey and Cermele, "Violations of Sexual and Information Privacy," December 2022.
[204] Hall, Hearn, and Lewis, "Image-Based Sexual Abuse: Online Gender-Sexual Violations"; Hila Lowenstein-Barkai, "#Me(n)Too? Online Social Support Toward Male and Female Survivors of Sexual Victimization," *Journal of Interpersonal Violence* 36, no. 23–24 (December 1, 2021): NP13541–63, https://doi.org/10.1177/0886260520905095; DeKeseredy and Schwartz, "Thinking Sociologically About Image-Based Sexual Abuse"; Signe Ravn, Julia Coffey, and Steven Roberts, "The Currency of Images:

survivor of IBSA and synthetic sexually explicit media (SSEM) who was also doxed, harassed, and blackmailed by his peers:

> I was in high school. I went to check my locker and found an envelope. It had a pornographic picture, an image of a naked man with my face photoshopped on it…They tried to blackmail me…As time went on, there were video threats, and it was me engaging in sexual activity but only I was photoshopped…I didn't tell anyone about it and as time went on I was getting unknown messages. I couldn't work in the school without being insulted. I was very embarrassed. I stopped going to school for eight months.

While it is unclear whether male participants were also targeted due to their gender, what was evident were the similarities between male and female participant experiences. Male participants reported feelings of vulnerability, shame, embarrassment, and intimidation from their perceived powerlessness, mirroring the experiences and impacts of female victims of male-perpetrated sexual violence.[205]

Gender Performativity.

Male participants described similar experiences of denigration and objectification as female participants, providing evidence of gender performativity occurring regardless of sex, gender identity, and sexual orientation. While prior research has established this in various types of male-perpetrated sexual violence against women such as rape, sexual

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Risk, Value and Gendered Power Dynamics in Young Men's Accounts of Sexting," *Feminist Media Studies* 21, no. 2 (February 17, 2021): 315–31, https://doi.org/10.1080/14680777.2019.1642229; Anastasia Powell et al., "Perpetration of Image-Based Sexual Abuse: Extent, Nature and Correlates in a Multi-Country Sample," *Journal of Interpersonal Violence* 37, no. 23–24 (December 2022): NP22864–89, https://doi.org/10.1177/08862605211072266; McGlynn et al., "'It's Torture for the Soul,'" August 1, 2021; Kelly, *Surviving Sexual Violence*, 1988.

[205] McVey, Gurrieri, and Tyler, "The Structural Oppression of Women by Markets"; McCaughey and Cermele, "Violations of Sexual and Information Privacy," December 2022; McGlynn, Rackley, and Houghton, "Beyond 'Revenge Porn'"; Kelsea Perry, Rosemary Ricciardelli, and Michael Adorjan, "The Gendered Dynamics of Sexting as Boundary Work," *YOUNG* 30, no. 4 (September 2022): 400–418, https://doi.org/10.1177/11033088221076615; Rosewarne, "Abuse as Artefact: Understanding Digital Abuse of Women as Cultural Informant"; Widanaralalage et al., "'I Didn't Feel I Was A Victim.'"

harassment, and non-consensual sharing of sexually explicit images (i.e., "revenge porn") wherein forms of sexual violence "may be used as a conduit for sexual gratification or male peer bonding, of which degradation and objectification of women is a key component of gender performativity,"[206] it has less frequently been applied outside of heteronormative sexual violence.[207] Male participants relayed experiencing denigration and objectification similar to female participants through feminization; however, this was only possible when both the perpetrator and the victim, either voluntarily or involuntarily, engaged in 'doing' gender. River experienced a complete loss of control after someone photoshopped his head onto pornographic images and videos:

> I was sweating, I was embarrassed. I didn't know what to do at that moment, so I just dealt with it myself…I couldn't talk to anyone about it. I didn't really know who to reach out to…It was very embarrassing…They enjoyed laughing at it, laughing at someone. It was like they liked making people feel bad just because they could.

Experiences such as Aly's, a lived experience export of sexual deepfakes, portray sexual violence as a function of men's power individually and structurally through the proliferation of systemic structural power imbalances often invisibly embedded in

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[206] Judith Butler, "Performative Acts and Gender Constitution: An Essay in Phenomenology and Feminist Theory," *Theatre Journal (Washington, D.C.)* 40, no. 4 (1988): 519–31; Henry and Flynn, "Image-Based Sexual Abuse," December 2019; Anita Padmanabhanunni and David Edwards, "A Phenomenological Case Study of the Therapeutic Impact of Imagery: Rescripting of Memories of a Rape and Episodes of Childhood Abuse and Neglect," *Indo-Pacific Journal of Phenomenology* 14, no. 1 (May 2014): 1–16, https://doi.org/10.2989/IPJP.2014.14.1.3.1235; Cheryl Nelson Butler, "A Critical Race Feminist Perspective on Prostitution & Sex Trafficking in America," *Yale Journal of Law and Feminism* 27, no. 1 (2016 2015): 95–140, https://heinonline.org/HOL/P?h=hein.journals/yjfem27&i=97.

[207] Widanaralalage et al., "'I Didn't Feel I Was A Victim'"; Flynn et al., "Deepfakes and Digitally Altered Imagery Abuse"; Monique Huysamen and Floretta Boonzaier, "Men's Constructions of Masculinity and Male Sexuality through Talk of Buying Sex," *Culture, Health & Sexuality* 17, no. 5 (May 2015): 541–54, https://doi.org/10.1080/13691058.2014.963679; Lowenstein-Barkai, "#Me(n)Too? Online Social Support Toward Male and Female Survivors of Sexual Victimization"; Christopher Dietzel, "'That's Straight-Up Rape Culture': Manifestations of Rape Culture on Grindr," in *The Emerald International Handbook of Technology-Facilitated Violence and Abuse*, ed. Jane Bailey, Asher Flynn, and Nicola Henry (Emerald Publishing Limited, 2021), 351–68, https://doi.org/10.1108/978-1-83982-848-520211026; Thiem Annika, "No Gendered Bodies without Queer Desires : Judith Butler and Biblical Gender Trouble," *Old Testament Essays* 20, no. 2 (January 1, 2007): 456–70, https://doi.org/10.10520/EJC85873.

Western society. As both female and male participants described gratification occurring as a result of their lack of power and control, it is reasonable to argue that power cannot be removed from sexual violence, making sexual violence equally an issue of gendered inequities as it is power inequities:

> Someone was using my identity, my profile without my consent in a sexual manner. I appreciate some people don't feel like it is that big of a deal…But we have hit blurry lines between perception and reality because perception is reality now. I find it abhorrent that they used my image to silence me, to scare me, or for sexual gratification without my consent.

Recent research has established financial sexual extortion as predominantly experienced by men, in which perpetrators use the threat of sharing sexually explicit imagery to coerce victims into giving them money not to distribute these images.[208] Luke's experience was consistent with these findings:

> I don't know the actual identity of the individual, but they came across as a woman online…Without my knowledge or consent they were able to screen record what was being sent to me and what I sent to them [sending was consensual]. Pretty much within minutes I got a message on Instagram that had all my followers on it saying [M2's] nudes or something like that. They tried to extort me on it, essentially saying I could pay them X amount of money to either take them down and delete the messages or not…I didn't report it because mainly I didn't really think it was a crime? That it would be something they [the police] would pursue.

In alignment with Judith Butler's conceptualization of the idea of "gender performativity: gender not as an expression of what one is, but gender as something that

[208] Roberta Liggett O'Malley and Karen M. Holt, "Cyber Sextortion: An Exploratory Analysis of Different Perpetrators Engaging in a Similar Crime," *Journal of Interpersonal Violence* 37, no. 1–2 (January 1, 2022): 258–83, https://doi.org/10.1177/0886260520909186; Federal Bureau of Investigation, "FBI Warns about an Increase in Sextortion Complaints.," FBI Bulletin, *FBI Warns about an Increase in Sextortion Complaints.* (blog), September 2, 2021, https://www.ic3.gov/Media/Y2021/PSA210902; Zara Ward, "Intimate Image Abuse, an Evolving Landscape" (The Revenge Porn Helpline, 2022), https://revengepornhelpline.org.uk/assets/documents/intimate-image-abuse-an-evolving-landscape.pdf?_=1639471939; The National Crime Agency (NCA), "Record Numbers of UK Men Fall Victim to Sextortion Gangs," *Record Numbers of UK Men Fall Victim to Sextortion Gangs* (blog), May 24, 2018, https://www.iwf.org.uk/news-media/statements/record-numbers-of-uk-men-fall-victim-to-sextortion-gangs/; Zara Ward, "RPH Report 2021: The Rise of Sextortion" (The Revenge Porn Helpline), accessed March 17, 2023, https://revengepornhelpline.org.uk/assets/documents/art2.pdf?_=1653315991.

one does," there is nothing inherently harmful with 'doing' gender. Because "the body becomes its gender through a series of acts which are renewed, revised and consolidated through time,"[209] harm emerges when gender performativity requires the coercion of a willing actor who forces an unwilling subject into 'doing' gender as well as having gender 'done' unto them. The powerlessness, weakness, and vulnerability collectively experienced by victims suggest that heteronormativity has become the template for enacting sexual violence – regardless of the victim's gender identity.[210] This is also consistent with technofeminist epistemologies arguing that "traditional gender hierarchies and power dynamics are being replicated in and through digital technologies."[211] Participants collectively agreed that gender performativity is potentially harmful when it reiterates negative constructions of gender identity and the "adoption of particular beliefs, norms, and values takes place within a social context of 'hegemonic masculinity,' characterized by hierarchical gender relations vis-à-vis subordinated masculinities and femininities."[212]

As research on experiences of sexual violence continues to expand in diversity and inclusivity, a greater focus on how heteronormative gender performativity influences

[209] Henry and Flynn, "Image-Based Sexual Abuse," December 2019; Butler, "A Critical Race Feminist Perspective on Prostitution & Sex Trafficking in America"; Butler, "Performative Acts and Gender Constitution: An Essay in Phenomenology and Feminist Theory"; Dodge, "Digitizing Rape Culture."
[210] Butler, "Performative Acts and Gender Constitution: An Essay in Phenomenology and Feminist Theory"; Yar, "The Policing of Internet Sex Offences"; Yar and Drew, "Image-Based Abuse, Non-Consensual Pornography, Revenge Porn"; Eva Mulder, Antony Pemberton, and Ad J. J. M. Vingerhoets, "The Feminizing Effect of Sexual Violence in Third-Party Perceptions of Male and Female Victims," *Sex Roles* 82, no. 1–2 (January 2020): 13–27, https://doi.org/10.1007/s11199-019-01036-w; McVey, Gurrieri, and Tyler, "The Structural Oppression of Women by Markets"; Henry and Flynn, "Image-Based Sexual Abuse," December 2019; Dodge, "Digitizing Rape Culture."
[211] Powell, Flynn, and Sugiura, *The Palgrave Handbook of Gendered Violence and Technology*; Powell and Henry, *Sexual Violence in a Digital Age*; Rosewarne, "Abuse as Artefact: Understanding Digital Abuse of Women as Cultural Informant"; Wajcman, *TechnoFeminism*; Wajcman, "Addressing Technological Change."
[212] Henry and Flynn, "Image-Based Sexual Abuse," December 2019.

the perpetuation of gendered sexual violence and feminization of victims. Future research should also consider cultural shifts surrounding societal attitudes and perceptions of the female and femininity and how negative connotations of the female through gendered sexual violence impact individuals who identify as female.

Stigmatization and Stereotypes.

Both female and male victim-survivors described their experiences of abuse as 'gendered.' Consistent with prior research on both IBSA and sexual deepfakes, the idea of these forms of abuse being gendered can vary in meaning and context.[213] Male victim-survivors reported being less likely to report to police because of the stigmatization against male rape and the perpetuation of rape myths arguing men can't be raped:

> I kind of felt like there was a stigma, like a guy reporting this type of issue could be seen like it's just a guy coming off as a creep online. - Luke

Female victim-survivors reported feeling stigmatized through sexual double standards that label women as being sexually deviant or 'dirty' for public sexual expressions. In the majority of female participants, there was a deep feeling of stigmatization because of the sexual nature of the abuse:

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[213] Ulrika Andersson et al., eds., *Rape Narratives in Motion* (Cham: Springer International Publishing, 2019), https://doi.org/10.1007/978-3-030-13852-3; Flynn et al., "Deepfakes and Digitally Altered Imagery Abuse"; Widanaralalage et al., "'I Didn't Feel I Was A Victim'"; McGlynn et al., "'It's Torture for the Soul,'" August 1, 2021; Henry, "Beyond the 'Sext': Technology- Facilitated Sexual Violence and Harassment against Adult Women," n.d.; Jørgensen and Demant, "Shame, Shaming and Economy: A Theory of Image-Based Sexual Abuse Within Different Online Sharing Environments," March 20, 2021; Rachel Killean, Anne-Marie McAlinden, and Eithne Dowds, "Sexual Violence in the Digital Age: Replicating and Augmenting Harm, Victimhood and Blame," *Social & Legal Studies* 31, no. 6 (December 2022): 871–92, https://doi.org/10.1177/09646639221086592; Kelley R. Holladay, W. Bryce Hagedorn, and David Boote, "The Influence of Cyber-Sexual Assault on the Mental Health Outcomes of Survivors," *Journal of Counseling Sexology & Sexual Wellness: Research, Practice, and Education*, January 11, 2021, 93–103, https://doi.org/10.34296/02021026; Champion et al., "Examining the Gendered Impacts of Technology-Facilitated Sexual Violence: A Mixed Methods Approach"; McGlynn and Rackley, "Image-Based Sexual Abuse," 2017.

> I felt stigmatized, harassed ashamed, and depressed…I felt angry. I was angry because I felt ashamed of it…People need to know that these things happen. – Judy

Prior research has established rape culture as digitized, negatively affecting victims by limitations to adhering to the gender binary, where hegemonic masculinity, victim-blaming, 'slut'-shaming, and sexual double standards permeate both online and offline spaces.[214] It was apparent that the digitization of rape culture had affected both male and female victim-survivors experiences.

Forever Changed

Participants portrayed their experiences of image-based sexual abuse and sexual deepfakes as one of irreparable harm. While participant experiences were marked by variations in context, age, gender, and medium, the complete and insurmountable devastation was unanimously experienced amongst all victim-survivors. Experiences of abuse were comprehensive and all-encompassing; no aspect of their lives was left undisrupted. Resulting ramifications transcended beyond the screen, breaching the already blurred lines between the physical and the virtual, as participants spoke of the

[214] Henry and Powell, "Embodied Harms"; Paris and Donovan, "Deepfakes and Cheap Fakes," September 18, 2019; Dodge, "Digitizing Rape Culture"; Matthew A Baum, Dara Kay Cohen, and Yuri M Zhukov, "Rape Culture and Sexual Crime," n.d., 62; DeKeseredy and Schwartz, "Thinking Sociologically About Image-Based Sexual Abuse"; Henry, Flynn, and Powell, "Technology-Facilitated Domestic and Sexual Violence"; Langlois and Slane, "Economies of Reputation"; Corey Call, "Perceptions of Image-Based Sexual Abuse Among the American Public," *Criminology, Criminal Justice, Law & Society* 22, no. 3 (December 1, 2021), https://doi.org/10.54555/ccjls.3769.30145; Jørgensen and Demant, "Shame, Shaming and Economy: A Theory of Image-Based Sexual Abuse Within Different Online Sharing Environments," March 20, 2021; Harder, "Re-Faced and Pornified—a Visual, Narrative Analysis of Sexual Scripts in Police Cases of Image-Based Abuse," July 5, 2022.

visceral, embodied, and radially infectious harms resulting from experiences of abuse that 'forever changed' the lives of participants[215]

MyGlynn et. al. (2021) defined this notion of utter devastation as 'social rupture,' "Their [participant] narratives conveyed a sense in which the abuse was experienced as a marked and overwhelming breach – or rupture – that radically disrupted their lives, altering their sense of self, their identity and their relationships with their bodies and others."[216] Thus, these 'ruptures' or 'changes' emerged in the areas of visceral and embodied harms (immediate and existing); escalation and radiation of abuse, coping with feelings of blame and guilt; accepting the burden of responsibility (for victimization and avoiding revictimization); isolation and behavior changes.

Visceral and Embodied Harms.

Experiences of IBSA and sexual deepfakes demand considerations of sexual violence when corporeality is no longer a requirement where the absence of its presence has become a distinguishing characteristic.[217] This sub-theme emerged from the permanent disruption found within participant relationships with themselves and others, resulting in irreparable harm that permeated every aspect of their offline and online worlds personally, professionally, and socially:

[215] Ann N Hellman, "A Hermeneutic Phenomenological Study of the Lived Experience of Adult Female Sexual Assault Survivors," n.d.
[216] "McGlynn et al. - 2021 - 'It's Torture for the Soul' The Harms of Image-Ba.Pdf," n.d.
[217] Hamid, "A Study of Sexual Violence in the Digital Age: Working with Technology-Facilitated Sexual Violence against Women within Sexual Violence Support Services," n.d.

> This affects people's lives. It is ingrained in mine - it dictates how I act, where I feel safe, and is something I am forced to come to terms with, in order to continue existing. – Kathy[218]

Participants experienced severe and debilitating impacts immediately after learning of their abuse and well after the initial event had passed. Distinct from traditional sexual violence were the repercussions and reiterations of online and offline abuse that occurred in experiences of IBSA, sexual deepfakes, and SSEM.[219] While this does not seek to minimize the impacts and harms experienced by victim-survivors of physical sexual violence, unique to offenses of IBSA is the infinite proliferation and opportunities for abuse to be perpetrated and subsequently experienced. For these reasons, the immediate and existing harms must be understood.

Immediate. Victim-survivors depicted their experiences as highly personal and invasive, causing immediate emotional and physiological responses. These responses often reflect the experiences of survivors of traditional sexual violence and recent research on experiences of image-based sexual abuse (IBSA).[220] Akin to many other female victim-survivors of rape, sexual assault, technology-facilitated sexual violence (TFSV), and

[218] Gibi (@GibiOfficial), "Deepfake Video Transcript."
[219] Hall, Hearn, and Lewis, "Image-Based Sexual Abuse: Online Gender-Sexual Violations"; Henry and Flynn, "Image-Based Sexual Abuse," December 2019; McGlynn and Rackley, "Image-Based Sexual Abuse," 2017; Brandon Sparks, "A Snapshot of Image-Based Sexual Abuse (IBSA): Narrating a Way Forward," *Sexuality Research and Social Policy* 19, no. 2 (June 2022): 689–704, https://doi.org/10.1007/s13178-021-00585-8; Yar, "E-Crime 2.0."
[220] Professor Clare McGlynn and Professor Erika Rackley, "Shattering Lives and Myths:," n.d.; Eaton and McGlynn, "The Psychology of Nonconsensual Porn"; McGlynn et al., "'It's Torture for the Soul,'" August 1, 2021; Nicola Gavey and Johanna Schmidt, "'Trauma of Rape' Discourse: A Double-Edged Template for Everyday Understandings of the Impact of Rape?," *Violence Against Women* 17, no. 4 (April 1, 2011): 433–56, https://doi.org/10.1177/1077801211404194; Rebecca M. Loya, "Rape as an Economic Crime: The Impact of Sexual Violence on Survivors' Employment and Economic Well-Being," *Journal of Interpersonal Violence* 30, no. 16 (October 2015): 2793–2813, https://doi.org/10.1177/0886260514554291.

IBSA,[221] female victim-survivors expressed their experiences as inescapable and utterly devastating to the point in which they contemplated suicide:

> I was I felt like being regarded as nothing. I felt depressed. I felt a lot of things like I cried, and I felt like taking my life like committing suicide. – Lia

> At times it felt like the public hate was almost as bad as the abuse itself because this tough exterior I sometimes like to project is really just a façade, unconvincing to those close to me who know I'm more sensitive and fragile than most. After I spoke out, I tried hanging myself with rope on the swing in my backyard. My father stopped me and almost had to call the ambulance. – Ella[222]

Annie, a lived experience expert of sexual deepfakes, discovered her victimization after her friend sent her a deepfake video of her that had 'gone viral' on Twitter. She described experiencing intense physical reactions such as nausea, vomiting, anxiety, and heart palpitations, all of which are consistent with previous literature on rape and IBSA[223] victim-survivors:

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[221] Henry and Flynn, "Image-Based Sexual Abuse," December 2019; Henry, Powell, and Flynn, "Not Just 'Revenge Pornography'"; McGlynn et al., "'It's Torture for the Soul,'" August 1, 2021; Amanda Spallacci, "Representing Rape Trauma in Film: Moving beyond the Event," *Arts* 8, no. 1 (January 9, 2019): 8, https://doi.org/10.3390/arts8010008; Bates, "Revenge Porn and Mental Health," January 2017; Amanda Champion, Flora Oswald, and Cory L. Pedersen, "Technology-Facilitated Sexual Violence and Suicide Risk: A Serial Mediation Model Investigating Bullying, Depression, Perceived Burdensomeness, and Thwarted Belongingness," *The Canadian Journal of Human Sexuality* 30, no. 1 (April 1, 2021): 125–41, https://doi.org/10.3138/cjhs.2020-0044; Emily R. Dworkin et al., "Sexual Assault Victimization and Psychopathology: A Review and Meta-Analysis," *Clinical Psychology Review* 56 (August 2017): 65–81, https://doi.org/10.1016/j.cpr.2017.06.002; Borke Obada-Obieh et al., "SoK: The Dual Nature of Technology in Sexual Abuse," in *2022 IEEE Symposium on Security and Privacy (SP)* (2022 IEEE Symposium on Security and Privacy (SP), San Francisco, CA, USA: IEEE, 2022), 2320–43, https://doi.org/10.1109/SP46214.2022.9833663; Champion, Oswald, and Pedersen, "Technology-Facilitated Sexual Violence and Suicide Risk"; Chan, "Becoming Pornography: White Women, Voyeuristic Surveillance, and Image-Based Sexual Abuse"; Heyes, "Dead to the World."

[222] Martin, "Image-Based Sexual Abuse and Deepfakes," 2021.

[223] Bates, "Revenge Porn and Mental Health," January 2017; Dodge, "Digitizing Rape Culture"; Killean, McAlinden, and Dowds, "Sexual Violence in the Digital Age"; McGlynn et al., "'It's Torture for the Soul,'" August 2021; Rackley et al., "Seeking Justice and Redress for Victim-Survivors of Image-Based Sexual Abuse," November 2021; McGlynn and Rackley, "Shattering Lives and Myths:"; Flynn et al., "Deepfakes and Digitally Altered Imagery Abuse"; Henry, Flynn, and Powell, "Technology-Facilitated Domestic and Sexual Violence"; Andersson et al., *Rape Narratives in Motion*; Widanaralalage et al., "'I Didn't Feel I Was A Victim'"; Ashley, "Exploring Growth Outcomes in the Aftermath of Rape: An Interpretative Phenomenological Analysis"; Cressida J Heyes, "Dead to the World: Rape,

> What he sent me was a porn video, and the woman in it was me. When I first opened it, I was shocked to see my face, but I could tell it wasn't actually me because, for one, I have curly hair and the woman had straight hair. She also looked really young, not more than 17 or 18. I started throwing up. I just didn't know what to do. In a country like India, I knew this was a big deal. I didn't know how to react, I just started crying…People started sending me WhatsApp messages asking me for my rates for sex. I was sent to the hospital with heart palpitations and anxiety, the doctor gave me medicine. But I was vomiting, my blood pressure shot up, my body had reacted so violently to the stress. I couldn't sleep for three nights. I couldn't talk, I couldn't believe what was happening. I was numb. – Annie[224]

Ella similarly experienced peritraumatic distress through violent physical and emotional reactions:

> Within a split second of undertaking a reverse Google image search, my laptop screen was plastered with dozens of links to images of me on numerous pornographic sites across multiple pages of search results. My stomach sank to the floor. My heart was pounding out of my chest. My eyes widening in shock and disbelief. I was completely horrified. – Ella[225]

Other participants described experiencing a sense of severe shock, in most cases to the point where participants described feeling frozen or stuck; this is a common response to sexual assault, rape, and other violent crimes referred to as tonic immobility.[226] Tonic

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Unconsciousness, and Social Media," n.d., 23; Kelly, *Surviving Sexual Violence*, 1988; McGlynn and Rackley, "Image-Based Sexual Abuse," 2017; Flynn, Powell, and Hindes, "Technology-Facilitated Abuse: A Survey of Support Services Stakeholders."

[224] Ayyub, "In India, Journalists Face Slut-Shaming and Rape Threats," May 22, 2018; Ayyub, "I Was The Victim Of A Deepfake Porn Plot Intended To Silence Me," n.d.

[225] Martin, "Image-Based Sexual Abuse and Deepfakes," 2021.

[226] Rita de Cassia S. Alves et al., "Exposure to Trauma-Relevant Pictures Is Associated with Tachycardia in Victims Who Had Experienced an Intense Peritraumatic Defensive Response: The Tonic Immobility," *Frontiers in Psychology* 5 (2014), https://doi.org/10.3389/fpsyg.2014.01514; GRACE GALLIANO et al., "Victim Reactions During Rape/Sexual Assault: A Preliminary Study of the Immobility Response and Its Correlates," *Journal of Interpersonal Violence* 8, no. 1 (1993): 109–14, https://doi.org/10.1177/088626093008001008; Michelle J. Bovin et al., "Tonic Immobility Mediates the Influence of Peritraumatic Fear and Perceived Inescapability on Posttraumatic Stress Symptom Severity among Sexual Assault Survivors," *Journal of Traumatic Stress* 21, no. 4 (August 2008): 402–9, https://doi.org/10.1002/jts.20354; Adrian W. Coxell and Michael B. King, "Adult Male Rape and Sexual Assault: Prevalence, Re-Victimisation and the Tonic Immobility Response," *Sexual and Relationship Therapy* 25, no. 4 (November 2010): 372–79, https://doi.org/10.1080/14681991003747430; Juliana Kalaf et al., "Sexual Trauma Is More Strongly Associated with Tonic Immobility than Other Types of Trauma – A Population Based Study," *Journal of Affective Disorders* 215 (June 2017): 71–76, https://doi.org/10.1016/j.jad.2017.03.009.

immobility is a type of peritraumatic distress most frequently associated with sexual assault and rape.[227] In addition, tonic immobility has been found to affect individuals viewing violent imagery and films,[228] explained by the trauma-film paradigm as well as the result that occurs when victims of violent crimes view imagery related to the crimes they experienced.[229] Rebecca, a lived experience expert of sexual deepfakes, described experiencing tonic immobility after receiving the email containing a deepfake video of herself:

> I remember sitting down receiving that email. I think it was like you're frozen for that moment of time. It [deepfake video] was depicting me having sexual intercourse, and the title of the video had my full name. And

[227] Andersson et al., *Rape Narratives in Motion*; Widanaralalage et al., "'I Didn't Feel I Was A Victim'"; Rosewarne, "Abuse as Artefact: Understanding Digital Abuse of Women as Cultural Informant"; Kelly, *Surviving Sexual Violence*, 1988; Ashley, "Exploring Growth Outcomes in the Aftermath of Rape: An Interpretative Phenomenological Analysis"; Baum, Cohen, and Zhukov, "Rape Culture and Sexual Crime"; Heyes, "Dead to the World: Rape, Unconsciousness, and Social Media"; Loya, "Rape as an Economic Crime," October 1, 2015; Dworkin et al., "Sexual Assault Victimization and Psychopathology"; Careen Hutchinson, "Darfur Conflict: A Phenomenological Study of Female Victims' Perception of Justice," n.d., 309; Kelly, "The Continuum of Sexual Violence," 1987; Gavey and Schmidt, "'Trauma of Rape' Discourse: A Double-Edged Template for Everyday Understandings of the Impact of Rape?"

[228] Anne A. Cuperus et al., "A Virtual Reality Paradigm as an Analogue to Real-Life Trauma: Its Effectiveness Compared with the Trauma Film Paradigm," *European Journal of Psychotraumatology* 8, no. sup1 (November 10, 2017): 1338106, https://doi.org/10.1080/20008198.2017.1338106; Ella L. James et al., "The Trauma Film Paradigm as an Experimental Psychopathology Model of Psychological Trauma: Intrusive Memories and Beyond," *Clinical Psychology Review* 47 (July 1, 2016): 106–42, https://doi.org/10.1016/j.cpr.2016.04.010; J. M. E. Kuiling, F. Klaassen, and M. A. Hagenaars, "The Role of Tonic Immobility and Control in the Development of Intrusive Memories after Experimental Trauma," *Memory* 27, no. 6 (July 3, 2019): 772–79, https://doi.org/10.1080/09658211.2018.1564331; Grace Galliano et al., "Victim Reactions During Rape/Sexual Assault: A Preliminary Study of the Immobility Response and Its Correlates," *Journal of Interpersonal Violence* 8, no. 1 (1993): 109–14, https://doi.org/10.1177/088626093008001008.

[229] Grace Galliano et al., "Victim Reactions During Rape/Sexual Assault: A Preliminary Study of the Immobility Response and Its Correlates," *Journal of Interpersonal Violence* 8, no. 1 (1993): 109–14, https://doi.org/10.1177/088626093008001008; J. M. E. Kuiling, F. Klaassen, and M. A. Hagenaars, "The Role of Tonic Immobility and Control in the Development of Intrusive Memories after Experimental Trauma," *Memory* 27, no. 6 (July 3, 2019): 772–79, https://doi.org/10.1080/09658211.2018.1564331; Anne A. Cuperus et al., "A Virtual Reality Paradigm as an Analogue to Real-Life Trauma: Its Effectiveness Compared with the Trauma Film Paradigm," *European Journal of Psychotraumatology* 8, no. sup1 (November 10, 2017): 1338106, https://doi.org/10.1080/20008198.2017.1338106; Rita de Cassia S. Alves et al., "Exposure to Trauma-Relevant Pictures Is Associated with Tachycardia in Victims Who Had Experienced an Intense Peritraumatic Defensive Response: The Tonic Immobility," *Frontiers in Psychology* 5 (2014), https://doi.org/10.3389/fpsyg.2014.01514.

> then I saw another video that was depicting me performing oral sex. – Rebecca[230]

Fran, a lived experience expert of sexual deepfakes, described a similar state of feeling physically restricted, anchored by fear, anxiety, and shock:

> Towards the end of last year, I discovered, through an acquaintance, that someone had been uploading non-intimate photos from my private social media accounts to a porn site, inviting other users to turn them into 'fakes'. I felt dizzy and sick. I remember holding on to my chair as if it would anchor me. Later that day, I decided that I needed to see the images for myself. – Fran[231]

Experiences of tonic immobility were not unique to women. Male victim-survivors, such as Luke, portrayed similar experiences of shock:

> I felt chills run down my body. I became frozen with fear...I guess I would describe it as shutting down, my body freezing up. My limbs kind of going cold or getting a cold sensation. Didn't really have any thoughts going on. I wanted to throw up. I felt sick. – Luke

Further, for many victim-survivors these experiences of peritraumatic distress were perpetual. Because of the speed and scope of the Internet as well as its archival nature, there were few resources for victim-survivors to prevent or minimize the continuation of abusive experiences. For victim-survivors of sexual deepfakes, their experiences were described as watching themselves get sexually assaulted or raped:

> It felt like it was me…It was my face on the naked women…. I felt broken. I was in pain…I did not sleep or eat, and I was physically weak...I felt sexually abused, like virtual rape. – Lia

> Words cannot describe the violation I felt seeing myself, my identity, name, body, and agency being misappropriated and misrepresented in this way. The emotional toll the abuse was taking on me was significant. – Ella[232]

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[230] Abram, "The Most Urgent Threat of Deepfakes Isn't Politics. It's Porn.: A Video Explainer with Kristen Bell."
[231] Jackson, "Behind Every Image Is a Person."
[232] Martin, "Image-Based Sexual Abuse and Deepfakes," 2021.

> That night, I went on to the porn site in question and scrolled through countless pictures of 'me' being abused and humiliated. Someone had taken holiday photos from my Facebook and Insta and uploaded them to a porn site. They claimed to be my boyfriend and suggested other users generate 'fakes' of me; they said I was a 'blonde slut' and they fantasised about seeing me 'used hard' by other men. Nothing can describe the shock of seeing yourself be violated. My smiling face – lifted from treasured photos, when I'd been carefree and happy – had been edited on to images of gang rape and strangulation. Some fake images weren't especially realistic – the editing was clearly amateur – but other images were frightening in their plausibility. – Fran[233]

Each instance participants were exposed to sexual deepfakes of themselves was described as a new experience of abuse. Seeing themselves engage in sexual activity they never did, some of the women had been superimposed into violent and rape-themed content, which was devastating. This caused women to live in an existential feeling of fear, anxiety, and a perpetual state of being abused. Similar to rape and sexual assault survivors, women described seeing intrusive images and having nightmares of being abused:[234]

> For days, I felt scared, ashamed and didn't want to be seen by anybody. I had to cancel work and even collecting my son from nursery became an ordeal. Then, the nightmares started, violent scenes from the photos playing out in my head when I tried to sleep... I imagined each man who passed me sneering and laughing at me, fearing they might've seen the images – which, given an acquaintance had, wasn't far-fetched. I couldn't even find relief in sleep: whenever I closed my eyes, the images appeared…I'm still having nightmares about some of them now. It's an incredibly serious form of abuse. – Fran[235]

[233] Mort, "I Was a Victim of Deepfake Porn."
[234] Barry Krakow et al., "Nightmare Frequency in Sexual Assault Survivors with PTSD," *Journal of Anxiety Disorders* 16, no. 2 (January 1, 2002): 175–90, https://doi.org/10.1016/S0887-6185(02)00093-2; Westley A. Youngren, Nancy A. Hamilton, and Kris j. Preacher, "Assessing Triggers of Posttrauma Nightmares," *Journal of Traumatic Stress* 33, no. 4 (August 1, 2020): 511–20, https://doi.org/10.1002/jts.22532.
[235] Mort, "I Was a Victim of Deepfake Porn"; Jackson, "Behind Every Image Is a Person."

Intrusive images are a common experience in survivors of sexual assault and rape, occurring in the form of nightmares or seeing abuse when closing their eyes.[236] Victim-survivors of sexual deepfakes may also experience intrusive images as a result of their experience especially considering the perennial nature of abuse and their abuse is visually tangible – upon exposure, they are experiencing a new form of abuse as well as being reminded of the initial abusive experience.

Existing. The perennial and existing nature of experiences was unique to female victim-survivors of sexual deepfakes. The entirety of female participants expressed irreparable harms to their livelihood, their existence defined by a continual state of anxiety, worry, or dread knowing that the media could and eventually would be (re)created, (re)disseminated, and (re)discovered such as what Ella described.

> It felt like a race against time, just hoping that nobody I knew would stumble upon them. Feeling utterly alone, scared, violated, degraded, and dehumanised, I contacted the sites one by one, sending the webmasters standardised requests to delete the material that had been created and shared without my consent. As these sites had been in existence and operating for many months, likely even a year (since I was 17 years old) before I discovered the images, I didn't know then what I know now, which is that by the time I found out, the damage was done. It was already too late...the images had already proliferated so much that I would never, ever, be able to guarantee they would not resurface (or control how they would resurface) weeks, months, or even years later. – Ella[237]

Experiences of male participants were identified as more episodic. Men found time as a source of healing. The further away from the initial event was, the easier moving on and recovery became. This was evident in the case of Luke, a survivor of multiple events of

[236] Cuperus et al., "A Virtual Reality Paradigm as an Analogue to Real-Life Trauma: Its Effectiveness Compared with the Trauma Film Paradigm"; James et al., "The Trauma Film Paradigm as an Experimental Psychopathology Model of Psychological Trauma: Intrusive Memories and Beyond"; Kuiling, Klaassen, and Hagenaars, "The Role of Tonic Immobility and Control in the Development of Intrusive Memories after Experimental Trauma."
[237] Martin, "Image-Based Sexual Abuse and Deepfakes," 2021.

sextortion and non-consensual dissemination of sexually explicit material (NCDSEM), "It gets better or easier, the longer they [other victim-survivors] are each day away from the event, the easier it is not to think about it." Luke also reported that in one instance, upon his refusal to comply with the perpetrator's demands, followed by his complete disengagement the perpetrator "disappeared."

> I said I just don't have any money and I only had like $50 in my bank account, and they went from like a multiple $1,000 extortion amount to saying, 'Yeah we'll take that [$50]'…So at that point, I just stopped answering and it kind of just disappeared after a while. – Luke

Female participants did not describe the same sense of healing after the initial event, as their abuse was continuous, often escalating or radiating over time. The continuation of abuse often transcended the boundaries of the virtual and physical through the comments and threats women received long after the initial event had occurred. Rather than the abuse being limited to a single point in time, the anonymity, accessibility, and affordability of the Internet protects perpetrators over victim-survivors, allowing them to collaborate and perpetuate abuse infinitely. Aly a lived experience expert of sexual deepfakes found the dichotomy between the virtual and physical frustrating and senseless because of the impact of harm she had experienced:

> It's incredibly frustrating because I feel like there's definitely a weird separation of "the virtual world" and "the real world", and that isn't where we live anymore. We're not going into our Internet browsers via dial up – every single element of our lives is integrated online…I was getting threats like they were going to follow me home while it was dark, and that they were going to rape me, film it and upload it to the Internet… There's millions of people who are accessing this content and actively participating in these forums, and adding really graphic and sexual comments, or placing people they know in really disturbing scenes and

> then encouraging others to send these images to the girls on Instagram. They're out there wanting to actively cause distress and harm. – Aly[238]

This was often spoken of in tandem with beliefs that 'the internet is forever,' because of the reverberations of abuse, the general inability to remove the content, and the speed at which it multiplies online:

> It started back in 2017 and they are currently still currently being kind of spread...it's the internet and once something is there it's kind of there forever and it's in so many people hands. – Mary

> Another tweet was circulated on social media with a screenshot of the video and my number alongside, saying 'Hi, this is my number and I'm available here.' People started sending me WhatsApp messages asking me for my rates for sex. – Annie[239]

The episodic nature in which male participants described their experiences was highly inconsistent with that of female participants who, despite continuous requests for removals, blocking, or other means to limit their victimization, were subjected to permanent and continuous abuse and harm. River, a male survivor of IBSA and SSEM, was even able to quantify his recovery period, "I got over it in less than a year." Although Luke did not report having persistent experiences of abuse, he did acknowledge the possibility of other experiences resulting in reiterations of abuse, "Even though it is a problem, it wasn't a permanent one in my instance at least."

While these experiences were agreeably traumatizing and severely harmful, male participants characterized experiences as distinct and ephemeral periods in their lives, with distinct beginnings and definite ends. This is in no way intended to minimize or undermine the severity of trauma or negative impacts experienced by male victim-

[238] Cockerham, "Deepfake Porn Wrecks Lives – but, as One Woman Discovered, It Takes Just 8 Seconds to Make an Image."
[239] Ayyub, "I Was The Victim Of A Deepfake Porn Plot Intended To Silence Me," n.d.

survivors but rather to suggest that perpetual and 'rhizomatic' abuse is uniquely experienced by female victim-survivors. This is consistent with previous literature on the gender differences in victim-survivor experiences of technology-facilitated sexual violence (TFSV) and IBSA, where men and women may experience abuse at similar rates. Still, women's experiences are demarcated by their severity and longevity.[240]

Escalation and Radiation of Abuse.

Coinciding with the permanency of visceral reactions was the escalation and radiation of abuse that female victim-survivors of sexual deepfakes described. This significantly contributed to the proliferation and lasting impact that their experiences had on their lives and continue to have on their lives. This was consistent with previous findings on victim-survivors of IBSA as well as the only study on lived experiences of sexual deepfakes.[241] Studies on IBSA and TFSV have also demonstrated how the increased "blurring and co-occurrence" between online and offline abuses heightened the potential risk for future and more frequent experiences of online-offline victimization and increased the possible severity of harmful impact victim-survivors experienced, which

[240] Eaton and McGlynn, "The Psychology of Nonconsensual Porn"; Flynn, Powell, and Hindes, "Technology-Facilitated Abuse: A Survey of Support Services Stakeholders"; Henry, Flynn, and Powell, "Technology-Facilitated Domestic and Sexual Violence"; McGlynn, Rackley, and Houghton, "Beyond 'Revenge Porn': The Continuum of Image-Based Sexual Abuse"; Bates, "Revenge Porn and Mental Health," January 2017; Flynn et al., "Deepfakes and Digitally Altered Imagery Abuse"; McGlynn and Rackley, "Image-Based Sexual Abuse," 2017; Rackley et al., "Seeking Justice and Redress for Victim-Survivors of Image-Based Sexual Abuse," November 2021; McGlynn et al., "'It's Torture for the Soul,'" August 1, 2021.

[241] Flynn et al., "Deepfakes and Digitally Altered Imagery Abuse"; Anastasia Powell and Nicola Henry, "Technology-Facilitated Sexual Violence Victimization: Results From an Online Survey of Australian Adults," *Journal of Interpersonal Violence* 34, no. 17 (September 1, 2019): 3637–65, https://doi.org/10.1177/0886260516672055; Champion et al., "Examining the Gendered Impacts of Technology-Facilitated Sexual Violence: A Mixed Methods Approach."

was found in the current study as well.[242] While every participant experienced polyvictimization to some degree, female participants were distinguished by their persistent and increasingly violent experiences of abuse that permeated every aspect of their lives.

Perpetrators of intimate partner violence prevent victims from leaving abusive relationships through psychological or physical tactics of control and manipulation, which now include sexual deepfakes. Other forms of image-based sexual abuse, such as sexting coercion have been identified as part of the myriad of abuses experienced by victim-survivors.[243] Recent literature by Lucas (2022) and Dodge (2021) have furthered these findings suggesting the possibility of domestic violence and intimate partner violence serving as a source and/or a consequence of sexual deepfakes.[244]

Consistent with predictions of future deepfakes being used to perpetrate domestic violence and intimate partner violence,[245] Lia narrated a detailed timeline of the many forms of abuse she experienced, all of which stemmed from her attempt to leave a physically and emotionally abusive relationship, "I broke up with him because I thought

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[242] Hall, Hearn, and Lewis, "Image-Based Sexual Abuse: Online Gender-Sexual Violations"; Henry and Powell, "Embodied Harms"; Clare McGlynn and Erika Rackley, "Image-Based Sexual Abuse," *Oxford Journal of Legal Studies* 37, no. 3 (2017): 534–61, https://doi.org/10.1093/ojls/gqw033; Killean, McAlinden, and Dowds, "Sexual Violence in the Digital Age"; Henry, Flynn, and Powell, "Technology-Facilitated Domestic and Sexual Violence"; Adam Dodge et al., "Using Fake Video Technology To Perpetuate Intimate Partner Abuse," n.d.; Henry and Flynn, "Image-Based Sexual Abuse," December 2019; Chiara Gius, "Addressing the Blurred Question of 'Responsibility': Insights from Online News Comments on a Case of Nonconsensual Pornography," *Journal of Gender Studies* 31, no. 2 (February 17, 2022): 193–203, https://doi.org/10.1080/09589236.2021.1892610; Lucas, "Deepfakes and Domestic Violence: Perpetrating Intimate Partner Abuse Using Video Technology."

[243] Jessica J Eckstein, "What Is Violence Now?: A Grounded Theory Approach to Conceptualizing Technology-Mediated Abuse (TMA) as Spatial and Participatory," n.d.; DeKeseredy and Schwartz, "Thinking Sociologically About Image-Based Sexual Abuse"; Henry, Flynn, and Powell, "Technology-Facilitated Domestic and Sexual Violence."

[244] Lucas, "Deepfakes and Domestic Violence: Perpetrating Intimate Partner Abuse Using Video Technology"; Adam Dodge et al., "Using Fake Video Technology To Perpetuate Intimate Partner Abuse," n.d.

[245] Adam Dodge et al., "Using Fake Video Technology To Perpetuate Intimate Partner Abuse," n.d.; Lucas, "Deepfakes and Domestic Violence: Perpetrating Intimate Partner Abuse Using Video Technology."

he was cheating on me…I confronted him, and he hit me." Not too long after this, she received a WhatsApp status update containing a video of her and her ex-boyfriend engaging in sex acts. Her face was visible, and his face was not. Her name and other identifying information were attached to the video, and his were not. She had not consented to the video being filmed or shared, "He recorded me and I didn't know…but it [the video] blurred his face."[246] The video was shared on WhatsApp, Facebook, Twitter, and a pornography website.

She was inundated with sexually harassing and violating comments from peers, family, and strangers, "A bunch of people were saying like you're a hot bitch and a lot of other things… nasty whore, nasty slut." Other individuals began contributing to her abuse by creating synthetic sexually explicit media of her and selling it online and harassing her with unsolicited requests to pay her abuser to rape Lia:

> They said things like, 'I like your boobs,' 'I want to touch you,' 'how much,' 'I want to feel you and fuck your pussy,' all sorts of things like that…They said they are going to pay [to rape her]. – Lia

Her experience was not uncommon. Other victim-survivors described a similar situation of escalations of abuse that included being superimposed into sexually explicit and violent media, unsolicited requests to engage in commercial sex, rape threats, death threats, objectifying and dehumanizing commentary, doxing, and victim-blaming and 'slut'-shaming by friends, family, and strangers. To demonstrate the escalation and radiation of abuse occurring both online and offline, the following sub-section will

[246] The victim-survivor used the pronoun "he" while describing this event, there were multiple males involved in her situation (ex-boyfriend and friends) but per IRB stipulations, she was asked not to specify who 'he' was, to protect her and the perpetrators privacy and maintain anonymity.

briefly describe the experiences of female victim-survivors of sexual deepfakes and examples of their polyvictimization:

- **Unsolicited requests for commercial sex.** Five participants knowingly were solicited for sex after they had been victimized by sexual deepfakes and/or SSEM. Two victim-survivors were harassed by men wanting to pay their abusers to rape them:

  > Two days after the video started doing the rounds, a man stopped me in the street when I was walking by myself and asked for oral sex. He brought up the video. It was horrible, it felt like everybody believed it. People would laugh and jeer and mock me in the street. – Julie[247]

- **Rape threats.** Seven women received rape threats following their abuse. Women were inundated with rape threats from strangers across the Internet and in person. The violent nature of these threats alludes to a larger issue of gender-based violence:

  > My social media accounts and my phone were inundated with WhatsApp messages urging others to gang-rape me. – Annie[248]

- **Doxing.** Every participant in the current study experienced doxing. Some had their first and last names, birthdays, addresses, places of employment, or social media handles posted with sexual deepfakes:

  > They would include my name on it, but I have a pretty common last name. People have turned up old addresses but I'm not in school right now so nothing extremely identifying. Sometimes my last name would be on there, but I don't have much stuff online. – Mary

  > They found and posted my address and my work address on Twitter. – Aly[249]

[247] Enright, "The World of Deepfake Porn: How Fabricated Videos Are Being Used to Harm Women"; Jennifer Savin, "Deepfake Porn Is on the Rise – and Everyday Women Are the Target.," *Cosmopolitan*, October 6, 2022, https://www.cosmopolitan.com/uk/reports/a41534567/what-are-deepfakes/.
[248] Ayyub, "In India, Journalists Face Slut-Shaming and Rape Threats," May 22, 2018.
[249] Maya Oppenheim, "'I Discovered Deepfake Porn of Myself Online,'" *Independent UK*, November 25, 2022, https://www.independent.co.uk/news/uk/home-news/deepfakes-porn-downblousing-crime-b2232913.html.

- **'Slut'-shaming.** Every sexual deepfake victim-survivor experienced 'slut'-shaming. Women were harassed, silenced, sexualized, judged, and abused because of their gender:

> The slut-shaming and hatred felt like being punished by a mob for my work as a journalist, an attempt to silence me. It was aimed at humiliating me, breaking me by trying to define me as a "promiscuous," "immoral" woman. – Annie[250]

Women experienced a multitude of online and offline abuse after the initial experience of abuse was over. There was a general awareness of the lack of recourse victim-survivors had in regaining control over their situation, significantly impacting their ability to recover.

Impact and Recovery.

Victim-survivors described a sense of being 'forever changed' through the irreparable impact on their emotional, physical, and social well-being.

> [t]he effects have stayed with me. I always thought no one could harm me or intimidate me, but this incident really affected me in a way that I would never have anticipated... But this has changed me. – Annie[251]

For many participants, this event marked a distinct change in their lives and how they perceived themselves in society. It was something that profoundly affected and became an engrained and defining aspect of their existence. Often, their existence was muddled by their experiences through descriptions of being incapable of moving on or finding a way to cope with their new perceived sense of self.

[250] Ayyub, "In India, Journalists Face Slut-Shaming and Rape Threats," May 22, 2018.
[251] Ayyub, "I Was The Victim Of A Deepfake Porn Plot Intended To Silence Me," n.d.

> I didn't follow any of my own advice. [Aly] the campaigner was very strong and didn't show any vulnerability - and then there was me, [Aly], who was really scared. – Aly[252]
>
> I don't really think of myself that way [as a survivor], just kind of like it's something that happened and I'm just trying to get past it…I feel like I'm still in the victim stage I guess because I haven't really moved past it. – Mary

One of the most striking examples of the inability to recover and the state of not knowing what can be done was at the end of one of the interviews when a female victim-survivor asked for help. What was so unique about this instance was not that she needed resources for help but that she spent the entire interview using single-word responses or short phrases when answering questions. She exhibited extremely defensive behavior, and for a good reason – it was the first time she had ever spoken to someone outside of her immediate circle of trust. At the close of the interview, I understood this behavior not as short or rude but as a defense mechanism to avoid experiencing re-traumatization or allowing herself to feel the impact of her experience for possibly the first time. The following dialogue is from me as the interviewer and Judy:

> Interviewer: Are you feeling okay? Do you need anything?
> Judy: I think I need help from you.
> Interviewer: Do you have all the resources?
> Judy: No, you need to help me do it…
> Interviewer: What do you need help doing?
> Judy: The experience, the trauma, I need someone.[253]

The inability to cope and recover because she felt this was not a crime or something she was rightfully entitled to feel traumatized by is a severe human rights violation. This has been evident in victim-survivors of rape, where misunderstandings

[252] Cockerham, "Deepfake Porn Wrecks Lives – but, as One Woman Discovered, It Takes Just 8 Seconds to Make an Image."

[253] While it was not part of the study to assist with trauma, she was provided with a list of resources and specific directions on how to access the resources and which would be the most helpful for her particular situation and needs. She did not express any desire to stop the interview and was told that she was able to stop the interview at any moment in time without reason.

leave victim-survivors minimized and failure to recognize the extent of harm endured. It is crucial that victim-survivors are listened to and can freely express their trauma in a way that is healthy and validating.

Other victim-survivors addressed the current state of alienation that victims of sexual deepfake experience due to the proliferation of the false dichotomy between virtual and real harms. Participants themselves struggled to grapple with the idea that the harm they were experiencing was valid and real. This was seen in minimizing and deflecting commentary such as "It feels stupid to repeat any of it," or through contradicting words and expressions. Mary repeatedly expressed that she "doesn't really cry about things" and more often, she "gets really angry and frustrated," even though she was sniffling, crying, and choking on her words throughout the entire interview.

Additionally, the constant state of fear and paranoia that women expressed living in after their abuse was unique to those who experienced sexual deepfake abuse such s Aly, "I became completely paranoid – 'Who knows my address? Is it someone I know that's done this?' I was thinking, 'I'm really in trouble here, this isn't just some people on the internet mouthing off, there's actually a real danger.'"[254] Their abuse was felt as never-ending, making recovery extremely difficult, which some participants described as maintaining a 'victim mentality.

The struggle experienced by victim-survivors in their transition to adopting a survivor mentality is consistent with victim-survivors of rape and technology-facilitated sexual violence (TFSV) and other forms of IBSA as they desire to understand themselves

[254] *Deepfake Porn: Could You Be Next?*

as survivors but find it arduous to move past the victim mentality.[255] However, the proliferation and severity of abuse and harm they experienced hindered the process of recovery for the majority of victim-survivors. When participants were asked if they consider themselves a survivor, many answered negatively as they couldn't see how to continue existing in the way they were prior to the initial incident. Many also identified the lack of knowledge that the images could be removed, such as Mary, "I didn't really know you could do that [request image removal]?" The persistent nature of abuse also hindered their ability to conceptualize what recovery would look like – because victim-survivors did not know how to create a plan to remove or a plan of resolution after the event. This ties into the idea of hopelessness, which is elaborated on in the following section.

Hopelessness.

For every female participant, the existing state of abuse was accompanied by a perpetual state of hopelessness. Hopelessness was felt in their 'futile' removal efforts,

[255] Hellman, "A Hermeneutic Phenomenological Study of the Lived Experience of Adult Female Sexual Assault Survivors"; Henry, Flynn, and Powell, "Technology-Facilitated Domestic and Sexual Violence"; Careen Hutchinson, "Darfur Conflict: A Phenomenological Study of Female Victims' Perception of Justice," n.d., 309; Ashley, "Exploring Growth Outcomes in the Aftermath of Rape: An Interpretative Phenomenological Analysis"; Gavey and Schmidt, "'Trauma of Rape' Discourse: A Double-Edged Template for Everyday Understandings of the Impact of Rape?"; Martha McCaughey and Jill Cermele, "Violations of Sexual and Information Privacy: Understanding Dataraid in a (Cyber)Rape Culture," *Violence Against Women* 28, no. 15–16 (December 2022): 3955–76, https://doi.org/10.1177/10778012211070316; Spallacci, "Representing Rape Trauma in Film"; Widanaralalage et al., "'I Didn't Feel I Was A Victim'"; Solveig Laugerud, "Narrating the Harm of Rape: How Rape Victims Invoke Different Models of Psychological Trauma," *BioSocieties* 16, no. 1 (March 2021): 22–40, https://doi.org/10.1057/s41292-019-00178-0; Rebecca M. Loya, "Rape as an Economic Crime: The Impact of Sexual Violence on Survivors' Employment and Economic Well-Being," *Journal of Interpersonal Violence* 30, no. 16 (October 2015): 2793–2813, https://doi.org/10.1177/0886260514554291; Rosewarne, "Abuse as Artefact: Understanding Digital Abuse of Women as Cultural Informant"; Andersson et al., *Rape Narratives in Motion*; Heyes, "Dead to the World: Rape, Unconsciousness, and Social Media."

coping with the abuse, perpetrator accountability/justice, and their inability to seek support. Even when victim-survivor sought help from peers, family, therapists, spiritual/religious leaders, or law enforcement, they were met with victim-blaming and shaming attitudes:

> When we went to the station, the police wouldn't file a report. There were about six men in the police station, they started watching the video in front of me. You could see the smirks on their faces. They asked me where I was when I had first seen it. When I told them I had seen it at a cafe, they told me to go to the police station nearest to the cafe and file the complaint from there. I couldn't believe it. I was a woman standing in front of them who had mustered up the courage to file a complaint and they were trying to dodge it. – Annie[256]

Every participant addressed feelings of hopelessness in association with conversations around law enforcement and support seeking from police. As seen with rape, domestic violence, and other forms of IBSA, fear of retribution from perpetrators is a primary reason for not contacting the police.

> I was afraid of what he [perpetrator] would do or say if they found out. I was afraid of what he might do. – Judy

Other participants expressed hopelessness in a myriad of ways. Lia told me that she felt responsible for the situation, internalizing the shame, guilt, and blame placed on her by others, "It was my mistake…I lost. I had no one. I had no money, no job, nothing." Similar to Judy, Lia expressed conflicting feelings when asked if she considered going to the police. On the one hand she told me that at the time, she still loved her perpetrator, "I didn't want to hurt him. I still loved him," but on the other hand, she was afraid of what he might do to her considering that in previous instances he had physically abused her and that going to the police would escalate matters again:

[256] Ayyub, "I Was The Victim Of A Deepfake Porn Plot Intended To Silence Me," n.d.

> I thought [police] they would be unhelpful and just make matters worse for me. I didn't think there was anything they could do for me but I also was scared they would send him to prison for what he did to me. - Lia

Her sentiments are echoed by other victim-survivors regarding the inability to remove images either because of the sheer quantity or from being unaware of removal services.

> It kind of feels hopeless. Not knowing who to talk to like I said, not knowing what if I could do anything like [image removal] that. And then I guess I was also kind of like embarrassed. - Mary

For many victim-survivors, removal efforts often made situations worse rather than better:

> …the more I tried getting the material removed, the more sites I would discover, the more graphic the images were becoming and the more my images were being shared and seen. Sometimes I would be successful in getting an image or thread removed only to have it resurface on that same site weeks later. – Ella[257]

> They were against the campaign, and they were upset I had ridded Pornhub of their porn. After that, they started an attack on me online, they posted my work and home address on Twitter…They commented underneath they were going to find me, follow me home, rape me, film it and upload it to Pornhub. That was completely terrifying, I'd never experienced fear like that in my life. – Aly[258]

While many victim-survivors expressed the need for image removal, many also suggested that placing the responsibility on the victim to search, identify, and re-live experiences of abuse just to request sites to remove their images, not to mention this typically required a payment, contributed to the victim-blaming narrative and removing accountability from the platforms hosting the non-consensual material.

[257] Martin, "Image-Based Sexual Abuse and Deepfakes," 2021.
[258] Oppenheim, "'I Discovered Deepfake Porn of Myself Online.'"

Conflicting Identities

Participants demonstrated a significant degree of uncertainty regarding the validation of their experience and, subsequently, how they made sense of their experiences. Often they would express one thing, but their verbal and emotional cues would represent another sentiment entirely. The idea of portraying conflicting identities posits sexual deepfakes as a form of abuse that requires extra navigation by victim-survivors in order to understand and label their abuse as abuse fully.

Blame, Shame, and Responsibility.

Women are *becoming pornography* at unprecedented rates because of the ease and ability with which men are able to use these technologies to facilitate abuse. Further, these abuses are demonstrated on the Internet – an infinitely public and accessible platform in which displays of masculinity can be witnessed by countless individuals. The degree to which victim-survivors described facing victim-blaming, 'slut'-shaming, and forced responsibility to prevent future experiences of abuse was concerning regarding the scale and scope in which their abuse was experienced:

> They [her parents] talked about the friends I keep and I should be careful in relationships more like I should be more careful in my relationships because if what happened…It was my mistake…They [her neighbors and family] said a lot of insults to my mom like 'you didn't bring your child up well,' and those types of things. - Lia

Hisotrically, reputational damage for women occurs because women are judged on their image and men are judged on their actions.[259] A woman's image is the basis of her reputation. In contrast, a man's actions dictate his character. If a woman's image is 'corrupt,' this often gives perpetrators the validation to abuse, justifying their actions because the victim 'deserved' to be targeted:[260]

> I began to receive a level of hate from members of the public that I did not anticipate. I was not prepared, and don't think you ever can be, for the onslaught of horrible, cruel, and merciless commentary that comes with speaking out about sexual abuse. I was ruthlessly victim blamed and slut shamed. I was told I was deserving of what happened to me. The slut was asking for it. Stupid, naive attention seeking whore. No self-respect, look at her. She should be flattered people would do that to her, it's a compliment. She's fat, gross, and ugly, who would do that to her, were just some of the things they said. I was enraged. As if what I wear or how I look is an invitation to abuse me. The clothes I wear and the body I have do not entitle another person to misappropriate my personhood, sexuality, or agency. – Ella[261]

Unfortunately, for some victim-survivors like Lia, despite the content being fake, she was still fired from her job after her employer saw the video. Lia's attitude also reflects the internalization of being culpable in her abuse. When asked what she would suggest to other women going through her experience, she said to "be more careful and

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[259] Foziha Hamid, "A Study of Sexual Violence in the Digital Age: Working with Technology-Facilitated Sexual Violence against Women within Sexual Violence Support Services," 2019; Rosewarne, "Abuse as Artefact: Understanding Digital Abuse of Women as Cultural Informant"; Yasmin Ibrahim, "The Regulation of Gaze and Capture: New Media and the Image Economy," *International Journal of Technoethics* 1, no. 3 (July 1, 2010): 49–63, https://doi.org/10.4018/jte.2010070105; Chan, "Becoming Pornography: White Women, Voyeuristic Surveillance, and Image-Based Sexual Abuse."

[260] Brandon Sparks, "A Snapshot of Image-Based Sexual Abuse (IBSA): Narrating a Way Forward," *Sexuality Research and Social Policy* 19, no. 2 (June 2022): 689–704, https://doi.org/10.1007/s13178-021-00585-8; McGlynn, Rackley, and Houghton, "Beyond 'Revenge Porn'"; Henry, "Beyond the 'Sext': Technology- Facilitated Sexual Violence and Harassment against Adult Women," n.d.; Bridget Harris and Delanie Woodlock, "Digital Coercive Control: Insights From Two Landmark Domestic Violence Studies," *British Journal of Criminology* 59 (November 24, 2018), https://doi.org/10.1093/bjc/azy052; Dodge, "Digitizing Rape Culture"; McGlynn et al., "'It's Torture for the Soul,'" August 2021; Ruvalcaba and Eaton, "Nonconsensual Pornography among U.S. Adults"; Uhl et al., "An Examination of Nonconsensual Pornography Websites," February 2018; Langlois and Slane, "Economies of Reputation."

[261] Martin, "Image-Based Sexual Abuse and Deepfakes," 2021.

never take videos with people even if you love them. Be careful. Be secured in yourself." Internalization of blame also resulted in desires to not report to police under the assumption that they were responsible for their abuse, "It was my mistake."

This strongly aligns with avoiding revictimization was an overlapping message of "being careful" or taking responsibility for avoiding revictimization or further experiences of abuse. Perpetrators should bear the responsibility for abuse, but this is not the reality. When asked what advice she would give victim-survivors with similar experiences, Lia said that it was for them to "be careful:"

> They should be careful and secure in everything you're doing. Stop taking nude pictures and videos with your partners and stop agreeing to be recorded because of love and all those things. – Lia

Despite the pain, trauma, and persistent violence she faces daily, Lia's perceptions reflect a personal sense of responsibility to avoid abuse by "being secured" or "being careful." Her words are almost verbatim to the words of 'advice' given by her parents and neighbors, suggesting an internalized belief that what she experiences is her fault and that others must be responsible for not becoming victims. The experiences of IBSA and sexual deepfakes reflect those of rape victims blamed for their appearance, wearing revealing clothing, alcohol consumption, or through sexual double standards in which men are praised for sexual interactions, and women are shamed for their 'sexual deviancy.'[262] Rape myth acceptance, rape culture, victim-blaming, shaming, and

[262] Mckinlay and Lavis, "Why Did She Send It in the First Place?"; Gavey and Schmidt, "'Trauma of Rape' Discourse," April 1, 2011; Ravn, Coffey, and Roberts, "The Currency of Images"; Jessica Ringrose et al., "Teen Girls, Sexual Double Standards and 'Sexting': Gendered Value in Digital Image Exchange," *Feminist Theory* 14, no. 3 (December 2013): 305–23, https://doi.org/10.1177/1464700113499853; Ana J. Bridges et al., "Sexual Scripts and the Sexual Behavior of Men and Women Who Use Pornography," *Sexualization, Media, & Society* 2, no. 4 (December 1, 2016): 237462381666827, https://doi.org/10.1177/2374623816668275; Geoffrey Gorisse et al., "Self-Observation of a Virtual Body-Double Engaged in Social Interaction Reduces Persecutory Thoughts," *Scientific Reports* 11, no. 1

misogynistic attitudes must be addressed holistically to prevent their permeation into digital spaces.

Consistent with previous feminist literature, male and female participants did not believe that sexual deepfakes and other forms of IBSA were novel crimes but were directly correlated with the normalization of sexism and misogynistic undertones that prime various environments for larger displays of gendered sexual violence.[263] Participants believed that a cultural shift was necessary to dismantle patriarchal attitudes and gender power inequities and thought that such a shift must start with the youngest members of our society:

> I think overall it's a people problem. Obviously people don't get enough education on how to use technology in a nice way. I don't think a lot of kids are getting any supervision online and I think from this lack of supervision they aren't taught right from wrong in online spaces and they think they can get away with whatever they want. Even if deepfakes didn't

(December 14, 2021): 23923, https://doi.org/10.1038/s41598-021-03373-x; Dodge, "Digitizing Rape Culture"; Perry, Ricciardelli, and Adorjan, "The Gendered Dynamics of Sexting as Boundary Work"; Branch et al., "Revenge Porn Victimization Of College Students In The United States"; Baum, Cohen, and Zhukov, "Rape Culture and Sexual Crime"; Andersson et al., *Rape Narratives in Motion*; Loya, "Rape as an Economic Crime," October 2015; Harder, "Re-Faced and Pornified—a Visual, Narrative Analysis of Sexual Scripts in Police Cases of Image-Based Abuse," July 5, 2022.

[263] Cheryl Nelson Butler, "A Critical Race Feminist Perspective on Prostitution & Sex Trafficking in America," *Yale Journal of Law and Feminism* 27, no. 1 (2016 2015): 95–140, https://heinonline.org/HOL/P?h=hein.journals/yjfem27&i=97; Judith Butler, "Performative Acts and Gender Constitution: An Essay in Phenomenology and Feminist Theory," *Theatre Journal (Washington, D.C.)* 40, no. 4 (1988): 519–31; Alexa Dodge, "Digitizing Rape Culture: Online Sexual Violence and the Power of the Digital Photograph," *Crime, Media, Culture: An International Journal* 12, no. 1 (April 2016): 65–82, https://doi.org/10.1177/1741659015601173; Lauren Rosewarne, "Abuse as Artefact: Understanding Digital Abuse of Women as Cultural Informant," in *The Palgrave Handbook of Gendered Violence and Technology*, ed. Anastasia Powell, Asher Flynn, and Lisa Sugiura (Cham: Springer International Publishing, 2021), 135–53, https://doi.org/10.1007/978-3-030-83734-1_8; Liz Kelly, "The Continuum of Sexual Violence," in *Women, Violence and Social Control*, ed. Jalna Hanmer and Mary Maynard (London: Palgrave Macmillan UK, 1987), 46–60, https://doi.org/10.1007/978-1-349-18592-4_4; Building Knowledge, "Feminist Standpoint Epistemology," *Feminist Research Practice: A Primer* 53 (2007); Liz Kelly, *Surviving Sexual Violence* (Minneapolis: University of Minnesota Press, 1988); Heidi Ashley, "Exploring Growth Outcomes in the Aftermath of Rape: An Interpretative Phenomenological Analysis," *PQDT - Global* (Psy.D., England, University of Surrey (United Kingdom), 2005), ProQuest Dissertations & Theses Global (2147811612), http://search.proquest.com.ezp-prod1.hul.harvard.edu/dissertations-theses/exploring-growth-outcomes-aftermath-rape/docview/2147811612/se-2?accountid=11311; Ulrika Andersson et al., eds., *Rape Narratives in Motion* (Cham: Springer International Publishing, 2019), https://doi.org/10.1007/978-3-030-13852-3; Matthew A Baum, Dara Kay Cohen, and Yuri M Zhukov, "Rape Culture and Sexual Crime," n.d., 62.

> exist, I feel like somebody would invent something else to hurt people in this way online. Or even if the internet didn't exist, I think people would find other ways to hurt each other because this is more of a people issue and people needing to learn morals… It would be a good thing to start teaching little kids, in age-appropriate ways, about gendered harms. We have anti-racism, but we need more anti-sexism stuff. – Mary

Isolation and Behavior Changes.

Every victim-survivor described their experience as resulting in significant changes in their behavior, attitudes, and relationships. However, female participants described these changes as permanent and male participants described these as short-lived or simply precautionary measures. For participants, these behaviors were part of coping mechanisms, measures for avoiding revictimization by isolating themselves to protect against further exposure to abuse or harm. One of the ways participants achieved this was through the removal or self-censorship of their online presence, something every participant touched on as a part of their experience:

> I've pretty much stopped using social media entirely. - Luke

> I don't have much stuff of me online…I do have a Facebook, but I don't have a lot of Facebook friends or anything, so I can try to keep it really private… I haven't really been active on Discord for a while. I don't do Instagram, Twitter, or anything else really either… – Mary

> I deleted my Facebook I just couldn't take it… From the day the video was published, I have not been the same person. I used to be very opinionated, now I'm much more cautious about what I post online. I've self-censored quite a bit out of necessity. – Annie[264]

Constant fear also grew from the public and expansive nature in which this abuse was perpetrated, resulting in an overall fear of being recognized or re-victimized because of the initial event. This state of permanency is further shown by the length of time away

[264] Ayyub, "I Was The Victim Of A Deepfake Porn Plot Intended To Silence Me," n.d.

from when the initial event occurred to the time of the interview. In the case of one female victim-survivor, whose experience of image-based sexual abuse (IBSA), non-consensual dissemination of sexually explicit media (NCDSEM), and sexual deepfakes began over three years ago, remains hindered by an overwhelming sense of fear of being recognized or revictimized.

> It affected my life very badly...It changed my attitude to be like more careful in what I am doing and be more secure. It definitely changed my lifestyle…I am always afraid of going out. I'm always afraid of meeting people or going to parties. – Lia

Other participants expressed the struggle with existing after the initial event. The female participants especially emphasized the drastic changes to their life and lifestyles due to their experience.

> I'm more of an introvert now, even with my friends. - Judy

> I am even more careful than I was before. Trying to put everything on lockdown… I mean there would be like certain people that I might have socialized with before that I would avoid now. – Mary

> Now I don't post anything on Facebook. I'm constantly thinking what if someone does something to me again. I'm someone who is very outspoken so to go from that to this person has been a big change. – Annie[265]

Male participants did not express fear or paranoia over future abuse, which was a key difference between the participants. This could be explained by previous research on male victim-survivors of rape that have found male rape myths and masculine stereotypes to hinder the ability and willingness to honestly disclose the extent of their abuse and its impact.[266] This was seen by one male participant who described his situation as

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[265] Ayyub.

[266] Bridges et al., "Sexual Scripts and the Sexual Behavior of Men and Women Who Use Pornography," December 1, 2016; Kristie R. Blevins and Thomas J. Holt, "Examining the Virtual Subculture of Johns," *Journal of Contemporary Ethnography* 38, no. 5 (October 2009): 619–48, https://doi.org/10.1177/0891241609342239; Stefanie Davis Kempton, "Erotic Extortion: Understanding the

traumatizing, “It was definitely a traumatic experience for sure,” but proceeded to minimize the harm he experienced through the use of deflecting commentary such as, “Life happens I guess, so no sweat.” This type of deflection is consistent in male victim-survivors of both rape and other forms of technology-facilitated sexual violence (TFSV). It should be a focus of future research as it is evident that men are experiencing IBSA similar to women, but the effects are relatively unknown.

Becoming Pornography.

The concept of *becoming pornography* was uniquely attributed to female victim-survivors of sexual deepfakes. Deepfake and synthetic media technologies and the relatively infinite amount of pornographic content online provided perpetrators with the capability to superimpose female participants into sexually explicit media without their knowledge or consent. Then, under the guise of deceptive labeling and connotations, “fake” pornography of female participants was shared, traded, bought, sold, and consumed by men on social media apps, pornography websites, and private messaging platforms. Albeit synthetic, female participants unanimously described their experiences as violating and abusive, in which their bodies and likeness were stolen, stripped, and sexualized for profit:

Cultural Propagation of Revenge Porn,” *SAGE Open* 10, no. 2 (April 1, 2020): 2158244020931850, https://doi.org/10.1177/2158244020931850; DeKeseredy and Schwartz, “Thinking Sociologically About Image-Based Sexual Abuse”; Flynn et al., “Deepfakes and Digitally Altered Imagery Abuse”; Huysamen and Boonzaier, “Men’s Constructions of Masculinity and Male Sexuality through Talk of Buying Sex”; Unnati Patel and Ronald Roesch, “The Prevalence of Technology-Facilitated Sexual Violence: A Meta-Analysis and Systematic Review,” *Trauma, Violence, & Abuse* 23, no. 2 (April 2022): 428–43, https://doi.org/10.1177/1524838020958057; Widanaralalage et al., “‘I Didn’t Feel I Was A Victim’”; Julia Zauner, “The Continuum of Symbolic Violence: How Sexting Education Neglects Image-Based Sexual Abuse, Dismisses Perpetrators’ Responsibility, and Violates Rights to Sexual Autonomy,” *Journal of Gender-Based Violence* 5, no. 3 (October 2021): 483–98, https://doi.org/10.1332/239868021X16123478358067.

> There is a lot of porn of me on the internet. That may surprise you, or it might not. I had no choice. My face has been digitally plastered countless times over other peoples' naked bodies to create sex content I never consented to. Porn of myself I never created has been viewed, distributed, and sold. It has been used to threaten, humiliate, and attempt to grab power from myself. My reality is not unique. Even among my peers, so many of us have had the same exact experience. And it kills me to know that this is an inevitability that future generations will also be victim to - and even worse, because technology advances so quickly. – Kathy[267]

There is a particular type of trauma in knowing that pornography of you exists, especially considering the lack of choice and removal of consent in cases of sexual deepfakes. The deceptive and exploitative characteristics of sexual deepfakes are indicative of the pornography industry in its entirety.

The pornography industry normalizes sexual violence through the purposeful use of the discourse of choice "to refute concerns on the economic inequalities and ethical issues of production,"[268] elevating popular narratives in which "a focus on a woman's right to choose (to be in the sex trade), diverts attention away from men's right to demand that women are sold as commodities in the capitalist market."[269] The discourse of choice "individualises every case and removes any recognition of a collective condition of oppression or sexual exploitation."[270] This was demonstrated by victim-survivors of sexual deepfakes as they did not choose to *become pornography* but synthetic media of victims and their likeness are being portrayed as such.

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[267] Gibi (@GibiOfficial), "Deepfake Video Transcript."
[268] McVey, Gurrieri, and Tyler, "The Structural Oppression of Women by Markets"; Karen Gabriel, "State of Power 2017: Power of Porn Cultures," in *The Political Economy Og Pornography* (The Transnational Institute (TNI), 2017), 1–12.
[269] Carole Pateman, *The Sexual Contract.*, The Sexual Contract. (Stanford University Press, 1988); McVey, Gurrieri, and Tyler, "The Structural Oppression of Women by Markets"; Kathy Miriam, "Stopping the Traffic in Women: Power, Agency and Abolition in Feminist Debates over Sex-Trafficking," *Journal of Social Philosophy* 36, no. 1 (2005): 1–17, https://doi.org/10.1111/j.1467-9833.2005.00254.x.
[270] Kathleen Barry, *The Prostitution of Sexuality* (NYU Press, 1995), https://www.jstor.org/stable/j.ctt9qg779; McVey, Gurrieri, and Tyler, "The Structural Oppression of Women by Markets."

Concerns were also raised regarding the unprecedented democratization of even the most basic synthetic media technology and the negative impacts sexual imagery has on a woman. The illegitimacy of the content did not alleviate traumatic experiences or reduce reverberations of abuse for victim-survivors. In many instances, the falsity of their abuse is a factor of sexual gratification, in which technology facilitates the creation of visual fantasies of any woman desired. The harrowing situations victim-survivors experienced were precarious and damning irrespective of the content's realism or sophistication:

> What also frightens me about the rise in technology-facilitated abuse, and deepfakes in particular, is not necessarily how advanced the technology is becoming, such that it may become impossible to detect what is real or fake, it is that the technology, as it currently exists, even in an imperfect, detectable form, is enough to cause irreparable and life-long harm to a victim. – Ella[271]

> We're having this gigantic conversation about consent, and I don't consent — so that's why it's not okay. Even if it's labeled as, 'This is not actually her,' it's hard to think about that. This is probably one of the most difficult things because fake porn and my name will be forever associated. My children, my future children, will have to see things. My future partner will have to see things. And that's what makes me sad. I wish that the internet were a little bit more responsible and a little bit kinder. – Rebecca[272]

Once women had *become pornography,* victim-survivors had little recourse in minimizing the impact or preventing reiterations of abuse:

> It's like not really knowing what you can do. It's the internet and once something is there it's kind of there forever and it's in so many people hands that like they're [police/websites] not going to possibly be able to track down everyone…I don't know if there's a way to take those [deepfake] websites and apps not exist that are using this technology in

[271] Martin, "Image-Based Sexual Abuse and Deepfakes," 2021.
[272] Abram, "The Most Urgent Threat of Deepfakes Isn't Politics. It's Porn.: A Video Explainer with Kristen Bell."

> that way?…I think that companies could definitely do a lot more and kind of helping with access online and on people's devices. - Mary

Their bodies and likeness are forever tangible evidence of their objectification, forever a product of male sexual desire, forever a determinant to their reputations, and forever associated with pornography. This ia an industry that remains rife with abuse and misogyny.

All-Encompassing.

Participants experienced an irreparable impact on their emotional, physical, and social well-being. Sexual deepfake abuse significantly impacted every aspect of victim-survivors' lives, both online and offline. The complexity and pervasiveness in which deepfake and synthetic media technologies can facilitate varied and divergent crimes and abuses must be addressed to successfully capture the holistic nature of these forms of abuse. Not only did victim-survivors experience a range of harm and reverberations of abuse, but they were also subjected to a range of other offenses and contexts in which their experiences occurred. For these reasons, sexual deepfakes should be understood as all-encompassing abuses.

These images were frequently the result of other crimes, such as hacking private messages to steal nude photos or stealing photos from online social media profiles – both violating and without consent:

> Every other person was harassing me with comments like "I never knew you had such a stunning body...The next day they doxed me...People started sending me WhatsApp messaged asking me for my rates for sex... It had exposed me to a lynch mob... I had more than 100 Twitter notifications sharing the video…On Instagram, under every single one of my posts, the comments were filling with screenshots of the video. The

> video was shared 40,000 more times. It ended up on almost every phone in India. – Annie[273]
>
> There were two different incidents. There was one where the image was photoshopped and then there was one that was actually like nude, those were two different people…Each of those occasions were kind of like a separate thing. They were around the same time but they were kind of on different platforms too. Like I said, between Facebook and Discord. The photoshop thing happened through Facebook but went to Discord…[They got the images] basically through like hacking messages…My name was on it, sometimes my last name…People had like offered to like sell them [on Facebook]…And the nude images was all Facebook…There weren't any that were photoshopped to be sexual and violent at the same time if that makes sense, but yeah separately there were some [violent photoshopped images]…Like of me holding a gun and shooting people. – Mary
>
> …someone had been uploading non-intimate photos from my private social media accounts to a porn site, inviting other users to turn them into 'fakes'. Captions demanding me to be abused and humiliated. Violent sexual acts shown with my face photoshopped onto the woman's body. Degrading 'cartoon' pictures. An image of me being strangled, which was so realistic that if I were a stranger encountering it, I wouldn't have been able to say for sure that it was a fake. They'd gone to some length to make a few of the images seem plausible. They'd even photoshopped some of my tattoos onto the arm of the woman in one picture…The original photos of me were holiday pictures. – Fran[274]

Through the escalation of abuse, female victim-survivors described experiencing many forms of violence after their initial experience of abuse which is consistent with prior literature on the gendered experiences of TFSV and IBSA.[275] Additionally, victim-

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[273] Ayyub, "I Was The Victim Of A Deepfake Porn Plot Intended To Silence Me," n.d.
[274] Jackson, "Behind Every Image Is a Person"; Mort, "I Was a Victim of Deepfake Porn."
[275] Branch et al., "Revenge Porn Victimization Of College Students In The United States"; Eckstein, "What Is Violence Now?: A Grounded Theory Approach to Conceptualizing Technology-Mediated Abuse (TMA) as Spatial and Participatory," n.d.; Dodge et al., "Using Fake Video Technology To Perpetuate Intimate Partner Abuse," n.d.; Henry, "Beyond the 'Sext': Technology- Facilitated Sexual Violence and Harassment against Adult Women," n.d.; Killean, McAlinden, and Dowds, "Sexual Violence in the Digital Age"; Harris and Woodlock, "Digital Coercive Control: Insights From Two Landmark Domestic Violence Studies"; Delanie Woodlock, "The Abuse of Technology in Domestic Violence and Stalking," *Violence Against Women* 23 (May 12, 2016), https://doi.org/10.1177/1077801216646277; Roberta Liggett O'Malley and Karen M. Holt, "Cyber Sextortion: An Exploratory Analysis of Different Perpetrators Engaging in a Similar Crime," *Journal of Interpersonal Violence* 37, no. 1–2 (January 1, 2022): 258–83, https://doi.org/10.1177/0886260520909186; Hamid, "A Study of Sexual Violence in the Digital Age:

survivors expressed a wide range of concerns and fears that collectively identified experiences of sexual deepfakes:

> I felt like someone was controlling me. – Lia
>
> It was exhausting. It was literally a never-ending battle that I could not win no matter how much I tried. I remember spending my university breaks embarking on this task. There were times I would try to forget this was happening to me, but it was short-lived because the fear, worry, and paranoia would sink in. I couldn't sleep at night worrying how this would impact my life, fearful that I would never get a job if employers saw the material of me. I started smoking to relieve my stress and shame. I drank to cope, and I spread myself thin with casual sexual encounters, internalising my objectification and struggling with cripplingly poor self-esteem and self-worth. My education was significantly disrupted. I struggled to find the motivation to study and navigate law school, while also silently fighting for my life, name, reputation, employability, dignity, and humanity. – Ella[276]

This suggests the possibility of examining sexual violence as rhizomatic in harm and proliferation.[277] While doxing was consistent with every victim-survivor, only female victim-survivors reported experiencing other forms of violence and harm such as domestic violence; rape and death threats; victim-blaming and 'slut-shaming' from friends, family, and strangers; unwanted sexual solicitations; violent synthetic imagery; and sexually objectifying comments about their body and 'immoral' sexual expressions. The escalation and continuation of abuse and its evident escalation led female victim-survivors to describe their experiences as incredibly isolating and permanently impacting the person they became after the initial event.

Working with Technology-Facilitated Sexual Violence against Women within Sexual Violence Support Services," 2019; Flynn, Powell, and Hindes, "Technology-Facilitated Abuse: A Survey of Support Services Stakeholders."

[276] Martin, "Image-Based Sexual Abuse and Deepfakes," 2021.

[277] Powell, Flynn, and Sugiura, *The Palgrave Handbook of Gendered Violence and Technology*.

Female victim-survivors unanimously attributed experiences of escalation and radiation of abuse as a result of a cultural and historical permittance and denial of gendered sexual violence:

> Taking a woman's face and putting it into this context is part of a long history of using sexual humiliation against women. – Rebecca[278]

> I feel it's mostly women that are victim to having something like this happen because I've seen it happen to like a lot of women, but I have not really ever seen it happen to men…It's in our society, like women not being respected as much [as men] and becoming easier targets to pick on… – Mary

> One of my initial reactions was to wonder whether I had somehow 'deserved' or even 'invited' what happened to me, which is obviously nonsense. But the insidious, pervasive nature of sexual violence against women in our culture primes us to feel like that. – Fran[279]

Pornography was also a common denominator expressed by female victim-survivors of sexual deepfakes. Consistent with theories of objectification, sexual deepfakes contribute to normalizing the sexual objectification of women, which is defined as when "sexual parts or sexual functions are separated out from the rest of her personality, and she is reduced to the status of mere instruments."[280] Additionally, Nussbaum (1995) identified seven features that are consistent with "the idea of treating a person as an object: these include issues of denial of autonomy, lack of agency and ownership."[281] Victim-survivors commented on the connection between the fetishization

[278] Abram, "The Most Urgent Threat of Deepfakes Isn't Politics. It's Porn.: A Video Explainer with Kristen Bell."
[279] Jackson, "Behind Every Image Is a Person."
[280] Hamid, "A Study of Sexual Violence in the Digital Age: Working with Technology-Facilitated Sexual Violence against Women within Sexual Violence Support Services," 2019; Saul Levmore and Martha Craven Nussbaum, "The Offensive Internet: Speech, Privacy, and Reputation," 2011.
[281] Hamid, "A Study of Sexual Violence in the Digital Age: Working with Technology-Facilitated Sexual Violence against Women within Sexual Violence Support Services," 2019.

of the non-consensual in mainstream pornography as a catalyst for normalizing superimposing women into pornography:

> Working on the campaign and looking at these different kinds of mainstream porn websites, I would roughly estimate that probably around 60% of content is something that appears to be non-consensual. Whether that is a woman who is appearing as a girl in a school uniform or rape fantasies, the entire industry has so many categories that fantasize women being made to do something that they have not agreed to in varying degrees, and deepfaking is just another manifestation of that. – Aly[282]

Through sexual deepfakes, the female body is perceived more as an object of male sexual demand than a human being. The abuse escalated as a result of sexual deepfakes being uploaded to pornography websites. Men did not see these images and videos as abuse but rather found satisfaction and sexual gratification in knowing they were viewing non-consensual and synthetic material:

> Little did I know that the mere distribution of ordinary images of me on pornographic sites was just the 'gateway' for what was to come. I soon discovered these anonymous sexual predators had been manipulating, altering, and doctoring ordinary images of me into pornographic material. My face had been doctored onto the bodies of naked adult actresses in solo positions and in imagery that depicted me having sexual intercourse with others. My face was photoshopped with semen on it, and in imagery depicting me being ejaculated on. My face was edited onto multiple covers of adult movies. My blouses were edited to give the effect that they were wet, or transparent, so people could see my computer-generated, fake nipples. These sexual predators had even ejaculated on images of me, took photos of their semen and penises on my image, and posted these secondary photos onto pornographic sites in what is referred to as 'tributes' or 'cumonprintedpics.' – Ella[283]

The connection of sexual deepfakes to the pornography industry only exacerbated the degrading, demoralizing, objectifying, and dehumanizing feelings experienced by

[282] Cockerham, "Deepfake Porn Wrecks Lives – but, as One Woman Discovered, It Takes Just 8 Seconds to Make an Image."
[283] Martin, "Image-Based Sexual Abuse and Deepfakes," 2021.

victim-survivors. Many victim-survivors identified the lack of accountability by the pornography industry and big-tech appalling and problematic:

> Pornhub and other big porn streaming sites have policies banning deepfakes, though they don't seem to be enforcing them. Mostly, these videos show up on separate sites dedicated to this kind of abuse. It's not just celebrities anymore. Not that celebrities feel any less pain from these videos. But the phenomenon is evolving at a rate where we're seeing deepfake pornography increasing in number and an increasing number of victims as well. – Rebecca[284]

> If companies have not put money, resources, and time into ensuring their app isn't being used as a place to create sexual abuse content, they are being deliberately irresponsible. They are culpable. – Aly

Under standardized business practices and widely false narratives regarding consent and free choice, abuse, and exploitation remain rampant and integral components to the pornography industry's successful societal acceptance and economic resilience. Many victim-survivors commented on the need for higher levels of regulation. Still, participants unanimously suggested that pornography websites, social media, and big-tech platforms should hold themselves accountable for the harm occurring on their platforms.

[284] Abram, "The Most Urgent Threat of Deepfakes Isn't Politics. It's Porn.: A Video Explainer with Kristen Bell."

Chapter V.

Discussion

Gender was prevalent in the context and persistence of abuse. Men reported slightly higher rates of victimization than women and LGBTQ+ individuals. While this is consistent with previous research by Flynn et al., (2021),[285] it deviates from quantitative research and public reports of victimization in which women are primarily targeted.[286] Additionally consistent with Flynn et al.'s (2021) findings were the longevity and severity of harm experiences by female victims.[287] The escalation and reverberations of abuse were unique to female participants, resulting in irreparable harm to every aspect of their lives. This aligns with previous literature on traditional sexual violence, technology-facilitated sexual violence, and image-based sexual abuse.[288]

[285] Flynn et al., "Deepfakes and Digitally Altered Imagery Abuse: A Cross-Country Exploration of an Emerging Form of Image-Based Sexual Abuse"
[286] Flynn et al., "Deepfakes and Digitally Altered Imagery Abuse: A Cross-Country Exploration of an Emerging Form of Image-Based Sexual Abuse."; Ajder et al., "The State of Deepfakes: Landscape, Threats, and Impact."; Ajder, Patrini, and Cavalli, "Automating Image Abuse: Deepfake Bots on Telegram."; Patrini, "The State of Deepfakes 2020: Update on Statistics and Trends."; Cole, "'You Feel So Violated': Streamer QTCinderella Is Speaking Out Against Deepfake Porn Harassment."; Cole, "AI-Assisted Fake Porn Is Here and We're All Fucked."; Cole, Maiberg, and Koslerova, "'Frankenstein's Monster:' Images of Sexual Abuse Are Fueling Algorithmic Porn."
[287] Flynn et al., "Deepfakes and Digitally Altered Imagery Abuse: A Cross-Country Exploration of an Emerging Form of Image-Based Sexual Abuse."
[288] Kelly, "The Continuum of Sexual Violence," 1987; Gavey and Schmidt, "'Trauma of Rape' Discourse: A Double-Edged Template for Everyday Understandings of the Impact of Rape?"; Loya, "Rape as an Economic Crime: The Impact of Sexual Violence on Survivors' Employment and Economic Well-Being"; Laugerud, "Narrating the Harm of Rape: How Rape Victims Invoke Different Models of Psychological Trauma"; Dodge, "Digitizing Rape Culture: Online Sexual Violence and the Power of the Digital Photograph"; Henry and Powell, "Embodied Harms: Gender, Shame, and Technology-Facilitated Sexual Violence"; Powell and Henry, "Technology-Facilitated Sexual Violence Victimization: Results From an Online Survey of Australian Adults"; McGlynn et al., "'It's Torture for the Soul': The Harms of Image-Based Sexual Abuse"; Henry and Flynn, "Image-Based Sexual Abuse: Online Distribution Channels and Illicit Communities of Support"; Flynn et al., "Deepfakes and Digitally Altered Imagery Abuse: A Cross-Country Exploration of an Emerging Form of Image-Based Sexual Abuse."

Sexual deepfakes were monetized in every case. Participants and lived experience experts extensively spoke about the commodification of their abuse and its connection to the pornography industry. In many cases, sexual deepfakes were sold on mainstream pornography websites, social media platforms, or online forums and messaging groups. Considering that the majority of perpetrators were men and pornography consumers are primarily male, the experiences of female sexual deepfake victim-survivors are indicative of experiences of traditional sexual violence in objectification, misogyny, and male entitlement.[289] Male entitlement has been identified as a key factor in traditional sexual violence, TFSV, IBSA, and pornography studies.[290] This also aligns with previous research establishing the buying, selling, and trading of "revenge pornography" online and the male-dominated communities in which IBSA proliferates.[291]

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[289] Laura McVey, Lauren Gurrieri, and Meagan Tyler, "The Structural Oppression of Women by Markets: The Continuum of Sexual Violence and the Online Pornography Market," *Journal of Marketing Management* 37, no. 1–2 (January 2, 2021): 40–67, https://doi.org/10.1080/0267257X.2020.1798714; Catharine A MacKinnon, "Pornography as Trafficking," *Mich. J. Int'l L.* 26 (2004): 993; Chan, "Becoming Pornography: White Women, Voyeuristic Surveillance, and Image-Based Sexual Abuse"; Zattoni et al., "The Impact of COVID-19 Pandemic on Pornography Habits: A Global Analysis of Google Trends"; Bridges et al., "Sexual Scripts and the Sexual Behavior of Men and Women Who Use Pornography"

[290] Fiona Vera-Gray et al., "Sexual Violence as a Sexual Script in Mainstream Online Pornography," *The British Journal of Criminology* 61, no. 5 (April 2021): 1243–60, https://doi.org/10.1093/bjc/azab035; Paul J. Wright, Robert S. Tokunaga, and Ashley Kraus, "A Meta-Analysis of Pornography Consumption and Actual Acts of Sexual Aggression in General Population Studies: Pornography and Sexual Aggression," *Journal of Communication* 66, no. 1 (February 2016): 183–205, https://doi.org/10.1111/jcom.12201; Niki Fritz et al., "Porn Sex versus Real Sex: Sexual Behaviors Reported by a U.S. Probability Survey Compared to Depictions of Sex in Mainstream Internet-Based Male–Female Pornography," *Archives of Sexual Behavior* 51, no. 2 (February 2022): 1187–1200, https://doi.org/10.1007/s10508-021-02175-6; Bridges et al., "Sexual Scripts and the Sexual Behavior of Men and Women Who Use Pornography"; Maddocks, "'A Deepfake Porn Plot Intended to Silence Me'"; Holladay, "An Investigation of the Influence of Cyber-Sexual Assault on the Experience of Emotional Dysregulation, Depression, Post Traumatic Stress Disorder, and Trauma Guilt."; McGlynn, Rackley, and Houghton, "Beyond 'Revenge Porn'"; Langlois and Slane, "Economies of Reputation"; Uhl et al., "An Examination of Nonconsensual Pornography Websites," February 2018; Henry, "Beyond the 'Sext': Technology- Facilitated Sexual Violence and Harassment against Adult Women," n.d.; Ringrose et al., "Teen Girls, Sexual Double Standards and 'Sexting'"; Heyes, "Dead to the World: Rape, Unconsciousness, and Social Media"; Andersson et al., *Rape Narratives in Motion*; Dworkin et al., "Sexual Assault Victimization and Psychopathology"; Kelly, "The Continuum of Sexual Violence."

[291] DeKeseredy and Schwartz, "Thinking Sociologically About Image-Based Sexual Abuse: The Contribution of Male Peer Support Theory"; Uhl et al., "An Examination of Nonconsensual Pornography

Women unanimously described experiences of sexual deepfake abuse through descriptions of traditional sexual violence: *violating, virtual rape, I didn't consent, someone else controlling my body*, and *sexual assault*. These experiences were then monetized through the deepfake marketplace and mainstream pornography sites. While it is outside of the scope of this study to determine whether experiences of sexual deepfake abuse legally constitute as sex trafficking or sexual exploitation, this study found all three elements of sex trafficking (force, fraud, and coercion) present in female victim-survivors experiences of sexual deepfake abuse.[292] Because of the inherent commodification and connection to the pornography industry, future research exploring potential applications of sex trafficking legislation for sexual deepfake abuse is necessary.

Perpetrators were identified as men in every case except one, in which the perpetrator's identity was unknown because the victim-survivor never saw their face or heard their voice. This is consistent with prior research on traditional sexual violence and IBSA establishing men to be perpetrators more often than females, even in cases of male-on-male sexual violence, alluding to the theory of feminization in which gratification is achieved through public displays of negative heteronormativity, equating 'doing' masculinity with sexual dominance.[293]

Websites"; Harder, "Re-Faced and Pornified—a Visual, Narrative Analysis of Sexual Scripts in Police Cases of Image-Based Abuse," July 5, 2022; Henry and Flynn, "Image-Based Sexual Abuse: Online Distribution Channels and Illicit Communities of Support"; Jørgensen and Demant, "Shame, Shaming and Economy: A Theory of Image-Based Sexual Abuse Within Different Online Sharing Environments"; Langlois and Slane, "Economies of Reputation: The Case of Revenge Porn"; Loya, "Rape as an Economic Crime: The Impact of Sexual Violence on Survivors' Employment and Economic Well-Being."

[292] Catharine A MacKinnon, "Pornography as Trafficking," *Mich. J. Int'l L.* 26 (2004): 993; NCOSE, "Doe.v.MindGeek"; Natalie Lussier, "Nonconsensual Deepfakes: Detecting and Regulating This Rising Threat to Privacy," *Idaho L. Rev.* 58 (2022): 352; Julie Dahlstrom, "The New Pornography Wars," *Florida Law Review*, 2023.

[293] Flynn et al., "Deepfakes and Digitally Altered Imagery Abuse"; Flynn and Cama, *Image-Based Abuse*; Henry and Flynn, "Image-Based Sexual Abuse," December 2019; Henry, Powell, and Flynn, "Not Just 'Revenge Pornography'"; Rackley et al., "Seeking Justice and Redress for Victim-Survivors of Image-

Interestingly, the male participant who experienced sexual extortion reported that engaging in 'risky behaviors' like sexting on Snapchat with strangers was directly related to his pornography addiction. While this was only one participant, it does align with current research on the brain and pornography addiction.[294] Research has established a myriad of negative behaviors associated with problematic pornography use (PPU), such as the normalization of sexual violence from progressively viewing more violent content over time.[295] Considering the amount of pornography containing violence, particularly

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Based Sexual Abuse," November 2021; Harder, "Re-Faced and Pornified—a Visual, Narrative Analysis of Sexual Scripts in Police Cases of Image-Based Abuse"; McVey, Gurrieri, and Tyler, "The Structural Oppression of Women by Markets"; Sparks, "A Snapshot of Image-Based Sexual Abuse (IBSA)," April 27, 2021; Gámez-Guadix et al., "Assessing Image-based Sexual Abuse"; Henry, "Beyond the 'Sext': Technology- Facilitated Sexual Violence and Harassment against Adult Women," n.d.; O'Malley and Holt, "Cyber Sextortion: An Exploratory Analysis of Different Perpetrators Engaging in a Similar Crime," January 1, 2022; Clancy et al., "Sext Dissemination"; Branch et al., "Revenge Porn Victimization Of College Students In The United States"; Araújo et al., "Technology-Facilitated Sexual Violence"; Zauner, "The Continuum of Symbolic Violence."

[294] Xiaoxi Kang et al., "Profiling of Pornography Addiction among Children Using EEG Signals: A Systematic Literature Review," *Computers in Biology and Medicine* 125 (2020): 103970, https://doi.org/10.1016/j.compbiomed.2020.103970; O'Malley and Holt, "Cyber Sextortion: An Exploratory Analysis of Different Perpetrators Engaging in a Similar Crime," January 1, 2022; Sophia Hanseder and Jaya A. R. Dantas, "Males’ Lived Experience with Self-Perceived Pornography Addiction: A Qualitative Study of Problematic Porn Use," *International Journal of Environmental Research and Public Health* 20, no. 2 (2023), https://doi.org/10.3390/ijerph20021497.

[295] Niki Fritz et al., "A Descriptive Analysis of the Types, Targets, and Relative Frequency of Aggression in Mainstream Pornography," *Archives of Sexual Behavior* 49 (November 2020), https://doi.org/10.1007/s10508-020-01773-0; Barbara Krahé, Paulina Tomaszewska, and Isabell Schuster, "Links of Perceived Pornography Realism with Sexual Aggression via Sexual Scripts, Sexual Behavior, and Acceptance of Sexual Coercion: A Study with German University Students," *International Journal of Environmental Research and Public Health* 19, no. 1 (December 22, 2021): 63, https://doi.org/10.3390/ijerph19010063; Isabell Schuster, Paulina Tomaszewska, and Barbara Krahé, "Changing Cognitive Risk Factors for Sexual Aggression: Risky Sexual Scripts, Low Sexual Self-Esteem, Perception of Pornography, and Acceptance of Sexual Coercion," *Journal of Interpersonal Violence* 37, no. 3–4 (February 2022): NP1377–1400, https://doi.org/10.1177/0886260520922341; Martin S. Weinberg et al., "Pornography, Normalization, and Empowerment," *Archives of Sexual Behavior* 39, no. 6 (December 2010): 1389–1401, https://doi.org/10.1007/s10508-009-9592-5; Wright, Tokunaga, and Kraus, "A Meta-Analysis of Pornography Consumption and Actual Acts of Sexual Aggression in General Population Studies"; Bridges et al., "Sexual Scripts and the Sexual Behavior of Men and Women Who Use Pornography"; Zattoni et al., "The Impact of COVID-19 Pandemic on Pornography Habits: A Global Analysis of Google Trends"; Larissa Terán and Leah Dajches, "The Pornography 'How-To' Script: The Moderating Role of Consent Attitudes on Pornography Consumption and Sexual Refusal Assertiveness," *Sexuality & Culture* 24, no. 6 (December 2020): 2098–2112, https://doi.org/10.1007/s12119-020-09739-z; Emily F. Rothman et al., "The Prevalence of Using Pornography for Information About How to Have Sex: Findings from a Nationally Representative Survey of U.S. Adolescents and Young Adults," *Archives of Sexual Behavior* 50, no. 2 (February 2021): 629–46, https://doi.org/10.1007/s10508-020-01877-7; Jongsma

violence against women on mainstream pornography websites,[296] and the ubiquity of deepfake technology, future research should analyze the impact of PPU on both victimization and perpetration of sexual deepfakes.

Sexual deepfake abuse was found to result in deeply embodied harms. Consistent with prior research establishing embodied harms resulting forms other forms of image-based sexual abuse and technology-facilitated sexual violence, experiences of sexual deepfake abuse disrupt victim-survivor's physical, emotional, and social lives.[297] Regardless of the quality or realism, participants adamantly spoke of the inherent connection felt when watching 'themselves' engaging in sexual activity. Previous research on IBSA as well as the study by Flynn et al. (2021) on victim-survivor experiences of sexual deepfakes has similarly portrayed this.[298]

Sexual deepfakes are a relatively new phenomenon. As such, relatively little is known about this form of sexual violence. Because of these limitations, a detailed understanding of the lived experiences of victim-survivors of sexual deepfakes was

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and Timmons Fritz, "The Role of Pornography Use in Intimate Partner Violence in Different-Sex Couples."

[296] Vera-Gray et al., "Sexual Violence as a Sexual Script in Mainstream Online Pornography"; Fritz et al., "A Descriptive Analysis of the Types, Targets, and Relative Frequency of Aggression in Mainstream Pornography."

[297] Adam Dodge et al., "Using Fake Video Technology To Perpetuate Intimate Partner Abuse," n.d.; Powell and Henry, "Technology-Facilitated Sexual Violence Victimization: Results From an Online Survey of Australian Adults," September 1, 2019; Henry, Flynn, and Powell, "Technology-Facilitated Domestic and Sexual Violence: A Review"; Henry and Powell, "Embodied Harms: Gender, Shame, and Technology-Facilitated Sexual Violence"; Yar, "E-Crime 2.0: The Criminological Landscape of New Social Media"; Lucas, "Deepfakes and Domestic Violence: Perpetrating Intimate Partner Abuse Using Video Technology"; Henry, "Beyond the 'Sext': Technology- Facilitated Sexual Violence and Harassment against Adult Women," n.d.; Reveley, "'It's Been Devastating': An Interpretative Phenomenological Analysis of the Experience of Being Cyberstalked," n.d.; McGlynn et al., "'It's Torture for the Soul': The Harms of Image-Based Sexual Abuse."

[298] Yar, "E-Crime 2.0"; Yar and Drew, "Image-Based Abuse, Non-Consensual Pornography, Revenge Porn"; Yar, "The Policing of Internet Sex Offences"; Majid Yar, "The Novelty of 'Cybercrime,'" n.d., 22; Henry and Powell, "Embodied Harms"; Martin, "Image-Based Sexual Abuse and Deepfakes: A Survivor Turned Activist's Perspective"; Rosewarne, "Abuse as Artefact: Understanding Digital Abuse of Women as Cultural Informant."

required prior to the application of theories. The range and infinite contexts in which sexual deepfakes exists call for a theory in which this endless ability to abuse is correctly framed. For these reasons, it is imperative to understand the sexual deepfake abuse as *rhizomatic*.

Chapter VI.

Theories and Concluding Comments

Sexual Deepfakes: A Rhizomatic Sexual Violence

The creation of synthetic sexually explicit media, including sexual deepfakes, is an egregious form of sexual violence representing multiple violations to the victim's bodily autonomy, sexual privacy, trust, and sense of personal identity – and yet for victim-survivors, this initial act is seen only as a catalyst to the harm they endured.[299] Victim-survivors experience abuse across multiple contexts by countless perpetrators, and harm from initial points of entry is amplified and extended by misogynistic, hegemonic masculinity, gender power inequities enforcing "or otherwise discriminatory beliefs that result in victim blaming and shaming responses arising."[300] In the case of sexual deepfakes, synthetic imagery is non-consensually created and posted across a slew of online locations ranging from messaging boards and forums to social media applications and mainstream pornography websites, in which victims are unfairly subjected to degrading, objectifying, personally identifying (doxing), and sexually violent harassment by other individuals.

While there is an identifiable catalyst (creation) to future experiences of abuse, victim-survivors are unable to identify a definitive end to their abuse – because it doesn't exist. In some cases, victim-survivors were inundated with intrusive and harassing commentary in which they were blamed, shamed, and held responsible by the general

[299] Danielle Keats Citron, "Sexual Privacy," *The Yale Law Journal* 128, no. 7 (2019): 1870–1960; Alexa Dodge, "Restorative Responses to the Rhizomatic Harm of Nonconsensual Pornography" (Cham: Springer International Publishing, n.d.), 565–82.
[300] Dodge, "Restorative Responses to the Rhizomatic Harm of Nonconsensual Pornography," n.d.

online public, as well as their friends and families, for *becoming pornography* without their consent or knowledge for years after the initial event had occurred. [301] Degrees of realism and sophistication had no impact on experiences of abuse or the prevention of future abuse. Instead, they became a source of encouragement for new perpetrators to create more realistic and believable content. As was the case for Annie, Ella, Fran, Lia, and Mary, whose abuse all began before 2019, and as of 2023, they still receive malicious emails and humiliating messages on social media of 'more realistic' sexual deepfakes that new perpetrators have created of them. Even in cases where perpetrators had attached disclaimers, warning viewers that the content was fake, reverberations of abuse were not influenced in severity or prevalence.[302] This was true in the case of Annie, Fran, Lia, Mary, and Ella, who all had synthetic sexually explicit media (SSEM) and sexual deepfakes created and shared of them, to which they found no difference in harm or

[301] Lia [pseud.]. Personally conducted interview with victim-survivor, Zoom, October 24, 2022; Mary [pseud.]. Personally conducted interview with victim-survivor, Zoom, November 2, 2022; Rana Ayyub, "In India, Journalists Face Slut-Shaming and Rape Threats," *The New York Times*, May 22, 2018, https://www.nytimes.com/2018/05/22/opinion/india-journalists-slut-shaming-rape.html; Noelle Martin, "Image-Based Sexual Abuse and Deepfakes: A Survivor Turned Activist's Perspective," in *The Palgrave Handbook of Gendered Violence and Technology*, ed. Anastasia Powell, Asher Flynn, and Lisa Sugiura (Cham: Springer International Publishing, 2021), 55–72, https://doi.org/10.1007/978-3-030-83734-1_4; Helen Mort, "I Was a Victim of Deepfake Porn," *Women's Magazine Australia*, October 29, 2021, https://www.womenshealth.com.au/i-was-a-victim-of-deepfake-porn/; Sophie Cockerham, "Deepfake Porn Wrecks Lives – but, as One Woman Discovered, It Takes Just 8 Seconds to Make an Image.," *Metro UK*, October 21, 2022, https://metro.co.uk/2022/10/21/deepfake-porn-takes-seconds-to-make-but-can-wreck-lives-17605029/; Rana Ayyub, "I Was The Victim Of A Deepfake Porn Plot Intended To Silence Me," n.d., 11; Jennifer Savin, "Deepfake Porn Is on the Rise – and Everyday Women Are the Target.," *Cosmopolitan*, October 6, 2022, https://www.cosmopolitan.com/uk/reports/a41534567/what-are-deepfakes/; Felicity Jackson, "Behind Every Image Is a Person," *Now Then Magazine*, January 26, 2021, https://nowthenmagazine.com/articles/helen-mort-behind-every-image-is-a-person-violence-against-women-deepfakes.

[302] Mary, Personally conducted interview with victim-survivor; Martin, "Image-Based Sexual Abuse and Deepfakes," 2021; Mort, "I Was a Victim of Deepfake Porn"; Lia, Personally conducted interview with victim-survivor; Ayyub, "I Was The Victim Of A Deepfake Porn Plot Intended To Silence Me," n.d.

violation.[303] It is clear that initial experiences of abuse while violating are often only a small portion of the abuses experienced by victim-survivors.

The seemingly infinite and intersectional harms of sexual deepfakes and SSEM are better understood through Deleuze and Guattari's (1987) philosophical concept of a rhizome.[304] Contrasting the vertical growth of tree roots, a rhizome is a type of plant stem that grows horizontally with nodes that expand in various directions.[305] The concept of a rhizome is useful in understanding the intersectionality of seemingly disparate semiotic chains.[306] In the case of sexual deepfakes, semiotic chains would be gendered sexual violence and the resulting harm.

Rhizomatic thinking is also useful in understanding sexual deepfakes through their existence along the continuum of sexual violence, a continuum in which seemingly disparate phenomena containing no specific beginning or end are ceaselessly connected through semiotic chains of systemic gender power inequities.[307] Similarly, research has established the rhizomatic nature of the Internet and deep learning.[308] Neither the Internet nor deep learning algorithms are defined by a single point of entry, central node, or anything controlling their shape or structure – they simply grow. You can remove any

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[303] Mort, "I Was a Victim of Deepfake Porn"; Ayyub, "I Was The Victim Of A Deepfake Porn Plot Intended To Silence Me," n.d.; Lia, Personally conducted interview with victim-survivor; Mary, Personally conducted interview with victim-survivor; Martin, "Image-Based Sexual Abuse and Deepfakes," 2021.
[304] Gilles Deleuze and Felix Guattari, *A Thousand Plateaus.* (London, England: Bloomsbury Academic: Bloomsbury Revelations, 1987).
[305] Deleuze and Guattari; Dodge, "Restorative Responses to the Rhizomatic Harm of Nonconsensual Pornography," n.d.
[306] Deleuze and Guattari, *A Thousand Plateaus.*
[307] McGlynn et al., "'It's Torture for the Soul,'" August 2021; Kelly, *Surviving Sexual Violence*, 1988; Kelly, "The Continuum of Sexual Violence," 1987.
[308] Matt Bluemink, "The Web as Rhizome in Deleuze and Guattari," Blue Labyrinths, *The Web as Rhizome in Deleuze and Guattari* (blog), July 15, 2015, https://bluelabyrinths.com/2015/07/15/the-web-as-rhizome-in-deleuze-and-guattari/; Nasrullah Mambrol, "The Philosophical Concept of Rhizome," Educational, *Literary Theory and Criticism* (blog), April 26, 2017, https://literariness.org/2017/04/26/the-philosophical-concept-of-rhizome/; Paul Kockelman, "The Epistemic and Performative Dynamics of Machine Learning Praxis," *Signs and Society* 8, no. 2 (March 1, 2020): 319–55, https://doi.org/10.1086/708249.

link from the Internet or any one image or text from a deep learning algorithm and their bodies remain existing and growing unharmed.[309]

To the best of my knowledge, only one scholar, Alexa Dodge (2021), has applied rhizomatic thinking to a form of image-based sexual abuse.[310] Based on the criminological practice of rhizomatic justice, addressing offenses holistically rather than singularly, Dodge argues the harms of non-consensual dissemination of sexually explicit media (NCDSEM) are similarly rhizomatic because singular mitigation efforts would not comprehensively address the intersectional and divergent harms of sexual deepfakes.[311] Adopting this framework, sexual deepfakes are equally challenging to address because of the infinite entry points resulting in limitless opportunities for abuse to occur long after the 'initial' harm had ended. Considering this study has established similarities in harms between female victim-survivors of sexual deepfakes and traditional sexual violence, rhizomatic thinking could also apply to the continuum of sexual violence wherein sexual deepfakes, 'a seemingly disparate phenomenon,' are connected to traditional sexual violence through semiotic chains of systemic gender power structures that have been reproduced and amplified through technological development.[312] This results in every aspect of sexual deepfakes encompassing the concept of the rhizome: context (Internet), structure (deep learning algorithms), foundation (continuum of sexual violence), and harm (reverberations of abuse).

The rhizomatic nature of every facet of sexual deepfakes is simultaneously encouraging and frightening. It is encouraging to know its foundation and harms are

[309] Kelly, "The Continuum of Sexual Violence," 1987; Kelly, *Surviving Sexual Violence*, 1988.
[310] Dodge, "Restorative Responses to the Rhizomatic Harm of Nonconsensual Pornography," n.d.
[311] Dodge.
[312] Kelly, "The Continuum of Sexual Violence," 1987.

familiar and well-studied phenomena with decades of expertise and knowledge. It is frightening that despite decades of research and a wealth of knowledge, gendered sexual violence remains the crux of harm within digital spaces. In this way, sexual deepfakes require a unique reflection when considering mitigation and prevention, one that is not reliant on singular efforts. According to Deleuze and Guattari (1987), "a rhizome may be broken, shattered at a given spot, but it will start up again on one of its old lines, or on new lines."[313] Likewise, responses focused on the detection of users and sexual deepfakes would have to be deployed *unanimously*, in conjunction with the implementing of platform policies suspending/banning violating users, and, more importantly, would require detection technology to detect sexual deepfakes with high levels of accuracy successfully.

While many platforms have policies in place, they are rarely enforced (e.g. Pornhub, Twitter, Reddit. etc.).[314] Many platforms do not have advanced detection technologies, making enforcement of such policies nearly impossible.[315] Finally, experts predict that deepfake creation technology will always be behind detection technology because the same technology used to detect deepfakes is used to create deepfakes:

> Deepfakes rely on a form of machine learning in which two networks are fed the same data sets and pitted against each other in a back-and-forth battle of generation and detection. Known as generative adversarial networks (GANs), these systems consist of one network creating fakes and another evaluating the fakes for flaws. The data set consists of hundreds or thousands of images and videos of the person to be imitated, and a forgery

[313] Dodge, "Restorative Responses to the Rhizomatic Harm of Nonconsensual Pornography," n.d.; Deleuze and Guattari, *A Thousand Plateaus.*
[314] McMullan, "Pornhub And Reddit Ban AI-Generated Deepfake Porn, Say It Is Non-Consensual."
[315] Alex Engler, "Fighting Deepfakes When Detection Fails" (Brookings, Center for Technology Innovation, November 14, 2019), https://www.brookings.edu/research/fighting-deepfakes-when-detection-fails/; Dolhansky et al., "The Deepfake Detection Challenge (DFDC) Preview Dataset"; Nagothu et al., "Deterring Deepfake Attacks with an Electrical Network Frequency Fingerprints Approach."

> is considered good enough when the detection network no longer rejects the results.[316]

As such, even if measures of regulation were in place, their impact would likely be futile because they would only address one portion of the problem or one portion of harm.[317] This is similar to the sentiments in 'anti-rape' technologies marketed specifically to women to protect themselves from being raped, such as the TrueLoveBra, a bra that could only be unlocked when a woman would produce certain 'love' chemicals and FemDefence, a "tampon that harboured a spike on the end to pierce the penis of an attacker."[318] This is not to say that anti-rape technology or sexual deepfake detection are trivial or useless applications. But rather, it is to demonstrate how singular measures of regulation such as these embody "the neoliberal shift from state to individual responsibility, it was places and activities that were framed as risky, rather than perpetrators."[319] The rhizomatic nature of sexual deepfake harm requires proactive prevention rather than approaches place the responsibility on women and bystanders (websites) to prevent abuse rather than on perpetrators. Responses must span across various contexts rather than the singular and narrow responses and 'solutions' that focus on abuse avoidance rather than proactive prevention.

Sexual deepfakes are a nefarious and multifaceted form of sexual violence comprised of an infinite number of seemingly disparate phenomena, containing no

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[316] Identity Management Institute (IMI), "The Deep Trouble with Deepfakes."
[317] Carl Öhman, "The Identification Game: Deepfakes and the Epistemic Limits of Identity," *Synthese* 200, no. 4 (July 25, 2022): 319, https://doi.org/10.1007/s11229-022-03798-5; Vizoso, Vaz-Álvarez, and López-García, "Fighting Deepfakes"; Bart van der Sloot and Yvette Wagensveld, "Deepfakes: Regulatory Challenges for the Synthetic Society," *Computer Law & Security Review* 46 (September 2022): 105716, https://doi.org/10.1016/j.clsr.2022.105716; Flynn et al., "Deepfakes and Digitally Altered Imagery Abuse"; Chesney and Citron, "Deep Fakes."
[318] Lesley McMillan and Deborah White, "The Promises and Perils of Anti-Rape Technologies" (Cham: Springer International Publishing, n.d.), 461–79, https://doi.org/10.1007/978-3-030-83734-1_23.
[319] McMillan and White.

specific beginning or end, and are ceaselessly connected through semiotic chains of systemic gender power inequities. Individually indicative of their own ‘microrhizome,’ the context (Internet), structure (deep learning algorithms), foundation (continuum of sexual violence), and harm (reverberations of abuse) rhizomatically formulate the phenomenon of sexual deepfakes.

Limitations and Opportunities for Future Research

This study finds synthetic sexually explicit media, inclusive of sexual deepfakes as an emergent and damaging form of sexual violence that severely impacts the lives of those who are victimized – regardless of gender identity. This study found experiences of sexual deepfake abuse across the gender spectrum: men, women, and transgender men. Previous research by Flynn et al. (2021) identified higher patterns of vulnerability in LGBTQ+ communities, recognizing the need for future research to explore experiences of sexual deepfakes in LGBTQ+ communities.[320]

This study did not ask participants to identify their race, ethnicity, or sexual orientation. Despite directly asking these questions, readily reference diversity as a contributing factor in their abuse. Similar to previous sexual violence literature, while all victims of sexual deepfakes are subjected to some form of discrimination, they do not experience discrimination equally.[321] Further research that specifically accounts for diversity amongst participants is necessary to understand how sexual deepfake abuse impacts various individuals such as within LGBTQ+ and BIPOC communities.

[320] Flynn et al., "Deepfakes and Digitally Altered Imagery Abuse: A Cross-Country Exploration of an Emerging Form of Image-Based Sexual Abuse."
[321] McGlynn, Rackley, and Houghton, "Beyond 'Revenge Porn': The Continuum of Image-Based Sexual Abuse."

Conclusion

Sexual violence is not a novel concept, and based on the findings from this study, it is evident that sexual deepfakes are a silenced but flagrant form of abuse. The democratization of deepfake technology, connection to the pornography industry, and foundation in gendered sexual violence posit severe and pervasive threats to society, particularly women. New applications for its abuse and misuse are rapidly materializing without sufficient attention to the increasing cries for help and the pool of victims left in its wake. We must look to the open-sourced repositories, decentralized platforms, social media giants, big-tech corporations, and the general members of our society to remember that virtual bodies are not disembodied and are more than pixels across a screen, whose physical beings are severely impacted by this form sexual violence. Sexual deepfakes are an imminent threat, and we must respond.

Appendix 1.

Screening Survey Data

Table 8. Help Seeking Behaviors

Questions	*Female*	*Male*	*Transgender Male*	*Total*
Have you sought help or confided in anyone regarding your experience?				
Yes	14	22	1	37
No	12	8	----	20
I am not sure	----	----	----	----
	26	**30**	**1**	**57**

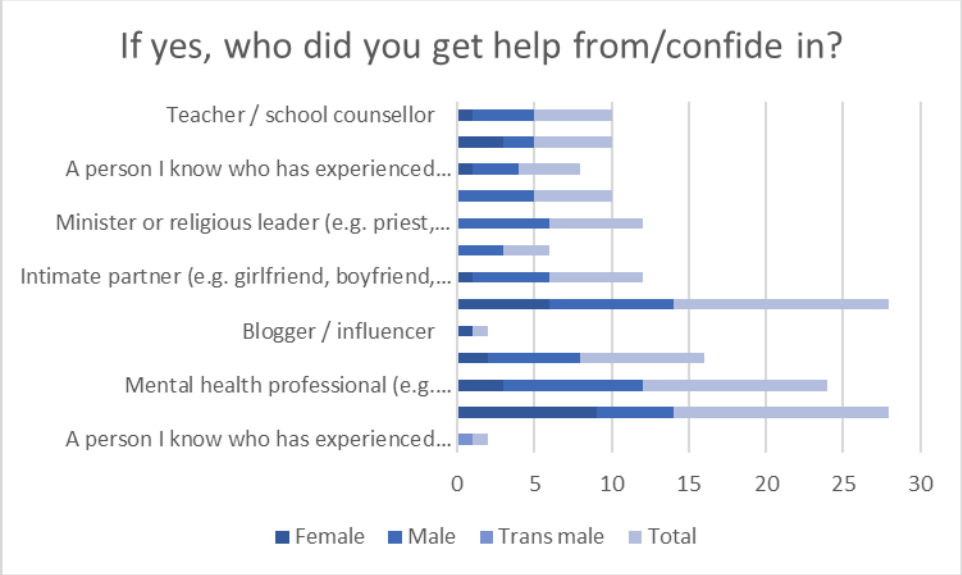


Figure 10. Individuals or Agencies Participants Confided In.

This bar chart is based on screening survey responses and represents the individuals or agencies that participants reached out to for help.

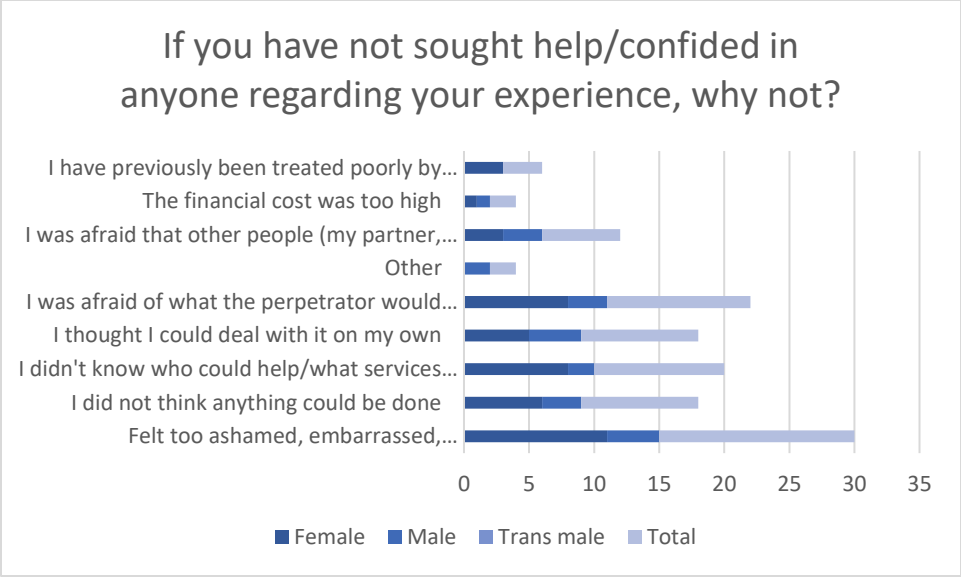


Figure 11. Reasons for Not Seeking Help.

This bar chart is based on screening survey responses and represents the reasons why participants chose not to seek help.

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