Sociotechnical Imaginaries of Safety and Reporting Technologies in US Higher Education

Kate J. Sim
Wadham College

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Abstract

This dissertation thesis titled "Sociotechnical imaginaries of safety and reporting technologies in US higher education" examines how reporting technologies reconfigure the ecosystem of campus safety in US higher education. Reporting technologies refer to case management systems for incident reporting developed by third-party vendors and implemented by campus administrators for use by students. In this thesis, I apply Jasanoff and Kim's (2015) concept of sociotechnical imaginaries to argue that product vendors, campus administrators, and students' sociotechnical imaginaries of safety mediate how they articulate and experience campus safety. The central contention of this thesis is that ideas about sexual violence and technology mutually shape sociotechnical imaginaries of safety that mediate how vendors, campus administrators, and students perceive and experience campus safety.

This thesis is organized as follows: (1) a brief cultural, sociopolitical, and legal backdrop of campus safety policies and practices through which ideas about sexual violence and technology co-produce safety imaginaries; (2) two case studies of reporting technologies—LiveSafe and Callisto—that trace the sociotechnical imaginaries that mediate the design process; and (3) ethnographically informed examination of how each reporting system operates on campus grounds to mediate the relationship between campus authorities and students. The concluding chapter considers directions in gender and sexuality studies, human-computer interaction (HCI), and science and technology studies (STS) for future scholarship.

Table of contents

1. CREATING CERTAINTY: REPORTING SYSTEMS AS A TECHNOLOGICAL SOLUTION 1

Sociotechnical imaginaries of safety: A conceptual framework 4
- A small body of work on safety technologies 4
- Sociotechnical imaginaries as a conceptual framework 12

Applying sociotechnical imaginaries 24
- Research question 24
- Research Design 25

Research ethics 36
- Participant protection 36

2. DIGITIZING CAMPUS SAFETY 40

The social imaginary of rape: From theft to stranger danger 43
- Rape as theft 43
- A case for bodily autonomy 46

Sexual violence in higher education 50
- Sexual harassment as a civil rights violation 51
- A hostile environment 55
- An "epidemic" of campus sexual assault 58

Title IX as an ecosystem 64
- Reporting under Title IX 66

Digitizing campus safety 73

3. LIVESAFE: INTUITIVE DESIGN FOR INTUITIVE SAFETY 77

Uncovering the logic of intuition 79
- On logic 80
- On intuition 83

LiveSafe's vision of intuitive safety 88
- Intuitive safety 90
- Designing for intuition 97

4. CALLISTO: ENCODING CREDIBILITY 122

Callisto's environment of expected use 124
- Vision: "repeat offender theory" 127
- Operating model: "for and by" survivors 133

Reporting as an epistemic intervention 135
- Designing for trauma 137

Time stamp, edited 166

5. SOCIOTECHNICAL RECONFIGURING OF CAMPUS SAFETY 168

Non-use as a data point 169

LiveSafe: A smart choice 172
Reaching for college students 173
Seeking clarity and delegation 174
Making smart choices 180

Callisto: A one-sided bridge 184
"A hot environment": The students vs. the administration 184
Callisto as a bridge 189
A remote possibility 191
Lost reports 196

6. CONCLUSION 198

Directions for future research 201
Co-shaping of technology and sexual politics 201
Applications of sociotechnical imaginaries 203
Reporting systems as communicative agents 204

Designing reporting technologies 206
Conclusion 214

BIBLIOGRAPHY 216

1. Creating certainty: Reporting systems as a technological solution

On April 2, 2019, the Health, Education, Labor, and Pensions Committee of the US Senate held a hearing for the reauthorization of the Higher Education Act, a legislation signed in 1965 to "strengthen the education resources" of colleges and universities. Titled "Addressing Campus Sexual Assault and Ensuring Student Safety and Rights," the hearing invited a panel of witnesses, including higher education administrators, legal scholars and practitioners, and advocates to discuss how to "create more certainty in how colleges and universities should appropriately and fairly respond to allegations of sexual assault," according to the committee chairperson Sen. Lamar Alexander.[1]

Looming over the hearing were the ongoing cultural, political, and legal debates about higher education institutions' responsibility to student safety, especially with regards to peer-to-peer sexual assault. A particular emphasis was placed on the credibility of students' sexual assault allegations and the integrity and fairness of the investigation and disciplinary procedures. Articulating sexual assault on college grounds as a crisis in certainty is reflective of the larger conversations surrounding Title IX, a federal civil rights law that constitutes the Education Amendments of 1972 and prohibits sex-based discrimination in federally funded education programs. What counts as sex-based discrimination? What responsibility do higher education institutions have over what happens privately between students on or off campus grounds? Where does individual

[1] US Senate Committee on Health, Education, Labor & Pensions, "Reauthorizing HEA: Addressing Campus Sexual Assault and Ensuring Student Safety and Rights | The U.S. Senate Committee on Health, Education, Labor & Pensions," April 2, 2019, https://www.help.senate.gov/hearings/reauthorizing-hea-addressing-campus-sexual-assault-and-ensuring-student-safety-and-rights.

student responsibility end and institutional responsibility begin? And how should such responsibility be proceduralized?

The witnesses and speakers disagreed vehemently over the sticking points that referenced Secretary of Education Betsy DeVos' proposed rules to Title IX, such as restricting the definition of sexual harassment, tightening the evidentiary standard for investigation, and enforcing cross-examination during the disciplinary procedure. In spite of the disagreements, all parties agreed that these deliberations about certainty were a necessity in their "search for truth." In order to "get at the truth," definitions need to be "clear," evidence should be collected "immediately," and investigations must be "direct."[2] These ideas about certainty, credibility, and truth—how they are absent in relation to campus sexual assault and therefore perceived as in dire need—reflect the speakers' visions of what campus safety ought to look like.

How institutions articulate the problem at hand shapes which solutions gain purchase. One of the ways in which colleges and universities implemented the search for truth is in reporting technologies for campus safety. Adopted by over 120 colleges and universities across the country, including community colleges, state school systems, and private institutions, reporting systems are touted by campus administrators and policymakers as a trustworthy and secure alternative to traditional in-person and over-the-phone reporting.[3] Created by third party vendors, reporting technologies are data-driven and semi-automated case manage systems that connect students reporting various safety concerns to responsible campus administrators. For campus administrators, reporting tools enable them to collect, document, triage, and investigate the reported safety concerns as mundane as bike theft and noise plaints or as serious as school shootings and sexual assaults. For students, reporting tools enable them to report incidents, however insignificant or dangerous they may be, anonymously from the comfort of their room at their own pace.

Embedded in the complex ecosystem of campus safety, reporting systems' design and implementation reflect how the political pressure surrounding Title IX, legal standards and norms for documenting, counting, and investigating campus safety, and campus cultures are intertwined. It is in this context that the ideas about certainty and credibility voiced by the Senate Committee speakers emerge and contour how campus

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[2] US Senate Committee on Health, Education, Labor & Pensions.

[3] LiveSafe, "Back to School: More than 100 Colleges and Universities Use LiveSafe," January 18, 2017, https://www.livesafemobile.com/safetalk/back-to-school-2017/.

safety becomes known as a public problem and reporting systems are articulated as a desirable solution.

This dissertation examines reporting technologies through a sociotechnical lens. The central question in this thesis is *how* reporting technologies reconfigure the ecosystem of campus safety in US higher education. I ask: what are the social conditions through which campus safety is articulated as a problem and reporting systems as a solution? How are particular assumptions, values, and projections encoded into the technologies? And how do these technological artifacts interact with socially situated actors? In this thesis, I argue that reporting technologies reconfigure the ecosystem of campus safety through the sociotechnical imaginaries of campus safety. Applying Jasanoff and Kim's concept, I show how ideas about sexual violence and technology co-produce sociotechnical imaginaries of safety through which reporting technologies gain purchase on campus grounds. I denaturalize the taken-for-grantedness of safety as an inherent good to show how particular narratives and quantitative forms of knowledge about campus sexual assault do the cultural work of "turning conditions into problems."[4] This articulation of safety as a problem of certainty and credibility finds purchase in "visions of what is attainable through technology."[5] I illustrate how product developers encode these sociotechnical imaginaries of safety in reporting systems' technological and visual arrangements. Through ethnographically informed methods, I demonstrate how sociotechnical imaginaries that campus administrators and students hold mediate their perceived and lived experience with reporting systems.

In this introductory chapter, I do the following. I first situate reporting technologies in a small but growing body of work on the intersection of safety and technology in order to establish sociotechnical imaginaries as a conceptual framework for analyzing the social implications of reporting technologies. This framing informs this project's core research question about *how* reporting technologies reconfigure the ecosystem of campus safety. Next, I outline my research design, which operationalizes the concept to structure methods of triangulation, data collection, and interpretivist approaches to data analysis. I then reflect on the ethical considerations this research raises. I conclude with a chapter breakdown of this dissertation.

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[4] Paul Lichterman and Kushan Dasgupta, "From Culture to Claimsmaking," *Sociological Theory* 38, no. 3 (September 2020): 236–62, https://doi.org/10.1177/0735275120947133.

[5] Sheila Jasanoff and Sang-Hyun Kim, *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power* (University of Chicago Press, 2015), https://doi.org/10.7208/chicago/9780226276663.001.0001.

Sociotechnical imaginaries of safety: A conceptual framework

This section introduces Jasanoff and Kim's concept of sociotechnical imaginaries as the central analytic for critical inquiry of reporting technologies. I begin by reviewing a small but growing body of work on safety technologies. In my reading of this body of work, I draw attention to their shortcomings or assumptions that warrant further theorization. I identify three areas of scholarship that do this: (1) safety and its imaginaries; (2) technologies of knowledge; and (3) imagined affordance. While each analytical approach enriches aspects of the relationship between safety and technology, there is a need for a conceptual scaffold that can integrate these areas. I argue that the concept of sociotechnical imaginaries does this because of the concept's commitment to denaturalizing power relations, analytical focus on the cultural work of imagination, and anchoring in sociomaterial practices of socially situated actors and institutions.

A small body of work on safety technologies

Reporting technologies constitute an intersection of safety and technology. A small but growing body of scholarship on this topic demonstrates how ideas about safety and technology mutually shape their design and implementation. Through empirical and theoretical approaches, this body of literature examines the gendered rhetoric undergirding shared ideas about safety that are encoded in the material arrangement of reporting systems. In my reading of this scholarship, I draw attention to its limitations that warrant further theorization. Mainly, I argue that existing literature on safety technologies implicitly bifurcate design and use, and that this separation obfuscates an understanding of how ideas about safety and technology co-create the conditions through which reporting technologies gain institutional purchase. I identify three analytical approaches that account for limitations and argue that sociotechnical imaginaries offers an apt and robust conceptual framework that integrates these analytical approaches.

Also known as "anti-rape devices," "prevention technologies," "crime reporting tools," or "personal safety technologies," reporting technologies are a kind of case management system created and operated by third-party vendors to connect end-users to relevant safety authorities. Its many names indicate its emergent nature and suggest how

assumptions about gender, sexual violence, and crime co-create ideas about safety. It draws expansively from cultural studies, gender and sexuality studies, human-computer interaction (HCI), law, media and communication studies, science and technology studies (STS) and applies theoretical and empirical methods to denaturalize how emerging technologies normalize and legitimate troubling assumptions about sexual violence undergirding ideas about safety.

Scholarship on safety technologies begin with the contention that "technology is a key source of men's power and a defining feature of masculinity."[6] Not only is technology as an institution masculine, "beliefs and use of technology are embedded in the production and ongoing management of gender in daily life."[7] Here, I recount feminist scholarship on the co-production of gender and technology to briefly outline crucial theoretical assumptions that underpin literature on safety technologies. Technology, always mutually constitutive with society, embodies gendered and sexualized structures of power.[8] Cockburn and Ormrod, for example, detail the social process of gendering and domesticating through which the microwave, at one point a state-of-the-art technology, becomes a devalued household item.[9] Recounting the UK's failed computerization efforts following World War II, historian Marie Hicks illuminates how ideas about gender, class, labor, and technology co-create the conditions through which women's technological labor is devalued.[10] For Balsamo, the figure of "the heroic engineer,"[11] innovator, and creator crucially embodies how masculinist assumptions, ideologies, and projections are perpetuated through technological design. The "hero technologist" is never a neutral figure: he is a situated subject, expressive of the whiteness, masculinist, and wealthy institutions of power that, as Anjali Vats writes, permits and celebrates the imagination and creatorship of certain bodies, while foreclosing and erasing others'.[12] These inquiries powerfully illuminate the inner workings of power in the question of who makes what for whom.[13]

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[6] Judy Wajcman, *TechnoFeminism*, 1 edition (Cambridge ; Malden, MA: Polity, 2004).

[7] Jennifer A. Rode, "A Theoretical Agenda for Feminist HCI," *Interacting with Computers* 23, no. 5 (September 2011): 393, https://doi.org/10.1016/j.intcom.2011.04.005.

[8] Francesca Bray, "Gender and Technology," *Annual Review of Anthropology* 36, no. 1 (September 2007): 37–53, https://doi.org/10.1146/annurev.anthro.36.081406.094328.

[9] Cynthia Cockburn and Susan Ormrod, *Gender and Technology in the Making* (SAGE Publications Ltd, 1993).

[10] Marie Hicks, *Programmed Inequality: How Britain Discarded Women Technologists and Lost Its Edge in Computing* (MIT Press, 2017).

[11] Anne Balsamo, *Designing Culture: The Technological Imagination at Work* (Durham: Duke University Press, 2011), www.dukeupress.edu/designing-culture.

[12] Anjali Vats, *The Color of Creatorship: Intellectual Property, Race, and the Making of Americans* (Stanford, Calif.: Stanford University Press, 2020).

[13] Langdon Winner, "Do Artifacts Have Politics?," *Daedalus* 109, no. 1 (Winter 1980): 121–36.

Early writings on the so-called "anti-rape" devices pose this question to denaturalize the ideologies about sexual violence embedded in the technologies and challenge the power relations of men (as creators) making technologies in the name of women's safety. Rees and White identify troubling assumptions about sexual violence embedded in rape-Axe, an internally thorned wearable device for sexual assault prevention developed by a South African doctor Sonnet Ehlers.[14] First, the device conceptualizes sexual violence as a penetrative act against women done by men, reflecting heteronormative assumptions about sexual violence.[15] Relatedly, the device assumes a stranger perpetrator, reproducing a common script of sexual violence as committed by unknown others. The device's invocation of the mythical "vagina dentata" reproduces the paradoxical representation of femininity as "either vindictive or vulnerable." These three assumptions proliferate the design and implementation of anti-rape technologies that others discuss below. Elsewhere, White & Rees compare and contrast rape-aXe's internal logic of prevention from the rhetoric of women's self-defense. While both aim to equip women with short-term strategies, White and Rees contend that rape-aXe's framing of sexual violence as an inevitability reflects its "particular cultural expectations of women as 'the weaker sex.'[16]

Studies on the anti-rape apps that followed rape-aXe similarly interrogate the ideologies underpinning apps' design, specifically the feminization, individualization, and responsibilization of safety. Of a particular concern here is how the design process shapes the conditions through which particular ideologies about safety are encoded into safety technologies' material arrangement. In their empirical study of over 200 anti-rape apps, Bivens and Hasinoff locate design as their analytical site that "provides a unique insight into how social norms—in this case, prevalent rape myths—impact technological development."[17] The authors' analysis of common features demonstrates how safety, specifically, women's safety, is expressed as "individual risk and incident prevention." From their textual analysis of anti-rape apps' promotional websites, White and McMillan

[14] Ehlers was compelled to design and develop rape-aXe following her experience of supporting women and girls who have been sexually assaulted. She marketed her device as a prevention technology, but for rape-aXe to work as intended, the wearer will have already been penetrated.

[15] Gethin Rees and Deborah White, "Vindictive but Vulnerable: Paradoxical Representations of Women as Demonstrated in Internet Discourse Surrounding an Anti-Rape Technology," *Women's Studies International Forum* 35, no. 6 (November 2012): 426–31, https://doi.org/10.1016/j.wsif.2012.09.004.

[16] Deborah White and Gethin Rees, "Self-Defense or Undermining the Self? Exploring the Possibilities and Limitations of a Novel Anti-Rape Technology," *Violence against Women* 20, no. 3 (2014): 360–68.

[17] Rena Bivens and Amy Adele Hasinoff, "Rape: Is There an App for That? An Empirical Analysis of the Features of Anti-Rape Apps," *Information, Communication & Society*, April 11, 2017, 1–18, https://doi.org/10.1080/1369118X.2017.1309444.

similarly write, "these technological responses are situated within, and highly compatible with, neoliberal culture and capitalism, they serve to further privatize and atomize the problem of sexual violence."[18] Focusing on the Apps Against Abuse Challenge discussed earlier in this chapter, Beaton explores how the challenge's particular design pathways shaped "the idea of mobilizing social networks to prevent violence against individual women."[19]

The literature discussed thus far share the objective of assessing safety technologies' efficacy. The theoretical and empirical approaches taken focus on safety technologies' features and functionalities as analytical objects "to gain an insight into the assumptions about sexual violence common among app developers."[20] This approach is useful, especially in highlighting how the gendered process of app creation in which men are creating systems ostensibly for women's safety is ripe with troubling assumptions that perpetuate raced and gendered myths about safety. In doing so, this approach is inadequate when assessing technologies designed by women in the name of women's safety. It also overlooks how apps' functionalities and embedded ideologies interact dynamically with users who bring their own set of assumptions and projects about safety and technology. Scholars share the conclusion that rape prevention apps, at least in their current form, are not only ineffective in preventing sexual violence, but also unlikely to be used in meaningful ways. White and Rees, for example, conclude, "We find it difficult to imagine the widespread introduction of such a device as instrumental, or even mildly effective, in leading to the fundamental social change necessary to tackle violence against women."[21] There is some consensus that specific features, such as reporting with evidence gathering function, may have the "potential to genuinely help reduce sexual violence"[22] pointing to a direction for further research that I take up in this project.

A second group of literature expands on this concern for how softwares "make us become the kind of user the software is for"[23] by examining how ideologies about technology enmeshed with raced and gendered imaginaries about safety produce particular subjectivities. In a collection about the cultural politics of apps, Ellcessor,

[18] Deborah White and Lesley McMillan, "Innovating the Problem Away? A Critical Study of Anti-Rape Technologies," *Violence Against Women* 26, no. 10 (August 2020): 1120–40, https://doi.org/10.1177/1077801219856115.
[19] Brian Beaton, "Safety as Net Work," *MediaTropes* V, no. 1 (2015): 105–24.
[20] Bivens and Hasinoff, "Rape."
[21] White and Rees, "Self-Defense or Undermining the Self?"
[22] Bivens and Hasinoff, "Rape."
[23] Shaowen Bardzell, "Feminist HCI: Taking Stock and Outlining an Agenda for Design," in *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (ACM, 2010), 1301–10, http://dl.acm.org/citation.cfm?id=1753521.

Elmer & Nasirvadeh, Mowlabocus, and Rentschler examine various safety technologies and how they mediate particular subjectivities.[24] As Duguay writes in the collection, "perceptions of apps are not arbitrary; they stem from the sociotechnical, political, cultural, and economic arrangements in which users are embedded." One of the ways in which reporting systems articulate safety is by figuring objects of fear; the apps affirm and reify raced and sexualized ideas about dangerous Others. Elmer and Nasirzadeh investigate how a suspicious reporting app utilizes racialized narratives of fear to frame reporting as an intuitive and bodily experience, thereby "lower[ing] the threshold of reporting to such a degree that they make mundane…the troubling technological impulse to act without thinking" against bodies of color. Examining a sex offender tracking app, Mowlabocus demonstrates how the app instrumentalizes the figure of the sex offender to amplify and make ubiquitous the "perceived risk" of everyday life. This ubiquity of lurking danger, in turn, individualizes safety as a personal responsibility. In both cases, apps delineate safety by figuring bodies of color in the first case and the sex offender in the second as objects of fear.

Apps also figure the users as subjects in need of protection. Ellcessor's analysis of a campus safety app shows how appification of personal safety stabilizes raced and gendered ideas about space and time that "construct particular bodies and spaces as at-risk," in this case, college-aged white women. In Rentschler's analysis of the Hollaback! app designed for reporting street harassment, the app embodies and reproduces a white feminist epistemology: its classification schema that expressly names "other" forms of oppression while taking gender oppression as a given "normalizes and seemingly universalizes gender oppressions as otherwise race-neutral and sexuality-neutral systems." These analyses underscore how the underpinning ideologies about safety and threat that shape app design construct, reproduce, and stabilize particular subjects. While Hollaback!'s intentions may have been well-meaning, Rentschler describes the app's vision of safety and justice as "feminist digilantism" which diagnoses sexual harassment as a set of individualized descriptive acts of witnessing and documenting incidents. The literature mentioned here takes a theoretical approach to illustrate how ideologies about safety expressed through technologies produce particular subjects.

The second group of literature discussed takes the material arrangement of reporting systems as an analytical site for examining subject formation. This approach is

[24] Jeremy Wade Morris and Sarah Murray, eds., *Appified: Culture in the Age of Apps* (Ann Arbor, MI: University of Michigan Press, 2018).

useful for interrogating the cultural work of safety apps independent of the design process, especially given that many reporting apps in circulation today expressly are designed for and by women. Empirical methods can further enrich this approach by investigating how users conform to or resist the apps' intended and implicit subject formations.

Finally, a third line of inquiry examines how collective ideas about technology mediate how safety is articulated as a problem and technology is prescribed as a solution. Key here is the role of imagination in mediating how different actors imagine what safety is and what it ought to be. For cultural studies scholar Nuttall, distrust in law enforcement, a feeling of helplessness, and a desire for direct action shapes how individuals, especially women, turn to what she terms "technological imagination" anti-rape devices.[25] Nuttall writes that rape-aXe inventor Dr. Ehlers is "not interested in understanding why what is happening is happening…or even in stopping rape. It is happening, and she is interested in "safety."" [26] Nuttall highlights how Ehlers positions "safety" and "understanding rape" in opposition: the former is direct and actionable, while the latter is slow and amorphous. It is Ehlers' "technological imagination" through which rape-aXe emerges as an actionable and direct intervention, unlike other prevention methods like education and public policy. In this regard, Nuttall's "technological imagination" echoes Jasanoff and Kim's "sociotechnical imaginaries," which I discuss later in this section, as an analytical framework that emphasizes how ideas about technology mediate what is articulated as a problem and thus seen as a solution.

Ellcessor, again examining safety technologies in the context of US higher education, similarly examines how ideas about safety and technology co-produce which technological solutions emerge as ideal. The blue lights on US campuses, implemented in the 1980s following growing student campaigns calling for campus safety, construct "an infrastructure of feeling" that "produces affective experiences of safety among students, parents, and administrators."[27] She contends that use was never a tenable criterion for assessing blue lights' efficacy: "Brochures, annual reports, and campus maps and tours were all vehicles through which to communicate the institution's commitment to 'solving' the problem of campus safety. This public face stands in contrast to the reality that blue-light emergency phones, from the beginning, were

[25] Sarah Nuttall, "Girl Bodies," *Social Text* 22, no. 1 (2004): 17–33.

[26] Nuttall.

[27] Elizabeth Ellcessor, "Blue-Light Emergency Phones on Campus: Media Infrastructures of Feeling," *International Journal of Cultural Studies* 22, no. 4 (July 2019): 499–518, https://doi.org/10.1177/1367877918820336.

understood to be of limited utility."[28] Quinlan's study of rape kits expands this literature by investigating how the perceived value of forensic rape kits "fuels linkages" between criminal justice institutions and data-driven forensic industries.[29] These linkages are held tightly by what she terms "techno-optimism," an optimistic attachment to technology as an instrument for a safer and more just society. Quinlan, drawing from Berlant, argues that this optimism is ultimately "cruel" for it "ignites a sense of possibility [that] actually makes it impossible to attain the expansive transformation for which a person or a people risks striving."[30] Stakeholders may continue to invest in developing and implementing allegedly more accurate and efficient forensic instruments, but the social conditions that shape the "problem" of rape kit back logs remain unattended, if not, unaddressed.

Cumiskey and Brewster take an empirical approach to investigate how users' interactions with safety devices are shaped by their imagination about the devices. Following a survey of 120 college-aged women, the authors conclude how the participants' perception of public space as dangerous informs their perception of pepper sprays and mobile phone as "transitional objects"[31] that afford feelings of comfort and safety to users.[32] Their study's objective is "not to measure actual use, but to assess whether or not women could *imagine* using their mobile phones in the same ways that they might *imagine* using pepper spray."[33] This empirical approach complements the more theoretical works above in emphasizing the role of imagination in enabling a particular attachment to emerging technologies as an actionable solution to social problems.

The literature in this final group illustrates the role of imagination in mediating which problems and solutions are articulated. I identify two interrelated gaps: the need for empirical analysis and the flattening of the role of institutions. In the interest of demonstrating how ideas about technology underpin how and why technologies emerge as a tractable solution, the literature overlooks how specific institutions and specific actors enact practices through which technological solutions gain purchase. Empirical

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[28] Ellcessor.

[29] Andrea Quinlan, "The Rape Kit's Promise: Techno-Optimism in the Fight Against the Backlog," *Science as Culture*, November 21, 2020, 1–25, https://doi.org/10.1080/09505431.2020.1846696.

[30] Lauren Berlant, *Cruel Optimism* (Durham: Duke University Press, 2011): 2.

[31] Kathleen M. Cumiskey and Kendra Brewster, "Mobile Phones or Pepper Spray?: Imagined Mobile Intimacy as a Weapon of Self-Defense for Women," *Feminist Media Studies* 12, no. 4 (December 2012): 590–99, https://doi.org/10.1080/14680777.2012.741893.

[32] Cumiskey and Brewster.

[33] Cumiskey and Brewster.

methods, especially ethnographic approaches, are best suited to ground the workings of technological solutionist rhetoric in specific contexts.

Thus far, I reviewed a small but growing body of literature on safety technologies in three groups. The first identified the design process as a site through which gendered ideologies about safety are encoded into app design and pointed to reporting technologies as a promising are for further research. The second examined how those ideologies construct, reproduce, and stabilize particular subjects, calling for empirical approaches that would explore how apps' internal logics interact dynamically with socially situated users. Empirical approaches are best suited to examine how these underpinning ideologies interact with users. The final group investigated how imaginations about technology mediate how the problem of safety is articulated and technologies are perceived as solutions. This approach obfuscates institutional practices through which technologies gain purchase, and I have called for empirical, especially ethnographic, approaches to account for this shortcoming.

My reading of the scholarship on safety technologies points to a helpful direction for further research. Taking reporting technologies seriously as a cultural object at the intersection of politics of safety and imaginaries about technology requires an analytical framework that can examine how technology designers, situated by their own assumptions, intentions, and aspirations, shape technological artifacts, and how this shaping creates a digitally mediated environment through which situated users negotiate and make meaning. This analysis must be located in particular institutional contexts where institutions as social actors, informed by their history, constraints, incentives, and projections, come to articulate technological solutions as apt recourse for particular problems. Informed by these directions, I take reporting technologies in the context of US higher education as the analytical object to examine how ideas about safety and technology co-create the conditions through which reporting technologies emerge as a solution to the problem of campus safety. To do this, this project requires a conceptual scaffold that can analyze both design and use as social processes of meaning making, while paying attention to the role of institutions and power in shaping those processes.

Sociotechnical imaginaries as a conceptual framework

In this section, I argue that sociotechnical imaginaries offers a useful conceptual scaffold for analyzing the social implications of reporting technologies. Sociotechnical imaginaries, as defined by Jasanoff and Kim (2015), describe the "collectively held, institutionally stabilized, and publicly performed visions of desirable futures, animated by shared understandings of forms of social life and social order attainable through, and supportive of, advances in science and tech." [34] To demonstrate why this concept is apt and useful for a critical inquiry of reporting technologies, I begin this section by identifying three areas of scholarship, informed by my reading in the previous section, that expand and nuance existing literature's analytical approaches: (1) social imaginaries of safety; (2) technologies of knowledge; and (3) imagined affordance. I argue that sociotechnical imaginaries operates as an umbrella framework that ties together these three analytical approaches.

SAFETY AND ITS IMAGINARIES

Safety is difficult to define. Perhaps it is a feeling, a principle, or a value; in its amorphousness, it becomes known through the objects of fear and danger. This section, I expand on the social construction of safety by drawing from literature from critical race studies, gender and sexuality studies, and philosophy on how power relations, especially of race, gender, and class, give shape and legitimacy to shared ideas about safety. Denaturalizing these objects thus illuminates the shared assumptions, projections, and feelings that organize how particular spaces and bodies become known as safe, while others are marked as dangerous. Historically situating safety and the objects of fear that give it shape illuminates how the rhetoric, ideologies, and practices surrounding safety are underpinned by racialized and sexualized formulation of black criminality on one end and white innocence on the other.[35] Exploring the history of LGBT citizens' call for safe spaces and the legitimization of policing practices, historian Christina Hanhardt argues that the notion of safe spaces arises from demarcating which bodies to protect against the

[34] Jasanoff and Kim, *Dreamscapes of Modernity*.

[35] See Angela Y. Davis, *Women, Race & Class*, 1st Vintage Books edition (New York: Vintage Books, 1983); Frantz Fanon, *Black Skin, White Masks*, New edition., Get Political (London: Pluto, 2008); Saidiya Hartman, "Venus in Two Acts," *Small Axe* 26, no. June 2008 (2008): 1–14; Liese M. Perrin, "Resisting Reproduction: Reconsidering Slave Contraception in the Old South," *Journal of American Studies* 35, no. 02 (August 2001), https://doi.org/10.1017/S0021875801006612.

bodies to criminalize.[36] These figures provide "not only a false sense of security, but a false sense of knowing by locating harm and danger onto discrete bodies and stories."[37] Tracing the state and associate claimsmakers' discursive work of figuring these bodies highlights how the specter of rape, specifically that of white, middle class women by enslaved and, later, working class black men,[38] underpins the cultural work of giving shape to safety.[39] Eugenicist and pseudoscientific development and circulation of racial crime statistics, many of which are still in use today (see Chapter 2), bolstered this specter with quantitative legitimacy.[40]

White innocence is co-produced with and through black criminality. In her scrutiny of racial politics built into antebellum children's toys, Bernstein (2011) demonstrates how white bodies' innocence is articulated through their ability to feel pain, while black bodies are denied the ability to feel pain, which gives permission to and justifies horrific violence. Blee's ethnographic study of women of the Ku Klux Klan in the 1920s powerfully illustrates how the call for public safety through the rhetoric of black criminality recruited and mobilized white women as willing, yet innocent, participants of racist violence.[41]

These "culturally patterned ways"[42] of articulating safety through racialized and sexualized figures are expressed and legitimated through shared feelings. Cultural studies scholarship on happiness,[43] optimism,[44] or innocence,[45] for example, offer insight into the ways in which feelings are socially organized. According to Hochschild, affects, feelings, and emotions "emerge as a clue"[46] that illuminates how institutions and intimate lives are enmeshed. As Ahmed writes, feelings "produce the very surfaces and

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[36] Christina B. Hanhardt, *Safe Space: Gay Neighborhood History and the Politics of Violence*, Perverse Modernities (Durham: Duke University Press, 2013).

[37] Joseph J. Fischel, *Sex and Harm in the Age of Consent* (Minneapolis: University of Minnesota Press, 2016), 75.

[38] Estelle B. Freedman, *Redefining Rape* (Harvard University Press, 2013).

[39] Kristin Bumiller, *In an Abusive State: How Neoliberalism Appropriated the Feminist Movement against Sexual Violence* (Durham: Duke University Press, 2008).

[40] Khalil Gibran Muhammad, *The Condemnation of Blackness: Race, Crime, and the Making of Modern Urban America* (Cambridge, Mass. ; London: Harvard University Press, 2010); Tukufu Zuberi and Eduardo Bonilla-Silva, *White Logic, White Methods: Racism and Methodology* (Lanham, Maryland: Rowman & Littlefield Publishers, Inc, 2008).

[41] Kathleen M. Blee, *Women of the Klan: Racism and Gender in the 1920s*, New ed. (Berkeley, CA; London: University of California Press, 2009).

[42] Judith Lorber, *Paradoxes of Gender* (New Haven; London: Yale University Press, 1994).

[43] Sara Ahmed, "Killing Joy: Feminism and the History of Happiness," *Signs: Journal of Women in Culture and Society* 35, no. 3 (March 2010): 571–94, https://doi.org/10.1086/648513.

[44] Berlant, *Cruel Optimism*.

[45] Robin Bernstein, *Racial Innocence: Performing American Childhood from Slavery to Civil Rights* (New York: NYU Press, 2011).

[46] Arlie Russell Hochschild, *The Managed Heart: Commercialization of Human Feeling* (Berkerley, University of California Press, 2012): 34.

boundaries that allow the individual and the social to be delineated."[47] Feelings create the boundaries that contour how individuals make sense of themselves in relation to the social. The social currency of feelings extends beyond simply delineating the individual and the social. The intensities of feelings "allow [social] structures to be reified as forms of being."[48] Thus, feelings are not a fleeting, biological reaction, but rather, a social process through which individuals "become *invested* in"[49] social structures.

Imageries, stories, and social categories play an integral role in mediating how individuals become invested in social structures. Taylor's concept of social imaginaries examines how collective imaginations structure meaning making process.[50] For Taylor, social imaginaries are not only descriptive; they are prescriptive. Widely shared, how people "imagine their social existence, how they fit together with others, how things go on between them and their fellows" shapes normative expectation of "how things ought to be."[51] These imaginaries, often visual, are "unstructured and inarticulate,"[52] and this looseness enables imaginaries to powerfully construct collective imaginations about what life ought to be. In this regard, Taylor likens social imaginaries to a map, which orients readers to unfamiliar, but legible, places.

Social categories, like race, gender, and class, operate as such legible anchors, reference points through and against which individuals make sense of their world—how it is and how it ought to be. For Fricker, identity categories like gender are "used as heuristics"[53] to guide how individuals determine who and what to believe in their everyday lives. For example, when doctors dismiss women patients with menstruation pain because he assumes that menstruating women are more sensitive and thus exaggerating their expression of pain, Fricker argues that the dismissal constitutes a form of "epistemic injustice": the patients are wronged "in their capacity as a knower" of their

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[47] Sara Ahmed, *The Cultural Politics of Emotion*, 2nd Revised edition (Edinburgh University Press, 2014): 10.

[48] Ahmed, 12.

[49] Ahmed.

[50] Charles Taylor, *Modern Social Imaginaries* (Durham: Duke University Press, 2004).

[51] Charles Taylor, *A Secular Age* (Cambridge, MA: Harvard University Press, 2007): 172.

[52] Ibid., 173.

[53] Fricker argues that these categories, or stereotypes, are neutral objects. It is when they are ascribed value judgement through society that they become forms of "identity prejudice" (36). I disagree. Even seemingly "positive" stereotypes, when emerging from a world structured by power relations of race, gender, ability, class, and sexuality, are rarely positive; in fact, the perceptive of their neutral or positive value underscores Fricker's implicit vantage point. For example, the stereotype that East Asians are good at math may appear positive: they do not pose direct harm, as is the case with the example of the menstruating woman. I would argue, however, that stereotype is an instantiation of credibility excess afforded to East Asians that reflects racist underpinnings of how East Asian-ness is ascribed social ineptitude and quantitative knowledge production. Miranda Fricker, *Epistemic Injustice: Power and the Ethics of Knowing* (Oxford University Press, 2007): 16.

own bodies and pain.[54] In other words, the patients' claims are denied credibility because of the gendered prejudice that women, especially menstruating women, are hypersensitive and therefore incapable of representing "true" circumstances of her pain. Fricker's epistemic justice thus offers a powerful conceptual framework for how social categories and imaginaries work in tandem to mediate how individuals make sense of their world.

Yap's analysis of epistemic injustice in sexual assault claims demonstrates how social categories and imaginaries co-create a particular notion of safety. Yap's core argument is that victim blaming mentality alone, as raised by literature on anti-rape technologies, is an inadequate explanatory framework. She applies epistemic justice as a framework to denaturalize the credibility excess afforded to certain perpetrators of sexual assault. In her reading of the Stanford student Brock Turner case, she demonstrates how Turner's white masculinity at an elite university placed him outside the "paradigmatic perpetrator,"[55] a racialized stranger. By locating the public's disbelief towards the case in Turner being a "non-paradigmatic perpetrator,"[56] Yap powerfully illustrates how identity categories and social imaginaries co-construct what sexual assault is and what it ought to be.

When applied to the social construction of safety, Fricker's epistemic injustice and Taylor's social imaginaries extend the conceptual framework on how ideas about race, gender, and violence mutually shape our shared ideas about safety. They do this through the powerful feelings imaginaries invoke to mark certain bodies as threatening and others as in need of protection. Imaginaries, anchored by social categories and bolstered by attached feelings, mediate how a particular vision of safety becomes known, experienced, and stabilized. Theorizing safety in this way enables this research to denaturalize safety as a particular representation or aspiration, and examine how this vision mediates socially situated actors' interaction with reporting technologies in the name of campus safety.

[54] Of course, women do not experience same degrees of epistemic injustice as women with different identities are afforded varying degrees of access to credibility. For example, Cottom discusses how the medical industry systematically denies Black mothers' credibility and care, leading to disproportionate health complications and maternal mortality among Black mothers in the US. See Tressie McMillan Cottom, *Thick: And Other Essays* (New York: The New Press, 2019).

[55] Audrey S. Yap, "Credibility Excess and the Social Imaginary in Cases of Sexual Assault," *Feminist Philosophy Quarterly* 3, no. 4 (2017): 2 https://doi.org/10.5206/fpq/2017.4.1.

[56] Yap, 14.

TECHNOLOGIES OF KNOWLEDGE

Literature on safety technologies underscores the cultural work quantification, categorization, and datafication play in mediating how technological systems mediate representation of our social worlds that, in turn, shape how we make meaning. Scholarship from critical data studies, human-computer interaction (HCI), and sociology extends how technical systems represent, reproduce, stabilize, and challenge social categories.[57] As a conceptual lens for this research, I argue that scholarly thinking on technologies of knowledge illuminates the social processes through which quantified forms of knowledge gain epistemic purchase through institutional practice, and how those representations, in turn, shape how lived experiences become known.

Quantification, categorization, classification, and datafication constitute "technologies of knowledge"[58]—they measure, count, sort, and rank human affairs into discrete numbers and figures to render social life knowable. This is, as Bowker and Star write, fundamentally an interpretive process of translation. As such, the making of numbers and categories is a product of ideological and practical decisions socially situated actors make, which "valorizes some point of view and silences another."[59] Hicks' discussion about transgender Britons' efforts to correct their gender on government-issued ID cards to access benefits,[60] for example, exemplifies how the gender categories made by computer systems reify the binary gender system and systematically exclude trans citizens from public life. Legal anthropologist Salley Engle Merry's study of domestic and international "indicators" of gender-based violence similarly reveals the ideological, institutional, and practical conditions that underpin the practice of creating, defining, and classifying categories of violence.[61]

The technologies of knowledge gain institutional practice through the dominant perception that computational systems are objective and neutral. Imagined to be essential, self-evident, and uncontestable,[62] imaginaries about numbers, data, and technology, what

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[57] Ruha Benjamin, *Race after Technology: Abolitionist Tools for the New Jim Code* (Medford, MA: Polity, 2019); John Cheney-Lippold, *We Are Data: Algorithms and the Making of Our Digital Selves* (New York: New York University Press, 2017); Angèle Christin, "What Data Can Do: A Typology of Mechanisms" (2020), 20.

[58] Sally Engle Merry, *The Seductions of Quantification: Measuring Human Rights, Gender Violence, and Sex Trafficking*, Chicago Series in Law and Society (Chicago: The University of Chicago Press, 2016).

[59] Geoffrey C. Bowker and Susan Leigh Star, *Sorting Things Out: Classification and Its Consequences* (Cambridge, MA: MIT Press, 2000), 5.

[60] Marie Hicks, "Hacking the Cis-Tem," *IEEE Annals of the History of Computing* 41, no. 1 (January 1, 2019): 20–33, https://doi.org/10.1109/MAHC.2019.2897667.

[61] Merry, *The Seductions of Quantification*.

[62] David Beer, *Metric Power*, 1st ed. 2016 edition (Palgrave Macmillan, 2016); see also Kate Sim and Margie Cheesman, "What's the Harm in Categorisation? Reflections on the Categorisation Work of Tech 4 Good,"

Porter calls "trust in numbers,"[63] affords epistemic currency to technologies of knowledge. The concept of imaginaries, again, is useful in explicating how the perceived significance of quantified forms of knowledge shape human interaction. Investigating the development of data analytics industry, Beer describes ideas about what data is and what it can do as "data imaginaries," which captures how ideas about accuracy, intelligence, predictiveness, and accessibility produce real-time analytics' perceived, and thus, experienced significance.[64] Similarly, social media scholar Tainy Bucher's use of "algorithmic imaginary" illuminates how Facebook users' imagination of the app's algorithm structure their behavior and experience.[65]

By mediating readers' interpretation of the social world, technologies of knowledge "intervene in the social worlds [they] depict…they cause people to think and act differently,"[66] a quality that Espeland and Stevens term knowledge technologies' reactivity and Hacking describes as "making up people."[67] As technologies of knowledge gain institutional purchase and mediate how the social world becomes known, they construct particular subjectivities. Earlier, Rentschler's discussion of Hollaback! app's "classificatory schema" exemplifies how the categories of reportable offenses reproduce a particular epistemology of understanding violence against women.[68] In this regard, technologies of knowledge are prescriptive: "they are not just capturing, they are also, often, instructing."[69] On one hand, the creation of Kinsey scale,[70] for example, or international indicators of domestic violence[71] give visibility and legitimacy to socially marginalized identities and issues. Technologies of knowledge also essentialize and erase social life, as Muhammad's interrogation of encoded black criminality in American

Big Data & Society (blog), March 23, 2020, https://bigdatasoc.blogspot.com/2020/03/whats-harm-in-categorisation.html.

[63] Theodore M. Porter, *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life* (Princeton University Press, 1995), https://www.jstor.org/stable/j.ctt7sp8x.

[64] David Beer, "The Data Analytics Industry and the Promise of Real-Time Knowing: Perpetuating and Deploying a Rationality of Speed," *Journal of Cultural Economy* 10, no. 1 (January 2, 2017): 21–33, https://doi.org/10.1080/17530350.2016.1230771.

[65] Taina Bucher, *If...Then: Algorithmic Power and Politics*, Oxford Studies in Digital Politics (New York: Oxford University Press, 2018).

[66] Wendy Nelson Espeland and Mitchell L. Stevens, "A Sociology of Quantification," *European Journal of Sociology* 49, no. 3 (December 2008): 412, https://doi.org/10.1017/S0003975609000150.

[67] Ian Hacking, *The Social Construction of What?* (Cambridge, MA: London: Harvard University Press, 1999).

[68] Rentschler in Morris and Murray, *Appified: Culture in the Age of Apps*.

[69] Beer, *Metric Power*, 138.

[70] Christin, "What Data Can Do: A Typology of Mechanisms."

[71] Merry, *The Seductions of Quantification*.

racial statistics[72] and Bivens and Hoque's analysis of Bumble's conflation of gender, sex, and sexuality[73] exemplify.

Technologies of knowledge adapted for computer systems exacerbate the "misalignment of life expectations and classificatory systems"[74] through computational systems' speed and scale. Quantified representations of knowledge are a bedrock of computational systems: they codify the social world into discrete units and render them recognizable to computer systems. The discriminatory politics underpinning classificatory schemes used by Google's search algorithm,[75] welfare eligibility assessment programs,[76] healthcare rationing tools,[77] or COVID-19 contact tracing apps[78] are just a few examples of how technological systems "make up" subjects.

As Merry writes, "rather than revealing truth," technologies of knowledge "create it…The result is a particular way of dividing up and making known one reality among many possibilities."[79] Applied to this research, above conceptualizations of knowledge technologies illuminate how they interpret, represent, mediate, and intervene on the social world.

IMAGINED AFFORDANCE

A growing body of work on safety technologies implicitly separates design and use. Focusing on each process helpfully illustrates power relations and implications specific to each; there is a need for a conceptual framework that can integrate the bi-directionality of design and use. As Madeline Akrich writes, "we cannot be satisfied methodologically with the designer's or user's point of view alone. Instead we have to go back and forth continually between the designer and the user, between the designer's projected user and the real user."[80] Critical theorization of technology, especially the concept of imagined affordance, as a process of mediation offers such a framework. I

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[72] Muhammad, *The Condemnation of Blackness*.

[73] Rena Bivens and Anna Shah Hoque, "Programming Sex, Gender, and Sexuality: Infrastructural Failures in the 'Feminist' Dating App Bumble," *Canadian Journal of Communication* 43 (2018): 441–59.

[74] Bowker and Star, *Sorting Things Out*, 27.

[75] Safiya Umoja Noble, *Algorithms of Oppression: How Search Engines Reinforce Racism* (New York: University Press, 2018).

[76] Virginia Eubanks, *Automating Inequality: How High-Tech Tools Profile, Police, and Punish the Poor* (St. Martin's Press, 2018).

[77] Ziad Obermeyer et al., "Dissecting Racial Bias in an Algorithm Used to Manage the Health of Populations," *Science* 366, no. 6464 (October 25, 2019): 447–53, https://doi.org/10.1126/science.aax2342.

[78] Kate Sim and Nahema Marshal, "Safeguarding Digital Rights Amidst COVID-19 Through Strategic Litigation on AI" (Digital Freedom Fund, December 2020).

[79] Merry, *The Seductions of Quantification*, 5.

[80] Madeline Akrich, "The De-Scription of Technical Objects," in *Shaping Technology/Building Society: Studies in Sociotechnical Change*, ed. Wiebe E. Bijker and John Law, Inside Technology (Cambridge, Mass.: MIT Press, 1992): 209.

begin this section by briefly recounting theories of affordance. I then elaborate on how imagined affordance as a concept integrates ethical, political, and social implications of technology design and use.

The question of agency is at the heart of analyzing technology's social implications. Bruno Latour's famous example of "guns kill people" makes a case for taking technological artifacts seriously as an agent. As he explains, the moralist reading that "people kill, not guns" overemphasizes human agency and underplays the conditions enabled by the user's proximity to the gun; the materialist reading that "guns enable killing," on the other hand, alleviates the gun-holder's responsibility and magnifies the gun's impact. Neither adequately conceptualizes how technological artifacts operate "as full-fledged social actors"[81] that mediate social relations. For the gun to be fired, it brings together a person with violent intentions and a gun in their proximity to a particular social setting that create the conditions in which the gun is fired. While Latour's conceptualization of "technical mediation" is helpful in ascribing agency to technological artifacts, it flattens the question of power and responsibility.[82] As Jasanoff and Kim write, the singular focus on the sociotechnical is bound with "moral nihilism" through which all agents, human and non-human, are rendered equal.[83] Lucas Introna grapples with this morality question in developing a "co-constitutive account of sociomaterial agency": he writes, "as beings-in-the-world, our tools and us always already *co-constitute each other's possibility for being agents*" and it is through this interplay that agency emerges.[84]

Drawing from Latour's work on technical mediation, theories of affordance[85] conceptualize the bidirectionality of human-technology interaction. The concept has been applied widely and, at times, loosely to simply mean features or functions of artifacts. Davis' conceptualization and application of affordances add specificity to how the concept can elucidate "how objects shape action for socially situated subjects."[86] Recognizing human-technology interaction as co-constitutive is not mutually exclusive from taking the human's responsibility seriously. Thus, her operationalization of the

[81] Bruno Latour, "On Technical Mediation," *Common Knowledge* 3, no. 2 (1994): 64.

[82] See Jenny L. Davis, *How Artifacts Afford: The Power and Politics of Everyday Things* (MIT Press, 2020); Jasanoff and Kim, *Dreamscapes of Modernity*.

[83] Jasanoff and Kim, *Dreamscapes of Modernity*, 17.

[84] Lucas D. Introna, "Towards a Post-Human Intra-Actional Account of Sociomaterial Agency (and Morality)," in *The Moral Status of Technical Artefacts* (Springer, 2014): 3.

[85] See Taina Bucher and Anne Helmond, "The Affordances of Social Media Platforms," ed. J. Burgess, T. Poell, and A. Marwick, *SAGE Handbook of Social Media. London: Sage*, 2017; Donald A Norman, "Affordance, Conventions, and Design," *Interactions*, June 1999.

[86] Davis, *How Artifacts Afford: The Power and Politics of Everyday Things*, 6.

concept as the "mechanisms and conditions framework" expands beyond a description of "what a technology is or does" to capture "how a technology operates": it captures both the push and pull between artifacts and user-subjects (mechanisms) and the situated environments in and through which those interactions unfold (conditions).[87]

Perception of what artifacts can and should do crucially shapes these interactions. Nagy and Neff's concept of "imagined affordance" is useful here. Imagined affordance emerges from the tripartite relationship between users' perceptions, artifact's materiality, and designers' intentions.[88] Users do not simply receive instructions from designers through the material arrangement of technological objects. Rather, how they interact with technologies is shaped by "certain expectations about their communication technologies, data, and media that, in effect and practice, shape how they approach and what actions they think are suggested. Foregrounding socially situated subjects' perceptions underscores how "the meanings of technology are negotiated and renegotiated by users through perception, mediation, and materiality."[89] The concept's versatility enables its application across various technologies, including Semenzin and Bainotti's examination of how Telegram's affordances enable homosociality to cohere around the sharing of non-consensual intimate images[90] or Alper's call to account for greater neurodiversity in how individuals perceive and experience technology.[91]

By paying attention to the friction between intentions and perceptions that structures the relationship between technology and society, imagined affordance integrates conceptualizations of design and use. Design, as Suchman writes, is a process of translation: contrary to the heroic engineer figure, design offers an "entry into the networks of working relations that make technical systems possible."[92] How these working relations articulate, negotiate, translate, and operationalize their visions and intentions structures the logics, shape, and form of technological artifacts.[93] Design, then,

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[87] Ibid., 60.

[88] Peter Nagy and Gina Neff, "Imagined Affordance: Reconstructing a Keyword for Communication Theory," *Social Media + Society* 1, no. 2 (2015): 1–9.

[89] Ibid., 7.

[90] Silvia Semenzin and Lucia Bainotti, "The Use of Telegram for Non-Consensual Dissemination of Intimate Images: Gendered Affordances and the Construction of Masculinities," *Social Media + Society* 6, no. 4 (October 1, 2020): 2056305120984453, https://doi.org/10.1177/2056305120984453.

[91] Meryl Alper, "Inclusive Sensory Ethnography: Studying New Media and Neurodiversity in Everyday Life," *New Media & Society* 20, no. 10 (October 2018): 3560–79, https://doi.org/10.1177/1461444818755394.

[92] Lucy Suchman, "Located Accountabilities in Technology Production," *Scandinavian Journal of Information Systems* 14, no. 2 (2002): 7.

[93] Bardzell, "Feminist HCI"; Shaowen Bardzell and Jeffrey Bardzell, "Towards a Feminist HCI Methodology: Social Science, Feminism, and HCI," in *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (ACM, 2011), 675–84; Silvia Lindtner, Shaowen Bardzell, and Jeffrey Bardzell, "Reconstituting the Utopian Vision of Making: HCI After Technosolutionism," in *Proceedings of the 2016 CHI Conference on*

is a set of socially situated practices "whereby the world is dynamically reconfigured by specific acts through which boundaries are constituted and reenacted."[94] The resulting artifacts interact dynamically in the social world mediated by users' own assumptions and projections. The interpretive flexibility of artifacts, as Kline and Pinch's study of automobile use in rural America illustrates, positions users as active agents in shaping the social meaning of technology.[95] Imagined affordance takes into account the push and pull in "the relationship between technology and sociality" where "sociotechnical systems act with and sometimes without or despite us."[96]

For digital systems, the user interface is a site through which designers' intentions, the material arrangement of the digital environment, and users' projections come into play. Designed by a loose web of product developers and used by intended and unexpected audiences, often within the broader political economy of commercial deployment, interfaces are laden with "inherent frictions."[97] Examining these frictions thus raises questions like, "Who is the subject of an interface? How are we produced as subjects of the discourses on the screen?"[98] Ash et al. operationalize this idea of frictions into a vocabulary for explicating how design choices embody and reify forms of self-governance in their analysis of credit websites.[99] Their reading of a slider that invites users to communicate how much money they are willing to borrow illuminates how the sliders, rather than, say, an open form to users to manually type in the amount, "convert the quantity of money to a quality of motion."[100] The swipe feature in dating apps,[101] behavioral "nudges" in gaming,[102] and the removal of haptics from touchscreens to create a sense of seamlessness[103] are instantiations of how the interface mediates socially

Human Factors in Computing Systems (CHI'16: CHI Conference on Human Factors in Computing Systems, San Jose California USA: ACM, 2016), 1390–1402, https://doi.org/10.1145/2858036.2858506.

[94] Balsamo, *Designing Culture,* 35.

[95] Ronald Kline and Trevor Pinch, "Users as Agents of Technological Change: The Social Construction of the Automobile in the Rural United States," *Technology and Culture* 37, no. 4 (October 1996): 763, https://doi.org/10.2307/3107097.

[96] Nagy and Neff, "Imagined Affordance," 2.

[97] Gillian Rose, "Rethinking the Geographies of Cultural 'Objects' through Digital Technologies: Interface, Network and Friction," *Progress in Human Geography* 40, no. 3 (June 2016): 343 https://doi.org/10.1177/0309132515580493.

[98] Johanna Drucker, *Graphesis: Visual Forms of Knowledge Production* (Cambridge MA: Harvard University Press, 2014).

[99] James Ash et al., "Digital Interface Design and Power: Friction, Threshold, Transition," *Environment and Planning D: Society and Space*, April 13, 2018, 026377581876742, https://doi.org/10.1177/0263775818767426.

[100] Ibid., 9.

[101] Stefanie Duguay, in *Appified.*

[102] Luke Stark, "The Emotional Context of Information Privacy," *The Information Society* 32, no. 1 (January 2016): 14–27, https://doi.org/10.1080/01972243.2015.1107167.

[103] Rachel Plotnick, "Force, Flatness, and Touch Without Feeling: Thinking Historically About Haptics and Buttons," *New Media & Society* 19, no. 10 (October 2017): 1632–52, https://doi.org/10.1177/1461444817717510.

situated subjects. The concept of imagined affordance thus integrates "users' perceptions, attitudes, and expectations; the materiality and functionality of technologies; intentions and perceptions of designers"[104] by centering on imagination as the focal analytic.

SOCIOTECHNICAL IMAGINARIES

Thus far, I identified three scholarly conversations that conceptualize different aspects of safety technologies. Literature on safety and its imaginaries denaturalizes safety and its associated feelings to illuminate the power structures that give shape to collective ideas about what safety is and what it ought to be. Scholarship on technologies of knowledge details the social practices through which particular representations of the social world enact power through their institutional purchase. Finally, the concept of imagined affordance magnifies how imagination mediates the relationship between designers, users, and technological systems.

The theorizations discussed above helpfully advance respective levels of analytical inquiry, but there is a need for a conceptual scaffold that integrates them for a critical inquiry of reporting technologies. Understanding the racialization and sexualization of safety reveals power structures at play, but it is unable to analyze the relationship between those structures of power and technology. Technologies of knowledge illuminates how computational processes "intervene," as Espeland writes, on the social world, but this framework does not detail how socially situated subjects interpret, negotiate, and challenge those forms of knowledge production. Imagined affordance magnifies technology design and use as mediated processes, but the question of how those mediated practices unfold in the everyday remains unaddressed. "New technologies may not only lead to new arrangements of people and things," writes Akrich, "they may, in addition, generate and 'naturalize' new forms and orders of causality and, indeed, new forms of knowledge about the world."[105] As one such "new" technology, reporting technologies warrant a conceptual framework that can integrate these three approaches while bridging their shortcomings.

Jasanoff and Kim's sociotechnical imaginaries as an analytic does this. Sociotechnical imaginaries are "collectively held, institutionally stabilized, and publicly performed visions of desirable futures, animated by shared understandings of forms of social life and social order attainable through, and supportive of, advances in science and

[104] Nagy and Neff, "Imagined Affordance."
[105] Akrich, "The De-Scription of Technical Objects," 207.

technology."[106] Its focus on the mediating and instructive role of imagination as a socially situated practice makes it a particularly apt analytic for a critical inquiry of reporting technologies. At the heart of the concept is the commitment to denaturalize particular "visions of technology" through which norms are enacted and stabilized. This analytical emphasis on the cultural work of imagination enables a robust theorization of safety as it is co-constructed by and through visions of technology. Jasanoff and Kim's extension of Taylor's imaginaries as an analytic allows the relationship between safety and technology to be understood as a social practice that encodes particular visions of how social life ought to be. Imaginations, then, are performed by socially situated actors and institutionally stabilized. Sociotechnical imaginaries also anchors theorizations of technologies of knowledge in their institutional contexts. Studies on the development, circulation, and stabilization of technologies of knowledge are made powerful through their "ethnographic sensibility,"[107] which illustrates how particular forms and processes of knowledge production gain purchase in institutional contexts. Finally, the concept, when complemented by imagined affordance, enables the researcher to zoom in and out of technical mediation to amplify the relationship between particular technologies, their designers, and users, while situating this relationship within larger power structures.

The sociotechnical imaginaries thus offers a strong conceptual scaffold that is committed to understanding power relations and pays attention to material practices. The sociotechnical imaginaries of safety builds on and engages with the three areas of literature I discussed above. Its focus on the imaginative and normative aspects of meaning making buttresses the workings of raced and gendered power relations that co-produce ideas about safety and technology. Its attention to material practices maps neatly onto technological design as a social process. Finally, it takes technological artifacts seriously as objects that give meaning to social relations and works well in tandem with theories of affordance. With this in mind, the following section outlines how I operationalize the concept for my research design.

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[106] Jasanoff and Kim, *Dreamscapes of Modernity*, 4.

[107] Susan Leigh Star, "The Ethnography of Infrastructure," *American Behavioral Scientist* 43, no. 3 (December 1999): 377–91.

Applying sociotechnical imaginaries

Sociotechnical imaginaries as a concept is not only analytical, but also methodological. In this section, I introduce my research question and detail how I apply sociotechnical imaginaries as a methodological framework for this dissertation project. I begin by explaining how and why an inductive and interpretivist approach was taken to explore the role of reporting technologies. I discuss why a qualitative approach informed by critical scholarship on power relations is an apt methodological framework for this research. I then elaborate on the method of triangulation to investigate three interrelated but unique dimensions of studying reporting systems in their use-contexts: understanding the legal and political backdrop that situates reporting technologies; examining the process through which situated designers encode their values in reporting tools; and investigating how those values interact dynamically with situated users.

Research question

As Jasanoff and Kim write, "a theoretical term is worth little unless it fits into the circumstances of the world, casting light on corners that need illumination."[108] The concept, according to Jasanoff and Kim, is best suited for interpretivist projects that delve into processes of meaning making through comparisons. The concept's analytical flexibility and attention to embodied practices enables an explanatory work that can simultaneously trace the cultural work of imaginaries while locating them in their situated contexts.

My preliminary investigation during 2015 to 2016 informed my research question. Initial efforts to follow safety technologies from ideation to implementation raised a number of challenges, including their short lifespan, constant rebranding, and limited access to designers as potential participants. Documenting these systems demonstrated not only that there was a market for safety technologies that was growing, but also that there was a particular interest in digitizing the reporting process. In the context of the US, higher education institutions led implementing reporting instruments, as workplaces, military, and others soon followed. Reporting systems also gained traction internationally, including the UK and EU, India, and South Korea, often in the aftermath of public sexual harassment cases. It also identified key stakeholders in the market for

[108] Jasanoff and Kim, *Dreamscapes of Modernity*.

personal safety technologies: third-party vendors, usually startups, develop case management softwares; institutions, in this case higher education, purchase these systems, to be used by the members of the institution.[109] These early findings informed my research question by identifying reporting instruments as a particular object of inquiry and underscoring the need to analyze them within their institutional contexts of implementation.

My preliminary findings demonstrate an empirical case for examining how reporting technologies operate when embedded in the situated processes of design and implementation. To do this, I ask:

RQ: How do reporting technologies reconfigure the ecosystem of campus safety in US higher education?

The object of inquiry at the center of this project is the social relations of campus safety mediated by reporting technologies. Sociotechnical imaginaries offers an anchoring framework that enables attention to how situated social actors and their particular imaginaries mediate their interaction with technologies, while maintaining focus on the larger structures of power that contour these interactions. Applied to this research, the concept captures the bi-directionality of the co-shaping of technology and society: it examines how normative ideas about safety and technology mutually shape imaginaries about campus safety; it also follows how these ideas emerge from and are encoded in how socially situated actors interact with reporting systems. Together, they illuminate how reporting systems, as an imagined technological solution, reconfigure campus safety relations in the context of US higher education.

Research Design

This section details how I operationalized my research question into three parts through a method of triangulation. Each method is designed to explore a particular dimension of reporting instruments' social life on college and university campuses. Complementing triangulation, comparison of empirical cases adds specificity and richness to the cultural work reporting instruments perform in situated contexts. I outline

[109] Though not all. While touted as universally available, a closer look demonstrates how reporting systems are designed specifically for student users and how vendors cater to students. This leaves out university employees, including support staff, research assistants, and graduate students, among others. For purposes of this research, I focus on the systems' intended userbase of students.

my overall research design first and proceed to detail each component and how they inform and complement each other.

Qualitative methods in the interpretivist tradition are best positioned to investigate the question of *how*. Qualitative research in the interpretivist tradition aims to "make sense of, or interpret, phenomena in terms of meanings people bring to them."[110] It captures how participants make and practice meaning through social processes. Interpretivist inquiries seek "to understand the cultural situations in which [systems] are built and implemented."[111] Ethnographic methods are especially well-suited for investigating how people make sense of and interact with digital objects and how these interactions are contoured by their situated contexts.

Triangulation of methods in qualitative research brings together different sources and perspectives of inquiry that enriches the quality and depth of research. Triangulation does not refer to simply diversifying and combining different analytical and methodological approaches. According to Flick, triangulation is a methodological strategy that "aims at broader, deeper, more comprehensive understanding of what is studied"[112] and is especially effective when directed at studies that observe discrepancies in findings. In this research, an important discrepancy is the disconnect between participants' perceived and actual engagement with reporting technologies that are not easily explained by empirical study of use. This kind of disconnect is indicative of how the relationship between people and technologies calls for a more robust analytical framework and thus methodological approaches. Ethnographic methods in particular, as Seaver remarks, are "well suited to life among plural methods"[113] that investigate different layers of the relationship between people, culture, and technologies.

This project thus triangulates ethnographically informed methods, each designed to examine and complement different dimensions of knowledge through comparison. The table below details the methods of triangulation employed to conduct two levels of analysis:

Method used	**Sub-research question**	**Approaches taken**	**Objects of analysis**	**Sites of analysis**

[110] Norman K. Denzin and Yvonna S. Lincoln, *The Landscape of Qualitative Research: Theories and Issues* (Thousand Oaks, CA; London: Sage Publications, 1998).
[111] Nick Seaver, "Algorithms as Culture: Some Tactics for the Ethnography of Algorithmic Systems," *Big Data & Society* 4, no. 2 (December 2017): 1–12, https://doi.org/10.1177/2053951717738104.
[112] Uwe Flick, "Triangulation in Data Collection," in *The SAGE Handbook of Qualitative Data Collection*, ed. Uwe Flick (London: SAGE Publications Ltd, 2018), 527–44, https://doi.org/10.4135/9781526416070.
[113] Seaver, "Algorithms as Culture."

Interface analysis	What visions of safety are encoded in reporting systems?	Walkthrough method (Light et al. 2018) In-depth and semi-structured interviews and observations of product vendors	Reporting systems: (1) LiveSafe; and (2) Callisto Participant group #1: product vendor employees	Reporting system interfaces for Livesafe and Callisto; Vendor offices
Interviews and observations	How do reporting systems mediate campus safety administrators and students' experience of campus safety?	In-depth and semi-structured, interviews and observations	Participant group #2: campus administrators Participant group #3: students	Three differently-sized colleges and universities in California

Table of methods triangulated.

The first level of analysis aims to uncover the hidden logics and assumptions that undergird the design, implementation, and use of reporting technologies by employing the walkthrough method[114] and semi-structured interviews with the developers at each product vendor. The objective here is to systematically investigate how particular technologies express particular visions of safety. The next level of analysis concerns how socially situated actors interact with reporting instruments' encoded safety imaginaries. In the following discussion, I detail each method used.

SUB-RQ#1: WHAT VISIONS OF CAMPUS SAFETY ARE ENCODED IN REPORTING SYSTEMS?

This level of inquiry aims to uncover how reporting technologies are expressed as a desirable technological solution to the problem of campus safety. The objective here is to investigate how reporting technologies interpret and codify ideas about gender, safety, and technology through their visual and technical arrangements. I employed the walkthrough method[115] to systematically study reporting technologies' internal logics and how those logics shape users' experiences. I first explain how LiveSafe and Callisto were selected based on my preliminary findings and outline how the walkthrough method was applied. I then offer a brief primer on the walkthrough method and detail my data

[114] Ben Light, Jean Burgess, and Stefanie Duguay, "The Walkthrough Method: An Approach to the Study of Apps," *New Media & Society*, 2016, 1–20, https://doi.org/10.1177/1461444816675438.
[115] Light, Burgess, and Duguay, "The Walkthrough Method."

collection process. Analysis based on this method forms the third and fourth chapters of this dissertation.

Two safety reporting applications are closely examined in this project: LiveSafe and Callisto. LiveSafe is a combination of smartphone application and Web-based dashboard created by the eponymous vendor (now called Vector Technologies). The smartphone app collects reports ("tips," as they are called by the system) and other safety related concerns from end-users and displays them in real-time to a back-end user's dashboard browser, which organizes and manages tips. Callisto is a Web-based application designed for sexual violence. Callisto offers a trauma-informed reporting interface that documents incidents. Documents collected can "enter into match" to give permission to a matching algorithm which will detect complaints with shared offenders. Users then have the option to escalate their written accounts into formal reports.

Studying these two reporting tools offers insight into the situated inner workings of the sociotechnical imaginaries associated with reporting technologies. In this regard, my approach to comparison is more akin to a close examination of two case studies. As Jasanoff and Kim write, sociotechnical imaginaries as a concept is best suited for interpretivist inquiries that examine meaning making through comparative approaches:

> The challenge for analysts is to conduct their own comparisons with epistemic charity and due respect for difference: not to apply universal yardsticks for measuring advances toward, or deviance from, allegedly transcendental ideals but instead to reveal, and destabilize if we are so inclined, the naturalized logics of functioning, self-contained, and self-replicating social and political systems.[116]

The task is to follow the inner workings of sociotechnical imaginaries in their situated contexts and resist the impulse to "apply universal yardsticks." The objective is not to compare reporting technologies' impact, but rather, to enable comparison to capture reporting systems' "naturalized logics" and how they operate in their situated contexts. To do this, a casing approach was taken to select LiveSafe and Callisto. Casing is a method that allows for a close scrutiny of a particular context in relation to a phenomenon being observed.[117] As an approach that takes a deep dive into a particular setting, a carefully selected case can enrich higher-level analysis of social processes at work. The

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[116] Jasanoff and Kim, *Dreamscapes of Modernity*.

[117] Robert K. Yin, *Case Study Research: Design and Methods*, Applied Social Research Methods Series ; v. 5 (Thousand Oaks, CA: Sage, 1984).

aim here is not to draw a fixed generalization from a single case study,[118] but rather, to examine a case as it sheds lights on how "social objects and human populations come into being, and in what ways, and what their effects are in shaping subsequent social action."[119] Comparative cases add rigor and depth to this analysis by emphasizing the presence or absence of particular social conditions and processes at play. Comparing the design and implementation of two reporting systems in similar settings thus allows me to focus on how the particular logics, designs, and implementations of respective reporting systems come into being against the backdrop of campus safety. As I detail in the following chapters, the different ways in which each system articulates campus safety shapes who uses them and how they do so.

I began collecting a database of safety technologies between 2015 and 2017. Even during those two years, many technologies became unavailable due to vendor dissolution or pivot and public pushback. Unlike their competitors, LiveSafe and Callisto managed to sustain and grow their products by marketing their products as reporting technologies designed specifically for campus safety. By 2017, LiveSafe was adopted in over 120 colleges and universities and Callisto had a dedicated clientele of 13 partner campuses in the US. Beyond their longevity, both systems shared a number of features that well-suited them for a comparison. They both framed their products as a reporting technology and articulated safety as a core value. They received similar attention from the public, including recognition from White House innovation challenges[120] and exposure in news media. They also shared the B-B-C (business-to-business-to-client) business model, governance model including technical experts and victims' advocates, and organizational structure as a small startup on its way to becoming a mid-sized vendor.

To systematize my analysis of both apps, I employed the walkthrough method proposed by Light et al. The walkthrough method "provides a systematic approach to identifying cultural discourses that shape and are perpetuated by interface element"[121] that shape users' experiences. It brings together an STS approach to taking technological artifacts seriously as agents that co-produce social meaning with cultural studies' penchant for exploring the symbolic and material representations of social practices in order to "examine the workings of an app as a sociotechnical artefact" with an

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[118] Bent Flyvbjerg, "Five Misunderstandings About Case-Study Research," *Qualitative Inquiry* 12, no. 2 (April 2006): 219–45, https://doi.org/10.1177/1077800405284363.

[119] David Byrne and Charles C. Ragin, *The SAGE Handbook of Case-Based Methods* (SAGE Publications, 2009).

[120] "Apps Against Abuse," The White House, 2011, https://obamawhitehouse.archives.gov/node/70363.

[121] Light, Burgess, and Duguay, "The Walkthrough Method."

"ethnographic sensibility."[122] The walkthrough method is a useful methodological framework because reporting technologies, through a particular arrangement of its visual and technical features, construct a use-environment in and through which users make sense of safety and danger. In this regard, the walkthrough method offers a systematic scaffold that complicates use as a vertical and hierarchal interaction set forth by designers and followed by users. Rather, the walkthrough method brings attention to the tensions that emerge from software developers' assumptions, values, and projections and users' expectations, interpretations, and aspirations. These tensions underscore how technological artefacts mediate social relations.

Data collection

The app's interface is thus a key source of analysis. Light et al. (2016) advise moving from mapping the app's "environment of expected use (9) to a "technical walkthrough" of various flows of use scenarios.[123] Vision, operating model, and governance structure constitute an app's "environment of expected use": vision describes the app's expressed purpose and target user base, operating model explains the app's business strategy, and governance refers to how the vendor regulates user behavior in service of its vision. The "technical walkthrough" that follows requires the researcher to generate fieldnotes and memos as they "systematically trace" (11) key affordances and constraints.

I followed these two steps between 2017 and 2019. I began by taking a screengrab of each vendor's websites, promotional materials (i.e, brochures, stickers), and governance documents (i.e., ToS and Privacy Statement) to examine the app's environment of expected use. Screengrabs from websites were labeled to capture each file's placement within the larger information architecture. For example, information about the vendor placed in the third tab of the website was labeled 'callisto_homepage_3aboutus.' This first stage of the walkthrough method provided a comprehensive analysis of how each vendor justifies its product, articulates its purpose, and appeals to clients and users. The technical walkthrough followed after. I similarly took screengrabs of every possible flow of each interface to assume the position of a user. I paid particular attention to the recurring symbols, color palette, instructions, and visual arrangement that communicated intended use scenarios to the user. During this phase, it

[122] Star, "The Ethnography of Infrastructure."
[123] Light, Burgess, and Duguay, "The Walkthrough Method."

was important to systematically document the different flows. To do this, I employed a similar labeling system, which enabled me to keep track of the interface's overall information architecture, while focusing on the features of each page.

Data analysis

The screengrabs were coded on Nvivo, a qualitative data analysis software. As Saldana explains, coding in qualitative analysis captures "summative, salient, essence-capturing or evocative attribute"[124] from textual and visual data. As Saldaña writes, coding is "not just labeling, it is *linking*" so that data informs and directs ideas that underpin the researcher's analysis. For this research, I conducted thematic coding and analysis because thematic analysis best enables the concepts and ideas emerging from the data to give meaning and identity to social phenomena in question.[125] For example, LiveSafe's framing of safety as a universal value is a theme around which the vendor's mission and app's features are organized. In order to arrive at thematic analysis, I conducted broadly three phases of coding during which I generated descriptive and thematic memos.

The walkthrough method's structure offered a methodological scaffold for iterative analysis. During the first phase of coding, I paid close attention to visual and textual data that captured each vendor's vision, operating model, and governance. This provided a comprehensive understanding of how the vendor articulates its purpose. After coding the corpus from each vendor's environment of expected use, I categorized preliminary codes in relation to vision, operating model, and governance, and generated memos pertaining to each.

In the second phase of coding, I conducted the technical walkthrough where I coded each product's user interface. Building on my analysis from the previous phase, my analytical focus during this phase was on identifying how the vendor's environment of expected use was encoded into the app's visual and technical apparatus. Moments that embodied or challenged the environment of expected use were especially important, as they represent how the app's actual apparatus reinforces or deviates from expressed vision. Following the completion of coding through the technical walkthrough, I categorized codes into themes and developed thematic memos.

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[124] Johnny Saldaña, *The Coding Manual for Qualitative Researchers*, 2nd ed. (Los Angeles: SAGE, 2013).
[125] Saldaña.

SUB-RQ#2: HOW DO REPORTING SYSTEMS MEDIATE CAMPUS SAFETY ADMINISTRATORS AND STUDENTS' EXPERIENCE OF CAMPUS SAFETY?

The final component of my research design involves in-depth interviews and workplace observations with research participants. Ethnographic methods like interviews and observations offer the researcher a glimpse into how social actors produce meaning through their interactions and daily practices.[126] The researcher is invited to observe how participants make sense of who they are in relation to their surroundings and how this interpretation shapes their interactions in their social worlds including with technology.[127]

Three participant groups constitute this study: (1) vendors; (2) campus administrators; and (3) students. This grouping reflects the different junctures of reporting technologies' business model and their lifecycle as it moves from ideation and design to adoption and implementation to use. These stages of reporting systems' lifecycle and participating groups are not fixed, as the social processes of design and use blur into each other with multiple stakeholders. The grouping, however, is useful for denoting the different parts of an app's lifecycle and how they foreground the interests and needs of different stakeholders. Below, I detail each participant category. Each category constitutes about a third of nearly 50 participants with whom I conducted semi-structured in-depth interviews. I employed snowball sampling strategy to recruit my study participant. Most of the interviews were conducted in-person and on-site; where necessary, interviews were conducted remotely. Recruitment continued until I reached data saturation, the point at which I was no longer identifying new themes in my data analysis.[128] The interviews and observations took place between the years 2017 and 2020.

Vendors

By *vendor*, I refer to all those involved with the design, production, sales, and implementation who are employed by LiveSafe and Callisto. I use descriptors like *product developers*, *designers*, and *company* interchangeably to refer to each firm. In general, both vendors include teams in finance, operation and management, product

[126] Marie Buscatto, "Doing Ethnography: Ways and Reasons," in *The SAGE Handbook of Qualitative Data Collection*, ed. Uwe Flick (1 Oliver's Yard, 55 City Road London EC1Y 1SP: SAGE Publications Ltd, 2018), 327–43, https://doi.org/10.4135/9781526416070.

[127] Albert Mills, Gabrielle Durepos, and Elden Wiebe, "Critical Sensemaking," in *Encyclopedia of Case Study Research* (2455 Teller Road, Thousand Oaks California 91320 United States: SAGE Publications, Inc., 2010), https://doi.org/10.4135/9781412957397.

[128] Steinar Kvale, *InterViews: An Introduction to Qualitative Research Interviewing* (Thousand Oaks, CA; London: Sage, 1996).

design and research, and sales and marketing and are governed by a combination of advisory boards and general counsel. When referring to specific responsibilities, I describe my participants with their title (i.e., UX Researcher) to provide a generalized description of their work without revealing their identities. I elaborate on participant anonymization in the ethics discussion later. Vendor employees compose about a third of my research participants. Not included in my research are the contractors and sub-contractors who conduct outsourced work, including prototyping and user tests, who are recruited and hired through on-demand platforms like Amazon Mechanical Turk or UserTesting.com. Their experiences with product development are not within the remit of this research, but the residual impacts of their work and participation are nonetheless present in product design and deployment.

The initial phase of recruitment began in 2016 when I started compiling a database of anti-rape technologies. I contacted vendor representatives through email and social media based on their contact information available through product websites and promotional materials. Once I selected my case studies, I contacted each vendor over email and employed snowball sampling strategy to interview employees in different teams. Workplace observations added a layer of richness and depth to my interviews. Following a recent expansion, LiveSafe acquired a new office space in 2017 for their headquarters in Arlington, Virginia, where I also conducted a series of interviews. Callisto's offices are dispersed across various co-working spaces in major metropolitan cities. I visited their New York office where operations and fundraising teams are located in 2017 and their Bay Area office where sales and implementation teams are located in 2018. The scattered nature of their offices and comfort with remote work arrangements, combined with the observations made during site visits added a layer of richness and depth to my analysis of how each vendor's organizational structure embodies and shapes their mission and ethos, business model, and approach to design.

Campus administrators

Campus administrators form the second participant category. These participants hail from various parts of higher education administration, including the department of campus safety, student affairs, Title IX, general counsel, finance, health, information technology (IT), and facilities, to list a few. In collaboration with vendor representatives, campus safety administrators are responsible for implementing and overseeing the reporting technologies' roll-out and use. Based on my conversations with this diverse

body of safety administrators, my ethnographic findings center on the experiences of *student life administrators* and *safety officers*. *Safety officers* or *safety authorities* refer to those in the department of safety, Clery Coordinator, and local law enforcement officers who interact most directly with LiveSafe. *Student life administrators* are largely responsible for implementing and publicizing Callisto and refer to those in Title IX; sexual violence prevention, response, and education; student resources (i.e., LGBTQ centers, women's centers); and residential life. I refer to my participants by a generalized description of their titles to denote their position in the wider ecosystem of campus safety. In some instances, I use different terms that highlight the different roles and responsibilities campus safety administrators take. For example, when emphasizing university administration's relationship with product vendors, I refer to the administration as *clients* or *partners*. In the same vein, I refer to them as *back-end users* when I emphasize their position as users in relation to the reporting systems.

My interviews with vendors and preliminary research informed the campuses I selected as recruitment sites. Finding campuses where both LiveSafe and Callisto are adopted significantly reduced potential campuses to study. Vendors' recommendations for successful implementation cases also advised my choices. Following initial rapport, I selected three differently sized campuses where LiveSafe and Callisto are used from which I recruited campus administrators responsible for adopting, rolling out, or publicizing either of the two systems. I recruited and interviewed various campus administrators until I reached data saturation. Where possible, I conducted interviews with campus administrators on site. Because of the sensitive and confidential nature of campus safety, I was not able to conduct a lengthy observation like I did with vendors. Instead, interviewing participants in their offices gave me an opportunity to observe their workplaces and walk around the campus, which offered me a richer understanding of how reporting systems operate on campus grounds.

Students

Students form reporting technologies' primary and intended end-user base. They are most likely to encounter digital reporting systems during new student orientation week or at campus safety-related events, including bystander training and induction to dorms. I use *students* and *users* interchangeably. Sometimes, I use the terms *victim-user* or *survivor-user* to capture moments where students' experiences with violence are central to how participants make sense of reporting technologies.

Students were the most difficult to access because many of them were completely unaware of either LiveSafe or Callisto. I anticipated some non-response, but the degree of student's general unfamiliarity about reporting systems suggested that I needed to change my recruitment strategy. The non-response, however, was an important data as it indicated the mismatch between campus administrators' safety imaginaries and students' lived experience of navigating campus safety ecosystem. I turned to snowball sampling by asking my participants in campus administration to refer me to students who may have insight into how reporting systems are used. As a result, the students I spoke to are those who work closely with campus safety-related issues as elected student government members, sexual violence prevention educators, or student activists. I conducted a combination of in-person, remote, and group interviews between 2017-2019.

Data analysis

In general, interviews and observations began after having completed either phase of the walkthrough method. This was an intentional choice in order to develop a clear sense of the vendor's worldview.

With ethnographic methods, data analysis begins immediately when interviews and observations begin. As Emerson writes,[129] fieldnotes are an important "interpretivist process" through which the ethnographer "translate[s] into text what she sees" (p.20). During my site visits, I kept a two-column fieldwork note where one column documented the observations and descriptions the researcher is making and the other documented the participant's analysis and worldviews. The two-column method of field notetaking is a strategy that helps the researcher "recognize her own preconceptions about [participants'] lives and activities."[130] Where possible, I completed each interview with a reflection note, either written in hand or voice recorded in my recording device. This was to capture my immediate reactions to each interview. These were especially helpful in interviews where participants did not give their consent for being recorded or shared confidential documents and information with me. For example, I was unable to take a photo of a campus safety department's dispatch room. Following our interview, I quickly sketched out what I remembered from my brief visit. Later, during the writing stage, these notes, recordings, and sketches were powerful sensory reminders and strengthened my writing.

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[129] Robert M. Emerson, *Writing Ethnographic Fieldnotes*, 2nd ed., Chicago Guides to Writing, Editing, and Publishing (Chicago; London: University of Chicago Press, 2011).

[130] Emerson.

The first phase of coding began concurrently with transcribing interview data. When interview participants gave their consent for interviews to be recorded, the voice recordings were used for transcription. During transcription, I consulted my fieldnotes to begin the first stage of coding. The early transcriptions tended to be verbatim, but they became summative as data saturation was reached. After transcriptions, I conducted the second phase of coding on Nvivo. At this stage, my codes were largely descriptive. To move towards analytical codes, I categorized codes and developed thematic memos around particular ethnographic vignettes. Drawing from these categories and thematic memos, I conducted the third phase of coding on Excel spreadsheet, focusing on the most salient concepts and themes.

Research ethics

Participant protection

In this section, I detail the choices I made as a researcher to protect the identity and safety of my research participants. This research received approval from the University of Oxford's Central University Research Ethics Committee (CUREC) on February 14, 2017 (approval reference: SSH OII C1A 17 021). Before each interview, my participants were given an informed consent form, a project description form, and a copy of the CUREC approval letter. I reviewed each item on the form at the start of each interview to acknowledge the risks, manage their expectation, and reiterate that their decision to withdraw or opt out would be respected.

INFORMED CONSENT

This research was carried out during the period of intense scrutiny on higher education's campus safety policies and practices in light of the election of Donald Trump, the #MeToo campaign, and Secretary of Education Betsy DeVos' proposed changes to Title IX. This political climate and increased public awareness about campus safety placed great risk on my participants, especially those in campus administration, to speak openly about their experience. This concern was voiced during some of my interviews; it was also the reason why some recruited participants ultimately decided against participation. Below, I review the specific practices I implemented to create the

conditions for my participants to make an informed decision about participating in my study.

It is the responsibility of the researcher to anticipate and candidly represent the risks involved in participation. For this research, these included: institutional retaliation, job loss, and revisiting triggering memories. Given the political climate, my participants in colleges and universities feared retaliation from their institutions. Participants representing product vendors also expressed concern about job loss. Informal conversations with the vendors' legal teams also showed that the company had concerns about exposing proprietary information. I assured my participants that proprietary information was not within the purview of this research.

I also anticipated personal stories about campus safety to surface through the interviews, which raised the possibility of retraumatizing some participants. Both of the vendors I study had a founding story anchored in the founder's own experience of campus violence. In addition, my previous experience in anti-violence campaigns informed my assumption that my participants' understanding of campus safety may be affected by their personal experiences. Before and at the start of each interview, I acknowledged the sensitive nature of my research topic and flagged the possibility that sensitive discussions about safety and violence may arise. I emphasized that my participants were under no obligation to disclose details they choose not to, and that they were free to withdraw from the study at any point. I also offered to share my transcript should my participants want to clarify details or withdraw afterwards. When preparing interview questions, I developed and practiced a script for how to respond should my participants react to sensitive information. I would acknowledge what is happening and ask my participant if they would like to pause or continue. Finally, I prepared a list of counseling resources nearby to the field site, should there be a need to direct my participants to them. The need never arose, but these three practices primed me to be conscious of my participants' experiences and clarify my role as a researcher.

Beyond the risks, it was also important to manage my participants' expectation. During the preliminary phase, I soon learned that vendors, campus administrators, and students brought their own expectations of what interview participation with an Oxford student could entail. Some vendors, for example, expected that an interview would lead to partnership with the university, some campus administrators were cautious that I would bring negative attention to the school, and some students hoped that I would bring public attention to their Title IX claims. Encountering these expectations required me to

acknowledge that I was being perceived in particular ways: as a university representative to the vendors and as a journalist to students and campus administrators. To mitigate this perception, I communicated the aims of this research and maintained professionalism in building rapport with my participants. Before each interview, I reviewed the informed consent form with my participants and stated my objective in conducting academic research.

ANONYMITY, DE-IDENTIFICATION & FABRICATION

The risks outlined above speak to the need for participant protection in how they are represented in my study. To ensure their safety, I practiced de-identification, anonymization, and fabrication in my data collection, analysis, and writing.

Removing identifiable information about participants is an exercise that reminds the researcher that identities and information are always contextually embedded.[131] Anonymization or pseudonymization are partial practices of de-identification. When accompanied by seemingly innocuous details about their location and social position, including pronouns, how they dress, and occupation, re-identification is much easier. Given the risks outlined above, it was integral that I protect the privacy of my participants to the best of my ability. To do this, I introduced two levels of de-identification during my data collection and analysis phases. Once I scheduled an interview with my participants, I did not document their names in my notes, memos, and transcripts. Instead, I used their position in relation to my project (vendor, campus administrator, or student) to refer to them. This first step of de-identification ensured removal of identifiable information from the moment of data collection.

In addition, I decided to remove the names of campuses. Instead, they only appear through generic descriptors (i.e., "a small liberal arts college"). My preliminary findings revealed that campus administrators were especially concerned about institutional retaliation. To account for this, I decided to remove the names of the campuses I visited. Where relevant, I describe them by the type and size of the institution.

During data analysis and writing of this dissertation, I continued to refer to my participants as they appear in relation to this research. For example, what is most salient about my participants is their social position as a product researcher or a residential advisor. When I refer to my participants in this study, I refer to them in their generalized title.

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[131] Helen Nissenbaum, "Privacy as Contextual Integrity," *Washington Law Review* 79 (2004): 119–58.

When participant quotes are shared, I practice what qualitative researcher Annette Markham terms "fabrication." Fabrication in data analysis refers to the method of "combining, molding, and arranging elements" of qualitative data "into a whole" so as to draw attention to "what is salient, meaningful, or true"[132] about the data. This practice fulfills two objectives. First, it enables the researcher to tell composite accounts to the social phenomenon being observed and analyzed. Rather than being antithetical to truth-telling, the practice, especially in the context of interpretivist inquiry, allows the researcher to direct her analytical attention to what is salient about ethnographic data. In other words, it allows the researcher to tell a story as a trusted analyst with "careful attention to the context, the questions, and the purpose"[133] of the inquiry. Secondly, fabrication as practice also contributes to participant protection. By disaggregating the speaker's identity from the testimonial, it allows the researcher to "embed ethics inductively into research practice"[134] by directing the reader's attention to what is most relevant and meaningful about the ethnographic account and removing individual identifiability.

CHAPTERS AHEAD

The outline of this dissertation is as follows. Chapter 2 offers a cultural, sociopolitical, and legal backdrop for understanding the sociotechnical shaping of campus safety as a public problem. In particular, I focus on the cultural discourses surrounding the Clery Act and Title IX to situate how campus safety is imagined and governed. I argue that the dominant narratives about campus sexual assault and anxiety about their credibility, expressed through quantitative knowledge, co-create what I term campus rape imaginaries. Reporting technologies thus emerge as an apt and desirable solution that affords certainty and credibility to campus safety.

The next two chapters each take a deep dive into the inner workings of reporting systems LiveSafe and Callisto by situating them in their respective design process and practices. In Chapter 3, I make the case that the logic of intuition shapes LiveSafe design team's understanding of safety. The app's objective is to facilitate an intuitive reporting experience designed to seamlessly move the user from intuition to the act of reporting. I highlight how the vendor's business relationship with higher education clients—

[132] Annette Markham, "Fabrication as Ethical Practice: Qualitative Inquiry in Ambiguous Internet Contexts," *Information, Communication & Society* 15, no. 3 (April 2012): 334–53, https://doi.org/10.1080/1369118X.2011.641993.

[133] Markham, 342.

[134] Markham, 341.

specifically, campus safety officers—shape the app's operating model where the officers' interests are prioritized; this, in turn, informs the design process through which intuition stabilizes as the dominant logic of product design and lens for understanding campus safety. Chapter 4 focuses on Callisto, which aligns itself explicitly with the interests of students, especially survivors, and Title IX Coordinators. I demonstrate how this positioning, informed by the vendor's origin story of the founder's own experience of campus sexual assault, articulates campus safety as a problem of credibility. My walkthrough of the app's reporting interface illustrates how the vendor appeals to "data imaginaries"[135] to afford credibility to reports generated by Callisto.

In the discussion chapter that follows, I situate both systems in their use-environments. Drawing from my interviews and observations of campus administrators and students in three differently-sized campuses in California, I demonstrate how sociotechnical imaginaries of campus safety of campus administrators, rather than students, mediate how reporting systems are seen and experienced as an apt solution. I use the concept of "imagined affordance"[136] to capture how safety officers and Title IX Coordinators as socially situated actors imagine their respective reporting technologies as apt solutions. Safety officers' articulation of campus safety as intelligence gathering creates the conditions that mediate how LiveSafe is imagined to afford certainty and simplicity to their safety work. For Title IX Coordinators concerned with growing student distrust towards "the administration," they imagine Callisto as a bridge that will rectify students' distrust. In both cases, I contextualize students' unfamiliarity with both reporting systems as indicative of how reporting technologies primarily serve campus administrators' interests and thus call into question who and what is being served by reporting technologies.

The concluding chapter outlines this dissertation's contribution to scholarship in HCI, STS, and gender and sexuality studies. It concludes by making recommendations about survivor-centered design for developers and safety policies and practices for campus administrators.

2. Digitizing campus safety

[135] Beer, "The Data Analytics Industry and the Promises of Real-Time Knowing."
[136] Nagy and Neff, "Imagined Affordance."

Following months of student activism in campuses all across the country, from community colleges and state schools to liberal arts colleges and the Ivies,[137] the Obama Administration launched the White House Task Force to Protect Students from Sexual Assault.[138] The Task Force aimed to devise best practices and facilitate better interagency communication to ensure transparency, enforcement, and accountability in preventing and responding to sexual violence on campus. One of these efforts was the Data Jam, which invited over 60 technologists, students and survivors, and policy experts to integrate data-driven technologies for "more effective and transparent responses to incidents."[139] The Data Jam identified the reporting process as the main site where data-driven technologies' capacity to collect accurate information would demonstrate the most impact on transparent Title IX compliance.

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[137] On student campaigns from community colleges, see Katy Murphy, "San Jose Colleges Under Federal Investigation for Campus Sexual Assault Response," *The Mercury News*, December 19, 2014, https://www.mercurynews.com/2014/12/19/san-jose-colleges-under-federal-investigation-for-campus-sexual-assault-response/; and "Campus Sexual Assault Under Investigation at Southwest Tennessee Community College," *The Chronicle of Higher Education*, (n.d.), accessed February 17, 2019, http://projects.chronicle.com/titleix/campus/Southwest Tennessee Community College.

On state schools, see "Alleged Assault Victim Sues UNC for Expulsion Threat," *USA Today*, March 23, 2013, accessed February 17, 2019, https://eu.usatoday.com/story/news/nation/2013/03/25/victim-sues-unc-expulsion/2018261/; and Tyler Kingkade, "Complaint Alleges UC-Berkeley Allowed Serial Rapists To Stay On Campus," HuffPost UK, February 26, 2014, https://www.huffingtonpost.com/2014/02/26/uc-berkeley-rape-students-complaint_n_4855816.html.

On liberal arts colleges, see Angie Epifano, "An Account of Sexual Assault at Amherst College," *The Amherst Student*, October 17, 2012, https://amherststudent.amherst.edu/article/2012/10/17/account-sexual-assault-amherst-college.html; and Yenli Wong, "But I Was Lucky: It Wasn't Rape," *Huffington Post,* May 15, 2015, https://www.huffingtonpost.com/yenli-wong-/but-i-was-lucky-it-wasnt-_b_7276252.html.

On Ivy League schools, see Kingkade, "1-Day Suspension For Yale Sex Assault Attempt," *Huffington Post*, August 23, 2013, https://www.huffingtonpost.com/2013/08/23/yale-sexual-assault-punishment_n_3786885.html; Katherine Lamb, "U. Mishandled Sexual Assault Case, Victim Says," *Brown Daily Herald*, April 23, 2014, http://www.browndailyherald.com/2014/04/23/u-mishandled-sexual-assault-case-victim-says/; Kingkade, "Harvard College Faces Probe for Alleged Mishandling for Sexual Assault Cases," *Huffington Post,* April 28, 2014, https://www.huffingtonpost.co.uk/entry/harvard-investigation-sexual-assault_n_5225901.

[138] The White House Office of the Press Secretary, "Memorandum: Establishing a White House Task Force to Protect Students from Sexual Assault," January 22, 2014, https://obamawhitehouse.archives.gov/the-press-office/2014/01/22/memorandum-establishing-white-house-task-force-protect-students-sexual-a.

[139] Lynn Rosenthal and Vivian Graubard, "Protecting Students from Sexual Assault: Building Tools to Keep Students Safe and Informed," April 18, 2014, https://obamawhitehouse.archives.gov/blog/2014/04/18/protecting-students-sexual-assault-building-tools-keep-students-safe-and-informed-0/

At first, the Data Jam seems like an outlier. In comparison to traditional approaches to combatting sexual violence, such as direct service for victims from shelters and hotlines, policy reform, and prevention education, the introduction of data and technology appeared out of place. Efforts like the Data Jam, however, are not to be discounted as a passing fad. From date rape drug-detecting nail polish[140] and hotspot mapping of catcalls[141] to wearable rape whistles[142] and blockchain-based consent app,[143] there continues to be an effort to introduce data and technology to the field of sexual violence prevention and response. The Data Jam's call for efficiency and transparency suggests that the problem of campus sexual violence is perceived as lacking them, and this perception, when placed in the discursive context of campus sexual violence, unveils a troubling and telling history of rape.

How did technologies emerge as an apt and desirable solution to the problem of campus safety? To answer this question, it is first integral to understand the sociotechnical construction of the problem of campus safety. In this chapter, I situate the digitization of incident reporting in the cultural, political, and legal history campus sexual assault. I introduce what I call the "campus rape imaginary"—ways of thinking about what campus rape is and isn't, and what it ought to be—to explain how campus safety is articulated as a gendered problem, and how this gendering shapes the vocabulary of credibility through which solutions are imagined and expressed.

To establish the sociotechnical construction of campus safety, I begin this chapter by briefly recounting the political and legal history of rape resistance in the US from colonial conception of theft to second-wave call for bodily autonomy. Far from fixed, the changing definitions of rape reflect the values, assumptions, and anxieties of a particular time. I then follow how the university campus became the main site of young women's activism against gender-based violence. Entering the campus environment, I review how federal regulations and campus safety, mainly Title IX and the Clery Act, create a complicated ecosystem of sexual violence prevention and response. Finally, I return to the digital turn in sexual violence reporting to show how the campus rape imaginary informs ongoing efforts to combat the "epidemic" of sexual violence through the power of data-driven technology.

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[140] See SipChip, https://www.undercovercolors.com/.

[141] Jaleesa Jones, "4 Free Apps to Help College Women Feel Safer," *USA Today*, June 1, 2014, https://eu.usatoday.com/story/college/2014/06/01/4-free-apps-to-help-college-women-feel-safer/37391545/.

[142] Nadja Sayej, "Personal Safety Wearables: A Helping Hand in Risky Situations," *Wareable*, March 26, 2018, https://www.wareable.com/wearable-tech/best-personal-safety-wearables.

[143] See Legal Fling, https://legalfling.io/.

The social imaginary of rape: From theft to stranger danger

As the Data Jam, the Task Force, and Emma Sulkowicz's mattress performance unfolded, campus sexual violence has been framed as an "epidemic." The White House Commission condemned the unprecedented prevalence of sexual violence threatening young women's bright futures ahead, as news of latest Title IX complaints continued. Concerned parents expressed horror as they prepared to send their young daughters to college. It seemed an epidemic was at loose.

When situated in the broader history of feminist struggle against sexual violence, today's focus on campus sexual assault echoes the challenges faced by anti-rape activists in the past. In this section, I briefly trace the legal and political history of rape and resistance to emphasize the recurring disconnect between dominant social imagination of "real" rape and lived experienced of sexual violence. From this disconnect surfaces what I term the social imaginary of rape—ways of thinking about what rape is, what it ought to be, and what it is not that shapes everyday policies and practices.

Rape as theft

Today, there is no national standard or federal law defining rape.[144] Policies at the individual state and institutional level vary widely, and different agencies employ different terminologies: law enforcement, for example, categorizes sexual crimes into "completed assault" and "attempted assault," while human resources classify a wide range of sexual offenses under "sexual misconduct." The variability in naming and categorizing sexual crimes over time and across different agencies embodies the fraught history of naming violence.

Rape stems from Latin words *raptus* or *rapere*, meaning a seizure or a snatching away. Its early use in British common law applied to "nonsexual crime of violent theft," and acquired a sexual interpretation by the fifteenth century to refer to "the theft of a

[144] Currently, in the US, definitions and terminologies of rape differ by jurisdiction. As of January 2017, the Federal Bureau of Investigation has officially retired the historical definition of rape as 'the carnal knowledge of a female forcibly and against her will.' The new definition, effective since January 2013, classifies rape as "penetration, no matter how slight, of the vagina or anus with any body part or object or oral penetration by a sex organ of another person, without the consent of the victim." This is the definition used in national crime statistics through the FBI's Uniform Crime Reporting program. For a detailed account of the change in definition, see "Recent Program Updates" here: https://ucr.fbi.gov/.

woman's virtue, either a daughter's virginity or a married woman's honor."[145] This property framing of feminine virtue would inform antirape movements that followed, and the fixation on the injured woman's integrity continues to dominate public discourse on rape. Under the principle of coverture, colonial America did not acknowledge women's citizenship, as women belonged to the male head of the household. Only husbands and fathers could press charges as the injured party against the perpetrator, if they could quantify resultant harm in economic terms. Juries and judges drew from the loss in work hours or productivity to measure damages inflicted upon the head of the household by having a woman hurt, or worse, impregnated, by a sexual assault.[146] For enslaved women, the possibility of pressing charges through male heads was not an option.[147] Regarded as objects under complete possession of masters, enslaved Black women's experience of violence was illegible to the state, as things cannot be violated.[148]

Early nineteenth century witnessed consent and resistance emerge as pivotal factors in the criminalization of rape. The politics of anti-seduction laws present an illuminating study of how consent and resistance shaped court procedures, reified gender norms, and placed antirape mobilization in a legalistic trajectory. Civil seduction suits developed at a time of significant social transformations: the industrialization and expansion of cities reorganized leisure and labor opportunities, especially for young women. As they migrated to the city, gendered expectations of chastity and respectability heightened, and they received increased scrutiny to protect themselves and uphold feminine virtues against the city's many seductions. Civil seduction statutes were some of the few "legal tool[s]"[149] through which aggrieved women (always white) could seek legal recourse.[150] By appealing to chastity and respectability as inherently feminine qualities, women's moral reform associations utilized civil seduction statues to shift

[145] Estelle B. Freedman, *Redefining Rape* (Harvard University Press, 2013): 4.

[146] Ibid.

[147] In fact, several states in early nineteenth century added racial specificity to their rape statutes.

[148] The legal failure to recognize violence against enslaved women should not suggest that there was an absence of recognition altogether. In tracing the artifactual history of enslaved women's resistance against sexual violence, performance studies scholar Robin Bernstein points to the topsy-turvy doll as an object that embodies Black women's sexual trauma. A topsy-turvy doll features a black girl on one end and a white girl on the other who are conjoined at the crotch. While the origin of this strange doll in an era of slavery remains a mystery, Bernstein attributes the absence of the crotch and the paralleling of the two girls as an artifactual manifestation of enslaved women's racialized and gendered position. They were sexually assaulted and impregnated against their will by their white masters and were expected to raise the white master's children as their own children were raised as laborers. See Robin Bernstein, *Racial Innocence: Performing American Childhood from Slavery to Civil Rights* (New York: NYU Press, 2011).

[149] Freedman, p.43

[150] It was not until the 1840s that women could bring charges forward. Until then, under the principle of coverture, states only recognized the father or husband of the woman as the aggrieved party. By the 1890s, most states recognized white women as the injured party.

public discourse and direct responsibility to men.[151] Reform associations argued that it was the licentious men with their luring words who "ruined"[152] otherwise respectable women; a respectable (white) woman would never knowingly consent to promiscuous men's advances.[153] Under the principle of coverture, however, women did not have the ability to consent.

Even though anti-seduction laws equipped women with legal protection, the appeal to feminine virtues necessary for successful suits reified the dominant cultural imagination of rape as behavioral indiscretion of men who failed to control their carnal urges and women who welcome such advances. Framed in the language of seduction, the assailants were presented as men who were helplessly consumed by desire. While men's behavior was interpreted as inevitable, women's behavior was subject to heavy scrutiny. According to the *Woman's Standard*, the Iowa Supreme Court ruled in 1889 that anti-seduction protection did not apply to those women who remained in public at night. The court concluded, "if you can catch a girl upon the streets after a certain hour at night you can consider her fair prey,"[154] suggesting that a woman's unvirtuous behavior could be interpreted as affirmative consent. These notions continue to shape contemporary discourse on sexual violence where the victim's clothing, sexual history, and location of incident are dissected as evidence of her willing participation in her assault.

The moral reformers could not have anticipated future anti-rape movements, but their appeal to the law would echo through the campaigns that followed. Reform groups' appeal to chastity temporarily overrode the issue of consent, but as more women pursued legal recourse, establishing women's ability to consent surfaced as a major challenge. For the abolitionists and suffragettes, the inability for women and enslaved people to consent presented a flagrant hypocrisy: their disenfranchisement was in direct violation

[151] One common practice was publishing a list of men accused of assault or known for being licentious. The practice of writing and publicly circulating names of abusive men resonates to this day and continues to express victims' desperation and frustration with the remedies available to them. 'Rape walls' have been a part of campus life, appearing on the walls of college bathrooms and library desks. Most recently, writer Moira Donegan's anonymous 'Shitty Media Men List' sparked much controversy as a digital manifestation of such lists. On 'rape walls,' see William Celis, "Date Rape And a List At Brown," *The New York Times*, November 18, 1990, http://www.nytimes.com/1990/11/18/us/date-rape-and-a-list-at-brown.html; George Joseph and Jon Swaine, "Behind Columbia's 'Rape Lists': 'When Existing Systems Fail, What Then?,'" *The Guardian*, June 26, 2014, sec. Education, https://www.theguardian.com/education/2014/jun/26/columbia-university-students-rape-list-mishandle-sexual-assault. On 'Media Men List,' see Moira Donegan, "I Started the Media Men List," *The Cut*, January 10, 2018, https://www.thecut.com/2018/01/moira-donegan-i-started-the-media-men-list.html.

[152] Freedman, 38.

[153] The notion of respectability was almost always racialized as white. Black women in particular were viewed as animalistic and hypersexual, always inviting sexual advances. On top of their status as enslaved objects, this sexualization of black feminine bodies further disenfranchised them from pursuing justice against sexual violence.

[154] Editorial Notes, *Woman's Standards* (July 1889): 4, as cited in Freedman, 49.

of the principle of citizenship and consent that had been so valued in the creation of the American state.[155] In the late nineteenth century, the abolitionists and suffragettes platformed citizenship as the essential channel through which women and enslaved people could assert their humanity and receive protection from violence.[156] Organizations, like the American Woman Suffrage Association (AWSA), focused explicitly on sexual assault and domestic violence as motivations for suffrage. With the adoption of the Fourteenth and Nineteenth Amendment that extended citizenship beyond whiteness and maleness, the politics of rape, too, expanded.

A case for bodily autonomy

First-wave feminist movement's focus on suffrage laid the groundwork for second-wave feminist movement's broader analysis of women's oppression. Following the Second World War's disruption of traditional gender roles, post-war America witnessed a renewed sense of domesticity: the nuclear family structures and increasing suburbanization maintained conservative gender norms. In response, the radical feminist movement of the sixties and the sexual revolution of the seventies generated a political climate that challenged the taken-for-granted nature of women's status as secondary citizens.[157] Feminist mobilization took place in conjunction with other social

[155] This is famously and powerfully reflected in abolitionist Sojourner Truth's "Ain't I a Woman?" speech. Interestingly, the Sojourner Truth Project remarks that this is an inaccurate representation made by a white woman named Frances Dana Barker Gage, who revised Truth's original language and represented it in "southern black accent." The Project identifies an 1851 speech titled "On Woman's Rights" as the most accurate reflection of Truth's original writing. See https://www.thesojournertruthproject.com/ for different versions.

[156] While both abolitionists and suffragettes were united in their pursuit of citizenship, there was great schism between and within them. Elizabeth Cady Stanton, for example, famously opposed abolition on grounds that an expanded citizenship would jeopardize the safety of educated and refined white women. She and Susan B. Anthony would later campaign under the banner, 'Woman first and negro last.' Meanwhile, within the abolitionist movement, black women were discouraged from seeking suffrage. *The Colored American,* for example, advised black women 'as wives, as mothers, and as daughters' to stay at home as they were 'too inert nor sufficiently self-sacrificing.' This notion of 'choosing' between race and gender repeats throughout America's civil rights history and will be explored again in the next section. In addition to Freedman, see Ta-Nehisi Coates, "The Great Schism," *The Atlantic*, October 18, 2011, https://www.theatlantic.com/national/archive/2011/10/the-great-schism/246640/; and Caroline Light, *Stand Your Ground: America's Love Affair with Lethal Self-Defense* (Beacon Press, 2017).

[157] The history of feminist movements in the US is often framed as waves. The first-wave is attributed to early twentieth century during which suffragettes and abolitionists campaigned for citizenship. The second-wave, roughly in the period of the fifties to eighties coincided with a range of liberation movements to articulate and criticize patriarchal power structures. The wave metaphor originated from a *New York Times* article in 1968 that described the zeitgeist of women's movement as 'the second feminist wave' (see https://www.nytimes.com/1968/03/10/archives/the-second-feminist-wave.html). Critical feminist historians have challenged this wave framing, because it misrepresents the nature of political organizing, resistance, and social progress. Firstly, in highlighting select decades as waves, the wave framing overlooks how feminist organizing has always taken place—before, during, and after the waves. Moreover, common classification of the first wave as liberal and the second as radical is a reductive representation of the conditions under which agendas and actions for women's liberation were articulated. See Ruth Rosen, *The World Split Open: How the Modern Women's Movement Changed America* (New York: Penguin Books, 2006); Linda Nicholson, "Feminism in 'Waves': Useful Metaphor or Not?," *New Politics* (2010), https://newpol.org/issue_post/feminism-waves-useful-metaphor-or-not/; and Constance Grady, "The Waves of Feminism, and Why People Keep Fighting Over Them, Explained," *Vox*, July 20, 2018,

movements, such as the New Left and anti-Vietnam War demonstrations the Civil Rights and Black Power, and gay liberation.[158]

As the now-famous slogan of the movement, "the personal is political,"[159] reflects, feminist mobilization politicized individual women's everyday experience of violence as an affront of women's right to bodily autonomy, facilitated by gendered power structure. Consciousness-raising groups created an opportunity for women to share their experiences and articulate how their individual accounts are inextricably linked to structures of gendered oppression.[160] Women-centered enterprises and services, such as bookstores and rape crisis centers, provided a space for these groups, community formation, and collective action. It is in this environment that feminists politicized rape as an exercise in power rather than an inevitable consequence of carnal urges.

Early rape myths reverberated in public imagination of the victim, the rapist, and the nature of rape in mid-twentieth century. The notion that women's resistance is actually an invitation for sexual advances confined victims to an inexorable bind in which their words and behaviors of resistance could not be interpreted as they are. Especially for women of color, the racialized imagination of feminine duplicity assumed them to be hypersexual—always available and always inviting. Another dominant myth maintained that rape was an inevitable consequence of men's carnal urges. In her landmark legal, cultural, and historical analysis of the politics of rape, Susan Brownmiller explained, "Rape is something awful that happens to females: it is the dark at the top of the stairs, the undefinable abyss that is just around the corner, and unless we watch our step it might become our destiny."[161] This supposed inevitability of rape promoted a narrative of stranger danger in which the onus of prevention rests on women: if rape is an inevitability, women should accept their vulnerability and plan accordingly by dressing moderately, not behaving promiscuously, and not walking alone at night to ensure her

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https://www.vox.com/2018/3/20/16955588/feminism-waves-explained-first-second-third-fourth. Recognizing the wave metaphor's reductive nature, I survey the periods of first and second waves because they mark notable moments in legal and cultural rape resistance.

[158] On Black Power, see Malcolm X, *The Autobiography of Malcolm X* (New York: Grove Press, 1965); and Elaine Brown, *A Taste of Power: A Black Woman's Story* (New York: Anchor,1994). On gay liberation, see Karla Jay, Allen Young, and John D'Emilio, *Out of the Closets: Voices of Gay Liberation* (London: Gay Men's Press, 1992); and Michael Bronski, *A Queer History of the United States: Revisioning American History* (Boston: Beacon Press, 2011).

[159] Although this slogan has become a famous legacy of the second wave, its source remains uncertain. Feminist thinkers of the time who have been given credit for the phrase, such as Carol Hanisch and Shulamith Firestone, have disavowed the attribution.

[160] Catharine MacKinnon, *Sexual Harassment of Working Women: A Case of Sex Discrimination* (New Haven: Yale University Press, 1979).

[161] Susan Brownmiller, *Against Our Will: Men, Women, and Rape* (London: Secker & Warburg, 1975), 309.

protection. If rape is such a widespread phenomenon that women should learn to accept this reality, it would follow that there are many rapists. Yet, the stranger danger narrative identified the rapist as pathological individuals unable to contain their sexual urges who target "easy" women. Presenting the rapist as an external evil reified the onus of protection on women.

The stranger danger myth solidified a collective imagination of what "real" rape is and who "real" victims are. By externalizing the rapist as a violent stranger lurking in alleyways, the stranger danger narrative shaped an enduring cultural imagination that rejected sexual violence as a facet of everyday life. This is what I term the social imaginary of rape—ways of thinking about what rape is and what it should be, and how these culturally dominant scripts inform everyday practices and policies around sexual violence. The concept draws from moral philosopher Charles Taylor's theory of the social imaginary as a shared framework through which ordinary people make sense of the world. The social imaginary's shared recognizability, visual form, and legitimacy render it a powerful form of social control. Imaginaries gain their purchase because they are carried in visual form; "unstructured and inarticulate,"[162] these images acquire their potency and endurance through their expansiveness, applicability, and flexibility. They operate as a reference point that offer individuals "a sense of how things usually go…how they ought to go."[163] Social imaginaries, then, are not only descriptive, but prescriptive. Ideas about rape, narrativized in stranger danger myths and visualized as contemptuous evil, thus shape collective imaginations that facilitate how individuals make sense of sexual violence. Eve thought sexual violence forms a facet of everyday life, rape imaginaries characterize it as unspeakable, unfathomable, and, crucially, unlikely.

As the famous Mary Koss study of rape on college campuses would reveal a decade later, the rape imaginary had material consequences.[164] Victims who did not see their assaults as in line with rape imaginaries did not seek help or were turned away from safety officials, because their experiences were measured against the rape imaginary. In this regard, the rape imaginary operated as a metric of credibility: experiences that aligned with the imaginary were perceived as more likely and thus credible in the eyes

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[162] Ibid. *A Secular Age* (Cambridge, MA: Harvard University Press, 2007), 173.

[163] Ibid. 172.

[164] Mary Koss, Christine Gidycz, and Nadine Wisniewski, "The Scope of Rape: Incidence and Prevalence of Sexual Aggression and Victimization in a National Sample of Higher Education Students," *Journal of Consulting and Clinical Psychology* 55, no. 2 (1987).

of safety officials. This, in turn, reified the imaginary as only incidents that met the threshold of "real" rape made through reporting.[165]

One of the ways in which anti-rape activists attempted to counter rape imaginaries was by quantifying sexual violence. The objective was to instrumentalize prevalence statistics to demonstrate its everyday occurrence. In her polemical speech, "I Want a 24-hour Truce During Which There is No Rape," radical feminist Andrea Dworkin explains, "We use statistics not to try to quantify the injuries, but to convince the world that those injuries even exist. Those statistics are not abstractions…It is easy to say, 'Ah, the statistics, somebody writes them up one way and somebody writes them up another way.' That's true. But I hear about the rapes one by one by one by one by one, which is also how they happen."[166] To Dworkin, the statistics are a feeble attempt to make sense of something that is violently quotidian. The numbers are insufficient; no degree of precision can measure the impact of violence.[167] At their best, they try to contour the scope of violence that has long been denied, dismissed, and normalized. She continues, "Those statistics are not abstract to me. Every three minutes a woman is being raped. Every eighteen seconds a woman is being beaten. There is nothing abstract about it. It is happening right now as I am speaking."

In quantifying rape's prevalence, second-wave feminist activists aimed to articulate rape as a structural form of violence against women. No number could substantially capture its prevalence and impact, but it did speak to the systematic ways in which women's access to and control over their own bodies was denied and violated. Rather than an isolated and inevitable accident, sexual violence was a structural attack on women's bodily autonomy. The second-wave feminist activism and scholarship laid major groundwork for naming and deconstructing the rape imaginary's damaging persistence and circulation. Reproduced again and again are gendered assumptions about feminine duplicity. In briefly tracing the history of rape, from theft to a case for bodily autonomy, I have attempted to demonstrate how changing definitions of rape reflect the values, anxieties, and assumptions of their time. With this broader legal and political history of rape and resistance, I now enter contemporary campus context.

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[165] This notion of metrics and, by extension, method as means through which a particular interpretation of the social and moral order of the world is reinforced will be discussed in Chapter 1. It draws heavily from critical data studies and feminist STS literature.

[166] Andrea Dworkin, "I Want a Twenty-Four-Hour Truce During Which There Is No Rape," No Status Quo (1984), http://www.nostatusquo.com/ACLU/dworkin/WarZoneChaptIIIE.html. Dworkin's attitude towards statistics expresses and prefigures the politics of credibility that will be discussed in Chapters 3 and 4.

[167] Chapters 3 and 4 will engage with this idea of measuring and capturing violence, as digital reporting softwares quantify, datafy, and visualize experiences of sexual violence on campus.

Sexual violence in higher education

The second-wave feminist movement waned, but the campus remained an active site of popular discourse on rape. Consciousness-raising circles and Take Back the Night marches frequented university campuses as young women and men, inspired by growing coursework on Gender/Women's Studies, directed their analytical gaze internally.[168] In late 80s, a large-scale survey on higher education by Mary Koss et al. was the first to quantify sexual assault on campus as "1 in 4," thereby locating the campus as a high-risk site of violence for young women and prefiguring the concept of "campus sexual assault."[169] Two decades later, an updated figure of "1 in 5" would circulate popular discourse as a reminder of the campus' duality as a simultaneously safe yet dangerous site.[170]

The idea of that there is a scenario of sexual violence specific to higher education has been especially pronounced in contemporary discourse on Title IX, a federal law prohibiting sex-based discrimination, including sexual harassment, in higher education. A wave of Title IX complaints filed by students against their colleges and universities has placed federal laws like Title IX at the headlines. Supporters have celebrated the momentum around campus sexual violence as the latest wave of the feminist movement. Survivors and advocates have embraced Title IX as a powerful legal tool[171] through which claimants can pursue civil recourse, schools' practices can be reviewed, and federal agencies can enforce gender equity in higher education. Critics, on the other hand, have condemned the movement as a "witch hunt"[172]: both conservatives and self-identified feminists contest contemporary discourse's broadening definition of sexual

[168] Joan W. Scott, "Gender: A Useful Category of Historical Analysis," *The American Historical Review* 91, no. 5 (1986): 1053–1075; Robyn Wiegman, *Object Lessons* (Durham: Duke University Press, 2012).

[169] Koss et al. See also Alexandra Rutherford and Mary Koss, "What Surveys Dating Back Decades Reveal About Date Rape," *The Atlantic*, September 26, 2018, https://www.theatlantic.com/ideas/archive/2018/09/what-surveys-dating-back-decades-reveal-about-date-rape/571330/.

[170] The "1 in 5" statistic is attributed to a 2007 study from the National Institute of Justice. See Christopher Krebs et al., "Campus Sexual Assault (CSA) Study, Final Report," National Criminal Justice Reference Service, October 2007, https://www.ncjrs.gov/App/Publications/abstract.aspx?ID=243011. The figure was used heavily in the Obama Administration's It's On Us campaign. See The White House, "Remarks by the President and Vice President at an Event for the Council on Women and Girls," The White House, January 22, 2014, https://obamawhitehouse.archives.gov/the-press-office/2014/01/22/remarks-president-and-vice-president-event-council-women-and-girls.

[171] Nora Caplan-Bricker, "How Title IX Became Our Best Tool Against Sexual Harassment," *The New Republic*, June 22, 2012, https://newrepublic.com/article/104237/how-title-ix-became-our-best-tool-against-sexual-harassment.

[172] Laura Kipnis, "Eyewitness to a Title IX Witch Trial," *The Chronicle of Higher Education*, April 2, 2017, https://www.chronicle.com/article/Eyewitness-to-a-Title-IX-Witch/239634.

assault, question whether higher education should even be handling incidents of sexual violence, and lament the culture of coddling students with trigger warnings.[173] This divide captures the duality of the campus: "The campus is a pure space, and so each instance of sexual violence appears as an absolute outrage, a betrayal and an affirmation of rape's ubiquity. The campus promises safety, security. To see that promise through, it must police and expel. It must establish a procedure and manage its risk."[174]

As the topic of campus sexual violence as emerged as an enterprise of its own, it has been framed as an "epidemic," a toxic new phenomenon seizing college campuses across the US. However, when situated in the broader history of rape recounted earlier in this chapter, the discourse on campus sexual assault appears familiar. I expand upon my earlier application of the social imaginary to describe a set of shared images about "real" rape on campus as "the campus rape imaginary." From news media coverage of student activists to popular renderings in *Law & Order: SVU* and *The Hunting Ground*, campus rape is almost always singular, heterosexual, white, physical, inebriated, and on campus grounds.[175] Later in this chapter, I delve into Title IX ecosystem to show how the campus rape imaginary informs its bureaucratic and procedural structure.

Sexual harassment as a civil rights violation

Today, Title IX is synonymous with campus sexual violence, but this equation is an outcome of nearly three decades of young women's activism to recognize sexual harassment and assault as forms of sexual discrimination. In fact, nowhere in the actual language of Title IX does it explicitly mention sexual violence. Title IX of the 1972 Education Amendment states: "no person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance."[176] Retracing the expanding interpretation of Title IX reflects how early antirape advocates utilized legal tools to demand state recognition of violence against

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[173] The debate around 'trigger warnings,' while not in the direct scope of this thesis, presents a telling case study of how students are framed as weepy and vulnerable. See Sara Ahmed, "Against Students," *The New Inquiry*, June 29, 2015, https://thenewinquiry.com/against-students/; and Sarah Orem and Neil Simpkins, "Weepy Rhetoric, Trigger Warnings, and the Work of Making Mental Illness Visible in the Writing Classroom," *Enculturation*, December 16, 2015, http://enculturation.net/weepy-rhetoric.

[174] Jennifer Doyle, *Campus Sex, Campus Security* (South Pasadena, CA: MIT Press, 2015), 28.

[175] Jessica C. Harris and Chris Linder, *Intersections of Identity and Sexual Violence on Campus: Centering Minoritized Students' Experiences* (Stylus Publishing, LLC, 2017).

[176] Office of Civil Rights, "Title IX and Sex Discrimination," U.S. Department of Education, https://www2.ed.gov/about/offices/list/ocr/docs/tix_dis.html.

women. It also illustrates the unforeseen consequences of reifying dominant gender norms of feminine respectability as a strategy.

The legal framing around race-based discrimination was instrumental in shaping gender-based discrimination policies. Following the eradication of Jim Crow laws, the Civil Rights Act of 1964 was ratified to ensure equal protection of all Americans in voting, access to public facilities, and employment, among others, on basis of race, color, religion, sex, or nationality. Even though it remains a landmark federal law that has shaped future antidiscrimination legislations, the extent to which sex-based discrimination was considered in conceiving Civil Rights Act remains much disputed. Feminist legal scholar Jo Freeman argues that "sex" was added to the Act by happenstance, due largely in part to contemporaneous momentum for the Equal Pay Act.[177] However "sex" was introduced to federal antidiscrimination law, it paved way for feminist mobilization around sexual harassment.

Even though "sex" was included in Civil Rights Act, its inclusion was more of an afterthought. The notion that men would discriminate against women in employment, education, and other opportunities on the basis of their sex was theorized not as a discrimination, but rather accepted as the nature of gender relations. It was feminist legal scholar Catharine MacKinnon's work on sexual harassment in the workplace that laid the groundwork for Title IX's application in sexual assault. Before, antidiscrimination statutes applied narrowly to employment practices that actively differentiated between the sexes.[178] Lewd comments, unwanted advances, and coercing subordinates into sexual relationships did not meet the statutes' remit. The experiences shared by women in consciousness-raising groups, however, contested such narrow implementation of sex-based discrimination, as their shared grievances highlighted how such environment was harmful to women employees: many had changed their schedules or quit their jobs to avoid harassing colleagues or been fired for expressing their discomfort. It was when Lin Farley, then a director of a research project on women and work at Cornell university, coined the term "sexual harassment" to describe the shared experiences of the academics,

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[177] Jo Freeman, "How Sex Got into Title VII: Persistent Opportunism as a Maker of Public Policy," *Law and Inequality: A Journal of Theory and Practice* 9 (1991): 163. The inspiration for theorizing a discrimination framework for gender based on racial discrimination reflects the charged relationship between suffragettes and abolitionists in the nineteenth century. Both feminists and anti-racist advocates have inspired each other, but the equating of race and gender has generated much disagreement

[178] Deborah Dinner, "A Firebrand Flickers," *Legal Affairs*, March/April, 2006, http://www.legalaffairs.org/issues/March-April-2006/review_Dinner_marapr06.msp.

domestic workers, secretaries, and waitresses she had been researching during her testimony at the New York City Commission on Human Rights.[179]

Naming sexual harassment was foundational to MacKinnon's theory of sex-based discrimination. To include sexual harassment and assault in discrimination, feminist attorneys like MacKinnon had a two-fold task. First, they needed to establish how normalized sexist behavior, such as demanding sexual favors in exchange for promotion, was a discriminatory act on the basis of gender. Next, they had to demonstrate how such behavior created a "hostile environment" for women employees.[180] In *Sexual Harassment of Working Women*, MacKinnon's landmark book that expanded scholarship and legal advocacy on sex-based discrimination, she lays out the difficulties of legitimating sexual harassment as a civil rights concern. "That there has not been *even one* reported case" at the time of her book, she emphasizes, displays the failure of the legal system to respond to working women's shared plight, rather than the absence of the problem.[181]

Much of the legal progress on sexual harassment was contained to the workplace, until 1970 when Congress held the first hearing on sex discrimination in education. Two years later, Title IX was added to the Education Amendment, thereby outlawing sex-based discrimination in education institutions receiving federal assistance. While Title IX has gained a strong association with collegiate athletics, it was intended to address equal access to education. As Senator Birch Bayh who wrote and sponsored the bill in the Senate recalls, the aim was to support girls in accessing higher education.[182]

For the next two decades, opponents and proponents of Title IX grappled with the challenges of defining its remit and operationalizing metrics of gender equity. Two

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[179] For an account of the testimony, see Enid Nemy, "Women Begin to Speak Out Against Sexual Harassment at Work," *New York Times*, August 19, 1975, http://www.nytimes.com/1975/08/19/archives/women-begin-to-speak-out-against-sexual-harassment-at-work.html. In October 2017, Farley wrote an op-ed in the *New York Times* on what she describes as a "co-opted, sanitized" development of the term she created. While she recognizes the utility of the term to describe the quotidian experience of working women, she laments how it has become embedded into corporate culture and, in the process, lost the power it once had to "shock, disturb, and galvanize." See her op-ed here: Lin Farley, "I Coined the Term 'Sexual Harassment.' Corporations Stole It," *New York Times*, October 18, 2017, https://www.nytimes.com/2017/10/18/opinion/sexual-harassment-corporations-steal.html.

[180] Dinner.

[181] Catharine A. MacKinnon, *Sexual Harassment of Working Women: A Case of Sex Discrimination* (New Haven: Yale University Press, 1979), 3. MacKinnon's efforts to articulate and legitimate sexual harassment in the workplace as a shared and structural disenfranchisement of women as a social group is what philosopher Miranda Fricker terms 'hermeneutical injustice.' The gap in collective knowledge does not provide language to an individual to make sense of the wrong they experience. See Miranda Fricker, *Epistemic Injustice: Power and the Ethics of Knowing* (Oxford University Press, 2007).

[182] Nora Caplan-Bricker, "How Title IX Became Our Best Tool Against Sexual Harassment," *New Republic,* June 22, 2012, https://newrepublic.com/article/104237/how-title-ix-became-our-best-tool-against-sexual-harassment.

years after Title IX was ratified, the Tower Amendment attempted unsuccessfully to exempt athletic programs producing gross revenue or donations from Title IX compliance. In the same year, the Javits Amendment was passed as an alternative by proposing that the Department of Health, Education, and Welfare (HEW) include "reasonable provisions considering the nature of particular sports."[183] *Grove City College v. Bell* in 1984 further contested the extent of duty of care under Title IX when the college argued for its exemption on the basis that it did not receive direct federal aid as a private institution. At the time, the Supreme Court ruled in favor of the College, on grounds that Title IX compliance did not extend to institutions not supported by federal funding.[184] Four years later, the Civil Rights Restoration Act revoked the Court's decision by including any education institution receiving any type of federal funding under the law's remit. With this expansion, Title IX would apply not only to schools receiving direct federal aid, but also to private institutions with students who receive federal scholarship. In essence, the revision extended duty of care to provide equitable learning environments to all schools and students of all sexes.[185]

While Title IX's impact on athletics and the extent of its reach were being debated, little attention was directed to another branch of interpretation. In 1977, *Alexander v. Yale* presented an opportunity for MacKinnon to put her theory of sexual harassment into practice.[186] Five undergraduate women in Yale University filed a suit against the university for its refusal to develop a sexual harassment grievance procedure. The plaintiffs' charges were both individual and institutional: the suit included individual instances of rape, fondling, demanding sexual favors in exchange for an "A" grade in a course, and highlighted institutional failure in taking complaints seriously, intimidating those who spoke up, and providing recourse. As the leading plaintiff, Ann Olivarious,

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[183] Michael Messener, "Reviewed Work," review *of A Place on the Team: The Triumph and Tragedy of Title IX*, by Welch Suggs, *Academe* 92, no. 1 (January 2006).

[184] "The Grove City ruling," *The Pittsburgh Press*, March 1, 1984, https://news.google.com/newspapers?id=mJEcAAAAIBAJ&sjid=5mEEAAAAIBAJ&pg=4696%2C95327.

[185] My use of 'sex-based' discrimination thus far has been deliberate. Until now, 'sex' and 'gender' as categories in federal policy have been used interchangeably. However, ongoing campaigns from trans students and activists, and the pushback have raised questions regarding Title IX's scope. The exact language specifically states that education institutions are responsible for sex-based discrimination. Trans students and advocates have argued that 'sex' and 'gender' as categories, while distinct, should be interpreted in unified spirit of preventing violence against women and gender minorities. Opponents assert that Title IX's original wording should be respected and that application should be restricted to sex-based discrimination. See: CITE

[186] *Alexander v. Yale University*, 459 F. Supp. 1, 5 (D. Conn. 1977), https://law.justia.com/cases/federal/district-courts/FSupp/459/1/1392608/.

recounts, "we went to court, asking not for compensation but for a comprehensive reporting system."[187]

The plaintiffs were faced with the daunting and pioneering task of rendering sexual harassment in higher education legible to the eyes of the court. This task mirrored feminist attorneys' efforts a decade before to include sexual harassment in antidiscrimination statutes. The plaintiffs had to establish how sexually assaulted and harassed women constituted a "protected class," how this protected class was targeted on the basis of their gender, and, lastly, how this targeting created a "hostile environment" in which women were disenfranchised from completing their higher education. As one of the plaintiffs explained, "there is a kind of pattern of sexual harassment that takes many forms."[188] This was best reflected in one of the plaintiffs who had been sexually propositioned by a faculty member in exchange for grade advancement (what would later be named "quid pro quo harassment"[189]). The New Haven District Court ultimately dismissed the suit on the basis that the plaintiff failed to demonstrate a sexual propositioning had taken place, because she did not receive better grades. In drawing this conclusion, the District Court recognized that sexual propositioning would qualify as sexual harassment and thereby "be actionable for sex discrimination under Title IX."[190] The plaintiffs appealed, but were denied once again, since Yale had established a sexual harassment grievance procedure by this point. Even though the suit was dismissed, it led to two outcomes: most immediately, it compelled the university to develop policies and practices to address sexual harassment; in the long run, the Court's dismissal primed survivors to enact their Title IX rights against sexual harassment.[191]

A hostile environment

By 1997, the Department of Education's Office of Civil Rights (OCR) provided a set of clear guidelines on how education institutions should address sexual harassment on campus. In "Sexual Harassment Guidance," the OCR defined sexual harassment,

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[187] Ann Olivarious, "Title IX: Taking Yale to Court," *The New Journal*, April 18, 2011, http://www.thenewjournalatyale.com/2011/04/title-ix-taking-yale-to-court/.

[188] Diane Henry, "Yale Faculty Members Charged with Sexual Harassment in Suit," *New York Times*, Aug 22, 1977, http://www.nytimes.com/1977/08/22/archives/yale-faculty-members-charged-with-sexual-harassment-in-suit.html.

[189] Office of Civil Rights, "Sexual Harassment Guidance 1997," https://www2.ed.gov/about/offices/list/ocr/docs/sexhar01.html.

[190] Anne E. Simon, "*Alexander v. Yale University*: An Informal History," in *Directions in Sexual Harassment Law*, edited by Catharine A. MacKinnon, and Reva B. Siegel (Yale University Press, 2003).

[191] Ibid.

clarified Title IX's applicability, and outlined components of prompt and comprehensive grievance procedure.[192] The 1997 guidance confirmed that sexual harassment—including "quid pro quo harassment" of the kind brought forth in *Alexander v. Yale*—does indeed belong in the category of sex-based discrimination. Revision to this guidance four years later would reiterate these definitions as "grounded in longstanding legal authority that sexual harassment of students can be a form of sex discrimination covered by Title IX."[193]

In addition, the Guidance defined "hostile environment" as any member of a school engaging in verbal and physical conduct that is "sufficiently severe, persistent, or pervasive to limit a student's ability to participate in or benefit from an education program or activity."[194] With these definitions, the guidance asserted that Title IX applied to any and all instances of sexual harassment, regardless of a school's prior knowledge.[195] "Severe, persistent, or pervasive" as a metric of "hostile environment" reflects Title IX's classificatory rationale. The Guidance advises recipients to consider the type, frequency, and duration of the misconduct to assess how it may create a hostile environment. There is great weight placed on recurrence to establish a conduct as constituting a hostile environment. For example, a male student complimenting a female student on her figure may not create a hostile environment. When repeated for a long period,[196] however, the repetition of the comment qualifies the conduct as grounds for creating a hostile environment under Title IX. Sometimes, the severity of the conduct may trump repetitiveness. "The more severe the conduct, the less the need to show a repetitive series of incidents," instructs the Guidance.[197] One instance of rape, for example, would be "severe" enough to create a hostile environment and does not require the complainant to demonstrate persistence or pervasiveness.

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[192] "Sexual Harassment Guidance."

[193] The Revision maintained most of the standards outlined in the 1977 guidance. The Revision was primarily intended to clarify details of money damages, in response to the Supreme Court rulings since 1977 that held that a school can be liable for monetary damages. See Office of Civil Rights, "Revised Sexual Harassment Guidance: Harassment of Students by School Employees, Other Students, or Third Parties," January 19, 2001, https://www2.ed.gov/about/offices/list/ocr/docs/shguide.html.

[194] Ibid.

[195] Ibid. The 2001 Revision adds: 'A critical issue under Title IX is whether the school recognized that sexual harassment has occurred and took prompt and effective action calculated to end the harassment, prevent its recurrence, and, as appropriate, remedy its effects.' It is also important to note that the Guidance highlighted First Amendment and due process considerations—issues that have both dominant contemporary discourse on campus adjudication of sexual harassment.

[196] How long must such comment continue to meet the Guidance's 'persistent' metric? The Guidance does not provide a clear answer, but this notion of duration as a metric for severity is a recurring challenge in issues, such as verbal harassment and stalking.

[197] Ibid.

Lastly, the 1977 Guidance and the 2001 Revision both emphasized the importance of establishing a "prompt and equitable" grievance procedure. Schools are not required to develop a procedure specific to sexual harassment. However, there must be a nondiscrimination policy and reporting process that is equipped to address sexual harassment complaints.[198] If there is to be a grievance procedure specific to sexual harassment, the Guidance recommends that there be proactive efforts to inform the student body about their rights to file complaints. Moreover, the procedure should be observed without intimidation from the school or direct contact between the parties involved. Lastly, the Guidance advised putting interim measures, such as academic accommodations to separate the parties involved, to ensure swift investigation. By having such policies, the Guidance stated, "a school is telling its students that it does not tolerate sexual harassment and that students can report it without fear of adverse consequences."[199]

Since the 1977 guidance, the OCR has produced a series of instructions on Title IX compliance in the form of "Dear Colleague" Letters. While these letters are not legally binding, they aim to guide recipients in complying with Title IX requirements and educating members of the public with details about their rights.[200] The Dear Colleague Letters of recent years reflect the three main concerns outlined in earlier guidance as to what counts as sexual harassment, what constitutes a hostile environment, and what makes for a fair grievance procedure. "Sexual harassment" continues to be a contentious term, fraught with unforeseen limitations. The distinctions between "sex," "gender," and "sexuality," for example, pose new challenges for laws like Title IX that have thus far used those terms interchangeably under the bracket of sex-based discrimination. For example, current debate on trans and genderqueer students' access to bathrooms and other school facilities questions whether Title IX should be interpreted broadly to include

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[198] Ibid. There is much disagreement regarding what constitutes best practices for campus adjudication of sexual harassment. Some argue that there should be a policy and reporting process specific to sexual harassment: the intimate relationship between the parties involved makes sexual harassment adjudication especially challenging in ways that other forms of discrimination based on, say, race or disability, are not. Others contest this view to recommend that all forms of identity-based discrimination be branched under the same nondiscrimination policy and procedure. Currently, the Office of Civil Rights oversees compliance on age, disability, race, and sex, discrimination, and much of the language around which conducts constitute a 'hostile environment' is shared. Interestingly, it is only in policy around sex-based discrimination that campus adjudication discussion explicitly states that the credibility of the complainant be investigated. The 1997 Guidance, for example, writes: "The level of detail and consistency of each person's account should be compared in an attempt to determine who is telling the truth." Such emphasis on credibility does not appear in OCR's antidiscrimination policy guidance pertaining to age, race, and disability.

[199] Ibid.

[200] Ibid., "Questions and Answers on Title IX and Sexual Violence," April 29, 2014, https://www2.ed.gov/about/offices/list/ocr/docs/qa-201404-title-ix.pdf.

any and all forms of sex, gender, and sexuality-related discrimination, or whether there is a need for a separate legal framework specific to gender identity. Consider also the difficulty in categorizing intimate partner violence between partners of same sex: some feminist advocates maintain that intimate partner violence is fundamentally gender-based, while others argue that gender and sexuality are irrelevant to incidents of partner violence. Changing social norms on sex, gender, and sexuality press on the OCR to clarify and instruct Title IX compliance, and guidance like "Dear Colleague" Letters continue to play an important role in operationalizing best practices.

An "epidemic" of campus sexual assault

Under the Obama Administration, the past five years have witnessed further expansion of Title IX's scope, especially as it relates to issues of gender-based violence. If earlier Title IX applications centered on establishing sexual harassment and assault as forms of sex-based discrimination, recent movement by college women has emphasized education institutions' obligation to prevent a hostile environment on basis of sex, gender, and sexuality.[201]

In 2011, Yale University once again sparked national conversation when sixteen undergraduate students and recent graduates filed a Title IX complaint against the university for creating a hostile environment.[202] The complaint brought together public instances of sexism on campus and personal experiences of sexual violence. The complaint addressed incidents like the "No means yes, yes means anal," chant by the Delta Kappa Epsilon fraternity pledges in March 2010 as examples of a sexually hostile environment.[203] Testimonies from survivors added the challenges each faced in accessing resources, obtaining accurate information about grievance procedure, and responding to dismissive attitude from university employees. One of the complainants explained, "The important thing to realize is that there are two aspects to Title IX—it covers what happens both inside the classroom and outside the classroom, all of which is encompassed in the

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[201] The scope of this chapter centers on Title IX, but it should be noted that students' antirape organizing has extended beyond employing legal tool.

[202] Christina Huffington, "Breaking News: Yale Students File Title IX Suit Against University," *The Yale Herald*, March 31, 2011, https://web.archive.org/web/20110403015738/https://yaleherald.com/topstory/breaking-news-yale-students-file-title-ix-suit-against-school/.

[203] Claire Gordon, "Title IX Complaint Against Yale Has a Case," *Huffington Post*, April 1, 2011, https://www.huffingtonpost.com/claire-gordon/yale-sexual-harassment-title-ix_b_843273.html.

university experience."[204] The conjoining of the personal and the institutional recalled the plaintiffs' efforts nearly three decades ago in *Alexander v. Yale*.

Since then, the extent to which institutional failure to take sexual assault complaints seriously impacts survivors' ability to complete their college education persisted in national media. In 2012, Angie Epifano wrote a detailed account of Amherst College's mishandling of her rape in the college newspaper, which quickly went viral and, within one week of publication, it reached over 370,000 clicks.[205] The harrowing account describes how the sexual assault counselor repeatedly dismissed and questioned Epifano's report of rape, and how her request for residential accommodation away from her assailant was denied.[206] After months of battling post-traumatic stress disorder in and out of a psychiatric ward, Epifano ultimately decided to leave Amherst.

Like Epifano, survivors in other universities took to school papers, Office of Civil Rights, and social media to share their experiences of sexual assault and university mishandling. In 2009, OCR received nine Title IX complaints; in 2014, there were 102.[207] These complaints come from a diverse group of higher education institutions and raise a range of issues pertaining to sexual violence. A 110-page long complaint filed against the University of Southern California shared testimonials from more than 100 students on the reporting process.[208] From Tufts University, survivors vocally spoke out against institutional dismissal of sexual assault between same-sex partners,[209] and denial of academic and residential accommodations.[210] UNC-Chapel Hill received complaints for both Title IX and Clery violations alleging a sexual assault cover-up.[211] University of Mary Washington was the first to receive a complaint that included cyberharassment and

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[204] Huffington.

[205] John Hechinger, "Amherst Overhauls Sex-assault Reporting After Outcry," *Bloomberg*, October 25, 2012, https://www.bloomberg.com/news/articles/2012-10-25/amherts-overhauls-sex-assault-reporting-after-outcry.

[206] Angie Epifano, "An Account of Sexual Assault at Amherst," *The Amherst Student*, October 17, 2012, http://amherststudent.amherst.edu/?q=article%2F2012%2F10%2F17%2Faccount-sexual-assault-amherst-college.

[207] Letter from Catherine E. Lhamon, Assistant Secretary for Civil Rights, U.S. Department of Education, to Senator Barbara Boxer 2 (Apr. 28, 2015), https://perma.cc/569X-3JCJ.

[208] Jason Song and Richard Winton, "U.S. Investigates Handling of Alleged Sex Assaults at USC," *Los Angeles Times*, July 22, 2013, http://articles.latimes.com/2013/jul/22/local/la-me-usc-sexual-harassment-20130723.

[209] Arlette Saenz, "College Student Details His Sexual Assault for Senate Committee," *ABC News*, March 21, 2015, https://web.archive.org/web/20150321155812/http://abcnews.go.com/blogs/politics/2014/06/college-student-details-his-sexual-assault-for-senate-committee/.

[210] Tyler Kingkade, "The Woman Behind #SurvivorPrivilege Was Kicked Out Of School After Being Raped," *Huffington Post,* December 6, 2014, http://www.huffingtonpost.co.uk/entry/survivor-privilege-wagatwe-wanjuki_n_5489170.

[211] Annie Clark, "Why I am Filing an Office for Civil Rights Complaint and Clery Act Complaint Against UNC-Chapel Hill," *Huffington Post*, January 16, 2013, https://www.huffingtonpost.com/annie-e-clark/why-i-am-filing-an-office_b_2489641.html.

cyberstalking as online behaviors contributing to a sexually hostile environment.[212] While most recent complaints focus on institutional mishandling of peer-to-peer incidents, complaints from Arizona State University[213] and Northwestern University,[214] among others also detail quid pro quo harassment.

University-specific campaigns escalated to national efforts as well. Student organizers formed online networks to direct their activism to the Department of Education to ensure comprehensive Title IX enforcement at the federal level. In July 2013, the Ed Act Now campaign was launched with four key demands requesting the Department to: (1) conduct timely investigations when complaints are made; (2) institute proactive compliance measures; (3) increase transparency when cases are resolved; and (4) provide guidance on best supporting students of color and LGBTQ identities.[215] The campaigners later formed Know Your IX, a survivor- and youth-led project to end sexual and intimate partner violence in education. As more and more survivors began utilizing Title IX and Clery complaints to hold their schools accountable, lead complainants from UNC-Chapel Hill formed End Rape on Campus (EROC) to support students in filing complaints and obtaining trauma-informed legal representation.[216] These youth and survivor-led national efforts propelled the White House to establish the Task Force to Protect Students from Sexual Assault in 2014 to facilitate interagency coordination.[217] Later that year, the Department of Education released a list of open Title IX investigations

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[212] Katz, Marshall & Banks, LLP, "KMB Clients File Title IX Complaint Against University of Mary Washington," May 7, 2015, https://www.kmblegal.com/news/kmb-clients-file-title-ix-complaint-against-university-mary-washington.

[213] See Title IX Tracker, "Arizona State University," *The Chronicle of Higher Education,* https://projects.chronicle.com/titleix/campus/Arizona-State-University/

[214] "Northwestern Student Sues Prof. Laura Kipnis," *Chicago Tribune*, May 17, 2017, http://www.chicagotribune.com/news/local/breaking/ct-northwestern-student-sues-professor-book-20170517-story.html

[215] See Ed Act Now's full demands here: http://edactnow.tumblr.com/post/56350266714/official-asks-to-the-department-of-education

[216] Rebecca Johnson, "Campus Sexual Assault: Annie E. Clark and Andrea Pino Are Fighting Back—And Shaping the National Debate," *Vogue*, October 9, 2014, https://www.vogue.com/article/college-sexual-assault-harassment-annie-e-clark-andrea-pino.

[217] The White House, "Memorandum -- Establishing a White House Task Force to Protect Students from Sexual Assault," January 22, 2014, https://obamawhitehouse.archives.gov/the-press-office/2014/01/22/memorandum-establishing-white-house-task-force-protect-students-sexual-a. Many celebrated the creation of the Task Force as a national recognition of a larger social problem, but some feminist critics, such as Jennifer Doyle, have also cautioned against the legalistic bureaucratization of anti-rape campaigns driven by Title IX complaints. Legal scholar Michelle Anderson further added that, while education institutions may be lacking in their Title IX compliance, young women affiliated with such places were afforded greater protection, and urged advocates to extend the discourse beyond the campus. For feminism criticisms specific to Title IX, see Doyle; Michelle J. Anderson, "Campus Sexual Assault Adjudication and Resistance to Reform," *Yale Law Journal* 125 (2015): 1940-2005. These criticisms aligned with growing critical engagement with popularization of feminist causes in mainstream media. See Sarah Banet-Weiser, *Empowered: Popular Feminism and Popular Misogyny* (Durham: Duke University Press, 2018).

as a gesture of commitment to transparency.[218] Since then, the Task Force, in collaboration with the Department of Education, initiated several projects, such as the Apps Against Abuse Challenge,[219] It's On Us pledge,[220] and the Data Jam.[221]

The momentum intensified with three high-profile cases that capture the campus rape imaginary at play. In September 2014, a visual arts student from Columbia University garnered national attention (and, with it, scrutiny) with her senior thesis piece, "Mattress Performance (Carry That Weight)." The piece involved carrying a fifty-pound dormitory mattress with her on university premises until either her rapist was expelled or she graduated.[222] The endurance performance drew from her experience of being raped by a classmate a sophomore and unsuccessfully navigating Title IX ecosystem.[223] Following the alleged incident in 2012, she filed a Title IX complaint; a year later, the university disciplinary board found the alleged not guilty of sexual misconduct.[224] Several months before her performance began, Sulkowicz tried to file a police report, but it was dismissed by the district attorney for lack of reasonable suspicion. When she discovered that two other women had been assaulted by her assailant, Sulkowicz joined 22 other complainants to file a Title IX complaint.[225] Pointing to these reporting attempts, critics questioned the plausibility of Sulkowicz's accusation and her own trustworthiness. Regardless, she spent the entire academic year carrying the mattress, including the day of her graduation. The day after, Morning Heights was covered with posters that depicted

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[218] Press Release, Department of Education, "U.S. Department of Education Releases List of Higher Education Institutions with Open Title IX Sexual Violence Investigations," May 1, 2014, https://www.ed.gov/news/press-releases/us-department-education-releases-list-higher-education-institutions-open-title-ix-sexual-violence-investigations.

[219] The White House, "Apps Against Abuse," n.d., https://obamawhitehouse.archives.gov/1is2many/apps-against-abuse.

[220] Kyle Lierman, "It's On Us, a Growing Movement to End Campus Sexual Assault," The White House, September 24, 2014, https://obamawhitehouse.archives.gov/blog/2014/09/24/its-us-growing-movement-end-campus-sexual-assault.

[221] Rosenthal and Graubard.

[222] The piece followed rules of engagement Sulkowicz had devised prior to the performance. See "Rules of Engagement": http://www.emmasulkowicz.com/overview.

[223] Vanessa Grigoriadis, "The Revolution Against Campus Sexual Assault," *The Cut,* September 21, 2014, https://www.thecut.com/2014/09/emma-sulkowicz-campus-sexual-assault-activism.html.

[224] Max Kutner, "Accused Student in Mattress Protest Sues Columbia," *Newsweek*, April 28, 2015, https://www.newsweek.com/anti-mattress-protest-paul-nungessers-lawsuit-against-columbia-university-326319; Aaron Holmes, "Columbia Settles Nungesser's Title IX Lawsuit," *Columbia Daily Spectator*, July 13, 2017, columbiaspectator.com/main/2017/07/13/columbia-settles-nungesser-title-ix-lawsuit/; and Ariel Kaminer, "Accusers and the Accused, Crossing Paths at Columbia University," *The New York Times*, January 10, 2018, https://www.nytimes.com/2014/12/22/nyregion/accusers-and-the-accused-crossing-paths-at-columbia.html.

[225] Katie Baker, "23 Students File Federal Complaints Against Columbia University For Mishandling Sexual Assault," *Buzzfeed*, April 24, 2014, https://www.buzzfeed.com/katiejmbaker/23-students-file-federal-complaints-against-columbia-univers?utm_term=.nx41grnGB#.mynpV7voz.

Sulkowicz with her mattress with the caption, "pretty little liar," and photos of them were circulated by an anonymous Twitter account by the handle @FakeRape.[226]

Sulkowicz's performance arrived at a time when the cultural zeitgeist was grappling with the prevalence and, by extension, everyday nature, of sexual violence. As the former Secretary of State Hilary Clinton remarked, "the image should haunt all of us."[227] The image of Sulkowicz carrying a mattress—sometimes marching along, sometimes accompanied by friends, and at times, trudging with it—powerfully demonstrated the weight of living with trauma that is oft absorbed silently by survivors. In giving shape to trauma, Sulkowicz displayed trauma's ubiquity in all aspects of her life, permeability as it seeps to and from public and private spaces, and shareability as her peers joined her to lessen the weight.[228] In one interview, Sulkowicz explained, "the best arrangement is four people carrying the mattress, because they each take a corner…Then it's really light."[229] Heavy or light, Sulkowicz's mattress visualized three aspects of the campus rape imaginary. The discourse surrounding Sulkowicz and the final smear campaign articulated in the vocabulary of trustworthiness highlighted the politics of credibility undergirding imaginaries of rape. At the same time, the mattress's resonance with student survivors who appropriated the mattress on their own campuses as means of protest expressed their silent plight of navigating a complicated process, seeking resources, all the while trying to complete their degrees. Finally, the legal battle between Sulkowicz and the accused, and Columbia's response, called into question institutional liability and fairness.

Soon after the mattress performance began, these tensions surfaced again, when a student by the pseudonym "Jackie" from University of Virginia (UVA) recounted her experience of gang rape in *Rolling Stone*. An interview with Jackie titled, "A Rape on Campus,"[230] was heavily interrogated for its inconsistencies and law enforcement authorities concluded there was no evidence to support her account. Ultimately, *Rolling Stone* retracted the story and raised questions about journalistic integrity of reporting on

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[226] Jessica Roy, "Posters Around Columbia Campus Call Emma Sulkowicz a 'Pretty Little Liar,'" *The Cut*, accessed February 24, 2019, https://www.thecut.com/2015/05/posters-around-columbia-emma-sulkowicz-lied.html.

[227] Hillary Clinton, DNC Women's Leadership Forum, September 19, 2014, http://www.p2016.org/clinton/clinton091914spt.html.

[228] The potency of Sulkowicz's performance has generated much scholarship on affect, trauma, and resistance. See Andrea Long Chu, "Study in Blue: Trauma, Affect, Event," *Women & Performance* 27.3 (2017), https://www.womenandperformance.org/bonus-articles-1/andrea-long-chu-27-3.

[229] Vanessa Grigoriadis, "Meet the College Women Who Are Starting a Revolution Against Campus Sexual Assault," *The Cut*, September 21, 2014, https://www.thecut.com/2014/09/emma-sulkowicz-campus-sexual-assault-activism.html.

[230] Sabrina Rubin Erdely, "A Rape on Campus: A Brutal Assault and Struggle for Justice at UVA," *Rolling Stone*, November 19, 2014, http://archive.is/2I04n.

rape as waves of Title IX complaints continued to populate national headlines. Jackie, amidst the scrutiny, maintained her position: during her deposition, Jackie stated that her interview reflects "what I believed to be true at the time."[231] The discourse that followed after Jackie's account increasingly adopted a vocabulary of trustworthiness and plausibility mirrors that of Sulkowciz's.[232]

If the mattress performance and UVA case challenged the presumed safety of being inside campus walls, *People v. Turner* highlighted how the same walls can protect perpetrators. In January 2015, Brock Turner, a first-year swimmer in Stanford University, was charged with five felony charges for sexually assaulting an intoxicated woman. The press was quick to sympathize with the "All-American swimmer" who was once "so good that he tried out for the U.S. Olympic team before he could vote,"[233] all because he "just wanted to hook up."[234] Two months later, a California jury found Turner guilty of three counts of sexual assault and he faced a maximum of fourteen years in state prison. At the sentencing, Turner's father implored against a harsh sentence, which would be "a steep price to pay for twenty minutes of action out of his twenty-plus years of life," and lamented how his son's life "will never be the one that he dreamed about and worked so hard to achieve."[235] The victim addressed Turner directly in a powerful letter that expressed the assault's impact on her life and questioned the justice system's propensity to inspect her behavior to establish her assailant's innocence. To Turner's repeated claim that he is the real victim of how "one night of drinking can ruin a life," the victim responded:

> A life, one life, yours, you forgot about mine. Let me rephrase for you, I want to show people that one night of drinking can ruin two lives. You and me. You are the cause, I am the effect. You have dragged me through this hell with you, dipped me back into that night again and again. You

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[231] Alanna Durkin Richer, "'Jackie' Says She Felt Pressure to Be in Rolling Stone Story," *AP News*, October 24, 2016, https://apnews.com/3aef3379326341c3a8d029f304e51f36.

[232] In light of #MeToo, feminist journalists have reflected upon the UVA case and some have even suggested that the case would be received differently (perhaps even positively) today. See See Roslyn Talusan, "Building Trust," *Bitch Media*, December 27, 2017, https://www.bitchmedia.org/article/media-response-to-me-too; https://thenewinquiry.com/consent-its-not-sexy/ and Katie J. M. Baker et al., "Consent: It's Not Sexy," *The New Inquiry*, February 23, 2018, https://thenewinquiry.com/consent-its-not-sexy/.

[233] Michael Miller, "All-American Swimmer Found Guilty of Sexually Assaulting Unconscious Woman on Stanford Campus," *Washington Post*, March 31, 2016, https://www.washingtonpost.com/news/morning-mix/wp/2016/03/31/all-american-swimmer-found-guilty-of-sexually-assaulting-unconscious-woman-on-stanford-campus/?utm_term=.f14aae5ee877.

[234] Lisa Fernandez and Nannette Miranda, "Ex-Stanford Swimmer Pleads Not Guilty in Rape Case," *NBC Bay Area*, Feb 2, 2015, https://www.nbcbayarea.com/news/local/Ex-Stanford-Swimmer-Brock-Turner-Makes-1st-Court-Appearance-in-Rape-Case-290528481.html.

[235] Alexandra Samuels, "Father of Student Convicted of Rape: Steep Price for '20 Minutes of Action'," *USA Today College*, June 6, 2016, http://college.usatoday.com/2016/06/06/father-of-student-convicted-of-rape-steep-price-for-20-minutes-of-action/.

> knocked down both our towers, I collapsed at the same time you did. If you think I was spared, came out unscathed, that today I ride off into sunset, while you suffer the greatest blow, you are mistaken. Nobody wins. We have all been devastated, we have all been trying to find some meaning in all of this suffering. Your damage was concrete; stripped of titles, degrees, enrollment. My damage was internal, unseen, I carry it with me. You took away my worth, my privacy, my energy, my time, my safety, my intimacy, my confidence, my own voice, until today.[236]

At the end of the day, Turner was sentenced to six months in county jail. "A prison sentence would have a severe impact on him," said Judge Aaron Persky, a former Stanford athlete himself, "I think he will not be a danger to others."[237]

When situated with the two earlier examples, the shared national outrage over Turner's case marked a moment of change. At the same time, Turner's father's comments revealed another side of the campus rape imaginary. Campus was where college-aged men (rather, boys) made frivolous mistakes, "twenty minutes of action," and it would be a gross injustice to compromise their promising futures. Together, the three high-profile examples demonstrate how the campus rape imaginary operates in "inarticulate and unstructured"[238] ways that bring together feminine duplicity, politics of credibility, and masculinity-as-play to shape assumptions and anxieties about the epidemic of campus sexual assault.

Title IX as an ecosystem

It is in this charged environment that the Department of Education and individual universities have begun to operationalize policies and practices of preventing and responding to incidents of sexual violence. This section delves into the complicated ecosystem of gender-based violence prevention and response on campus. This section begins with an overview of help-seeking and reporting opportunities available to student victims of gender-based violence on campus. It then focuses on the challenges and possibilities unique to Title IX as a civil recourse (as opposed to criminal reporting via campus safety and law enforcement). Finally, it considers the politics of categorizing

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[236] Katie Baker, "Here Is The Powerful Letter The Stanford Victim Read Aloud To Her Attacker," *Buzzfeed*, June 3, 2016, https://www.buzzfeed.com/katiejmbaker/heres-the-powerful-letter-the-stanford-victim-read-to-her-ra?utm_term=.wsGZqavm6#.yxN8vkKW2.

[237] Ashley Fantz, "Outrage Over 6-month Sentence for Brock Turner in Stanford Rape Case," *CNN*, June 7, 2016, https://edition.cnn.com/2016/06/06/us/sexual-assault-brock-turner-stanford/.

[238] Taylor, 173.

violence reflected between Title IX and the Clery Act to demonstrate two different modes of conceptualizing anonymity, confidentiality, liability, and actionability as tenets of campus safety. Amidst these bureaucratic and procedural complexities, the campus rape imaginary hovers as the reference point through which categories, practices, and policies of campus safety are shaped.

While Title IX has been at the center of popular discourse on campus sexual violence, it operates in conjunction with other campus safety policies to ensure that universities proactively prevent and respond to safety concerns. Together, these policies create a complex landscape of anonymity and confidentiality, data collection and information sharing, compliance and actionability, response and remedies. What emerges as a result is an ecosystem of campus safety—a loose network of agencies with different aims, constraints, liability, and protocols. This variability is not only an indication of higher education's ongoing engagement with sexual misconduct, but also a reflection of the politics of naming, measuring, and accounting to sexual violence inculcated in contemporary antirape policies and practices.

The ecosystem of campus safety reflects the two-pronged approach of prevention and response in which institutional response to individual instances of safety violation inform structural changes to policy and practice. Bridging prevention and response is data collection and information sharing. In collecting comprehensive information about campus crimes and sharing them annually with the wider campus community, the regulatory aim of safety-related legislations is to "foster greater transparency and accountability around institutional policies and procedures."[239] To that end, Title IX, the Clery Act, and FERPA work closely together to ensure comprehensive yet confidential sharing of sensitive information. Title IX's contained scope in gender-based violence interacts most directly with the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act of 1990. Also known as the Clery Act, it is a federal statute requiring all colleges and universities receiving federal financial aid programs to centrally collect and disclose campus crime statistics and train the campus community on safety protocols. A school must therefore ensure that its policies and practices specifically pertaining to gender-based violence not only meet Title IX requirements, but also are consistent with Clery regulations. Because both statutes involve collection and

[239] Department of Education, "Federal Register, Volume 79 Issue 202 (Monday, October 20, 2014)," accessed February 23, 2019, https://www.govinfo.gov/content/pkg/FR-2014-10-20/html/2014-24284.htm.

sharing of private student information, they must also comply with the Family Educational Rights and Privacy Act, or FERPA.

This remaining section begins by mapping out the various reporting procedures for sexual violence from a student and staff perspective to illustrate how Title IX requirements complicate confidentiality and survivor autonomy, compliance, and actionability. I then elaborate on how incidents of sexual misconduct are documented under the Clery Act to highlight the differing definitions, objectives, and liability between Title IX and the Clery Act. I also discuss how the two regulations engage with data privacy requirements of FERPA. I conclude this chapter with a discussion of the emergence of digital safety reporting tools.

Reporting under Title IX

In the complex ecosystem of sexual violence prevention and response, Title IX provides multiple routes of seeking support and filing formal complaints. Depending on institutional structure and type, location, and size, universities adopt policies and practices that best enable them to meet Title IX obligations with the resources available to them. The Office of Civil Rights (OCR) in the past decade has released a series of guidance to clarify schools' legal requirements and recommend best practices. As the history of Title IX's expanding interpretation demonstrates, these recommendations have been reactionary at times: they respond to a legitimate concern of the time, but in doing so, may overlook considerations that may become significant in the future. Recognizing these challenges, OCR invites schools to develop a system of prevention and response that best meets their needs and resources, so long as they commit to eliminating "hostile environment."

Guidance documents repeatedly emphasize reporting as a crucial site: it is an opportunity for not only responding to individual complaints, but also preventing future incidents. The White House Task Force, for example, encourages institutions to "take into account its own circumstances and structures" in developing a dedicated grievance procedure and support resources.[240] To institute policies and practices in compliance with Title IX, a university must uphold the law's two principles: (1) "prompt and equitable

[240] White House Task Force to Protect Students from Sexual Assault, "Preventing and Addressing Campus Sexual Misconduct: A Guide for University and College Presidents, Chancellors, and Senior Administrators," (January 2017) https://www.whitehouse.gov/sites/whitehouse.gov/files/images/Documents/1.4.17.VAW%20Event.Guide%20for%20College%20Presidents.PDF.

resolution" of sexual harassment incidents; and (2) elimination of "hostile environment." A school must thus create a trauma-informed system of prevention and response that enables informed consent and active decision-making and assures its liability to act. In other words, a school has the difficult task of developing an information infrastructure that allows for institutional actionability, while safeguarding confidentiality of those involved.

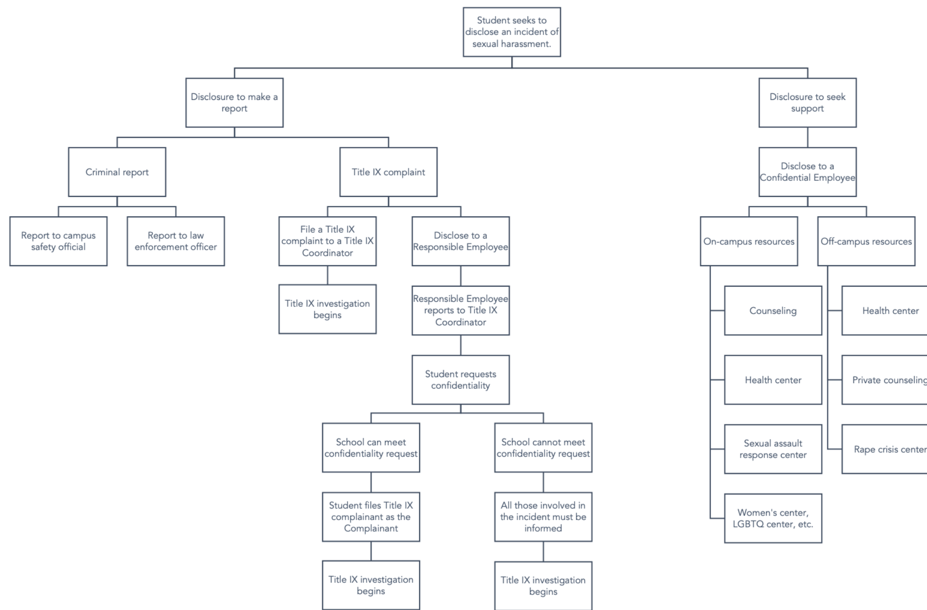

Fig. 1. A Flowchart of resources and reporting options for a student. Created by author.

Following an incident of sexual assault, a student may consider disclosing what happened in order to seek support or file a formal report. If a student does not want to make a report, but is in need of welfare resources, she can disclose what happened to a Confidential Employee. A Confidential Employee, according to Title IX, refers to those who have a professional or pastoral license to confidentiality, such as counselors and chaplains. OCR advises schools to also designate those who work in assistive capacity to such professionals (e.g., receptionist at a counseling center or a volunteer at Women's Center) as Confidential Employees. A Confidential Employee can direct the student to on-campus resources, such as counseling, health center, sexual assault response center, and student life centers like the LGBTQ center and the women's center. A student may also request off-campus resources, such as a local health center, private counseling, and local victims' centers. The key distinction is that Confidential Employees, unlike Responsible Employees, do not have reporting responsibility under Title IX.

A student who wishes to report has two options: file a criminal report or make a civil complaint via Title IX. For criminal reporting, a student can report through campus security or local police department. While many equate these two reporting procedures, they have critical differences in aim, procedure, and outcomes. In the criminal justice context, law enforcement authorities initiate an investigation, following a police report; in other words, criminal investigations are discretionary. The purpose of the investigation is for law enforcement authorities to determine whether a violation of criminal law has taken place and, if so, to impose appropriate criminal penalties. As a result, the US Constitution provides the Defendant with procedural protections, such as the right to counsel, the right to confront the Plaintiff, and the right against self-incrimination, during the adjudication. If found guilty, the Defendant faces criminal penalties. Because some forms of sexual harassment (e.g., rape or battery of an intimate partner) are criminal offenses, students may pursue criminal reporting process. The presence or absence of a Title IX complaint should have no bearing on criminal investigation. They are two separate procedures and OCR advises both schools and local law enforcement agencies to cooperate for timely and fair resolution.[241]

Title IX complaint procedure is distinct from its criminal counterpart because it is not discretionary. Under Title IX, a school has a federal obligation to "promptly and equitably" resolve sexual harassment complaints; in other words, a school's response is compulsory. A Title IX investigation thus has two aims: (1) determine when the alleged misconduct has taken place; and (2) if so, decide what the school will do to eliminate the hostile environment created by the misconduct. The investigation that follows is a procedurally distinct form of adjudication. First, the constitutional protections afforded to the Defendant do not extend here. A school must ensure that Title IX investigation is "adequate, reliable, impartial, and prompt" to both parties, the Complainant and the Respondent, involved. Secondly, schools must use the preponderance of the evidence standard, an evidentiary standard widely adopted in administrative procedures for civil rights violations.[242] In colloquial terms, a complaint meets the preponderance of the

[241] OCR recommends schools and local law enforcement agencies to enter into an agreement called "memorandum of understanding." In this agreement, both institutions can discuss how information can be shared and how to carry out contemporaneous investigations, while respecting students' right to privacy under FERPA. Common practice prioritizes criminal investigation: schools can place Title IX investigations on hold, while criminal investigation's evidence collection is in process. See "Questions and Answers": F-3.

[242] Office of Civil Rights, "Dear Colleague Letter," April 4, 2011, https://www2.ed.gov/about/offices/list/ocr/letters/colleague-201104.html. This standard is also consistent with Title VI of the Civil Rights Act of 1964. For further details on the use of the preponderance of the evidence standard for civil rights violations, see OCR's *Case Processing Manual*.

evidence standard when "it is more likely than not that sexual harassment or violence occurred."[243] At the conclusion of an investigation, outcomes may involve remedies for the Complainant, sanctions for the Respondent, and amendments to existing policy and practices to ensure that the school eliminates similar hostile environments in the future.

For a student interested in making a Title IX complaint, the school's duty to respond to any incidents of sexual harassment complicates their ability to decide when and how they want to proceed with the complaint procedure. A student who is certain about making a complaint may directly contact the school's designated Title IX Coordinator. This level of certainty is often rare: a student who has an interest in Title IX complaints, especially following a traumatic incident, is likely to be distressed and thus easily overwhelmed by an already complicated reporting system. A student may also fear potential retaliation from the alleged perpetrator or the school; in this case, a student may have a higher expectation of anonymity and confidentiality in the reporting process. Moreover, a student may be uncertain whether they want to report or not, because they do not have complete information about reporting options and their likely outcomes. A student in distress is thus likely to be easily overwhelmed by navigating the complicated reporting ecosystem. The school, then, has the task of providing comprehensive information to a distressed student so that they can make an informed decision.

Even from an early point of reporting, this task is made difficult by the process in which a disclosure becomes a formal Title IX complaint. In order to acquire more information about reporting options and reasonable outcomes to expect, a student is likely to disclose what happened to those close to them. Depending on the student's experience, this confidante may be any variety of school employee, ranging from a residential advisor or a professor to athletic coach or teaching assistant. What a student may reasonably perceive as an act of disclosure, however, can become a formal Title IX complaint when a student discloses to a Responsible Employee. OCR guidance on Title IX defines a Responsible Employee as an individual who has the authority to respond to incidents of sexual harassment, or who is reasonably perceived to have such authority.[244] The flowchart below explains how an employee can determine their reporting responsibility and their ensuing Title IX obligations:

[243] "Dear Colleague Letter," 11.
[244] "Questions and Answers."

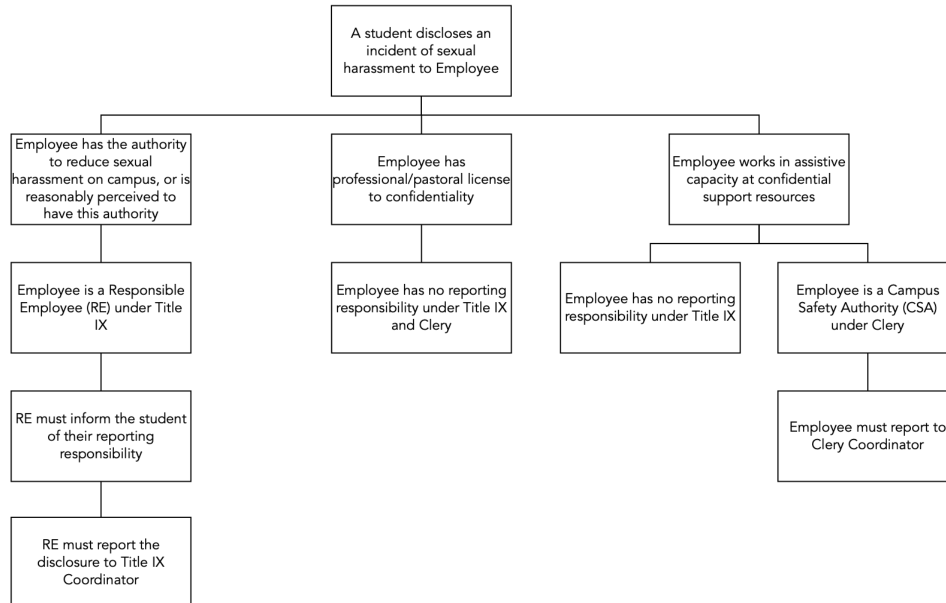

Fig 2. A flowchart of campus employee's reporting responsibilities. Created by author.

Reporting responsibility thus creates a tension. A student who discloses a traumatic experience does so to a trusted individual. Especially following incidents of sexual assault, the survivor's ability to articulate what happened and agency to pursue the recourse they deem necessary is essential to their healing process.[245] A Responsible Employee may be sympathetic to this but is placed in a position where she has a federal obligation to breach the student's trust by reporting to the Title IX Coordinator. The Coordinator must then contact the student to, first, confirm whether the student has any interest in escalating the disclosure to a formal Title IX complaint; if the case is serious enough, the Coordinator must determine whether it warrants an investigation, with or without the consent of the victim. When an investigation begins, the student must comply with its procedure, such as writing a statement or being interviewed by an independent fact-finder, that may impact their academic lives. A well-meaning Responsible Employee is then in a position where she must weigh a student's agency in reporting process and trust in disclosing against her reporting responsibility.

Once a Responsible Employee informs the Title IX Coordinator, the Coordinator contacts the student who made a disclosure to determine whether the incident should be made into a formal Title IX complaint. If the student wants to proceed and does not have

[245] Judith Lewis Herman, Trauma and Recovery: The Aftermath of Violence--From Domestic Abuse to Political Terror (New York: Basic Books, 1992); Susan J. Brison, Aftermath: Violence and the Remaking of a Self (Princeton, N.J.: Princeton University Press, 2003); Bessel Van Der Kolk, The Body Keeps the Score: Brain, Mind, and Body in the Healing of Trauma (New York: Penguin Books, 2015).

confidentiality concerns, the student becomes the Complainant and a Title IX investigation begins. In most cases, students have serious doubts about reporting and confidentiality concerns, and it is up to the Coordinator to determine whether an investigation should take place and, if so, to what extent the school can protect the Complainant's confidentiality. Once again, a student's expectation of confidentiality and a school's ability to grant confidentiality while meeting Title IX obligations come into conflict. A distressed student, especially if they have reasons to fear retaliation, is likely to request a higher degree of confidentiality. For example, a student who does want an investigation, but fears retaliation may ask that their name be withheld from the alleged perpetrator. Alternatively, a student may reject the investigation altogether.

But for a school to meet its Title IX obligations in responding to a notice of sexual harassment, certain identification details, such as the people involved in a complaint, are integral to starting and completing an investigation. OCR highlights five factors for Coordinators to consider in deciding how to meet Complainants' confidentiality requests: (1) the likelihood of additional acts of violence by the alleged perpetrator; (2) the alleged student's previous history of violence; (3) presence of weapons in the alleged incident; (4) age of the victim; and (5) the school's ability to collect relevant information through means other than the Complainant, such as security footages. If these factors are not present, a school may respect the student's confidentiality request.

For the investigation that follows, the OCR recommends a three-steps approach to conducting a Title IX investigation: fact-finding, hearing, and decision-making (see Fig. 3). These later phases of the Title IX procedure are outside the direct focus of this dissertation, but it is worth noting how the tensions that emerge through the reporting process continue to shape the lifecourse of Title IX complaints. To determine whether a Title IX violation has taken place, the institution must assess whether the incident in question is "severe, persistent, or pervasive"[246] enough to create a hostile environment on campus. In other words, severity, persistence, and pervasiveness operate as metrics through which an institution's Title IX compliance is measured. Both the Complainant and Respondent are entitled to seek interim measures, arrangements that a school should take to "minimize the burden"[247] students face during the process. These may include:

[246] "Sexual Harassment Guidance."

[247] "Questions and Answers," G-2. Interim measures, as they have been interpreted by the Obama Administration, have been met with much criticism. Critics argue that interim measures are a violation of Title IX's fairness principle, because they give procedural privileges to the Complainant. They further add that interim measures should not be arranged before the investigation concludes. Supporters contend that interim measures are

academic support (e.g., tutoring, extension, changing academic schedule to separate from the Respondent, etc.), counseling, housing accommodation (e.g., changing dormitories or dining hall access, if shared with the Respondent), and a no-contact order. Interim measures can be arranged with or without, and before or during a Title IX complaint; it often becomes an integral part of the investigation for the Complainant, especially in cases where they fear retaliation from the Respondent.

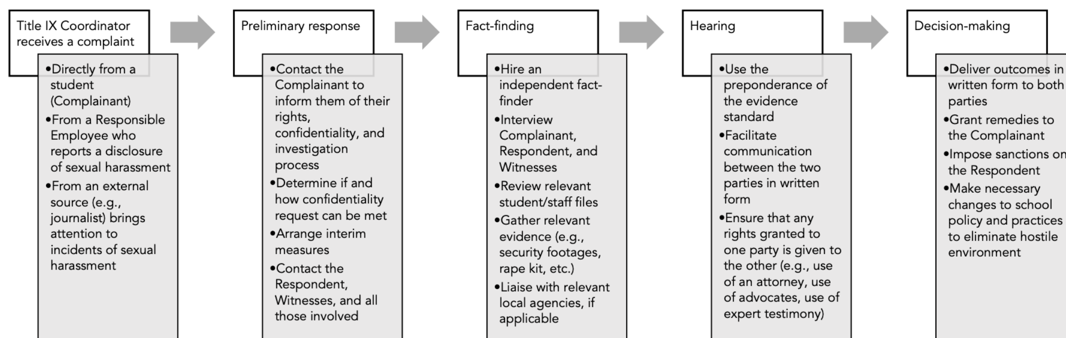

Fig 3. A progress chart of Title IX reporting procedure. Created by author.

Lastly, decision-making concludes the investigation by providing remedies to the Complainant, imposing sanctions on the Respondent, and amending the school's policy and practices as necessary to prevent similar incidents in the future. Remedies may be similar to interim measures, as they include academic, extracurricular, and residential accommodations, counseling, escorts to and from spaces shared with the Respondent, and no-contact orders. Regardless of the similarity, remedies must be offered to the Complainant again. Sanctions imposed on the Respondent may be provisional (e.g., academic, extracurricular, and residential arrangements to be separated from the Complainant, counseling, and training) or disciplinary (e.g., no-contact order until graduation, transfer to a different school, suspension, or expulsion). An appeals process

not sanctions and intended to ensure a smooth running of the investigation. Under the Trump Administration's recent revocation of Obama-era guidance on interim measures, it remains to be seen how schools will interpret them.

is not a mandatory component of a Title IX investigation, though OCR advises that an appeals process for findings or remedial actions or both must be offered to both parties.[248]

The Title IX ecosystem detailed thus far show just how complicated it is to navigate reporting procedures and resources on campus. In response to national attention, schools have included consent and bystander training, in addition to Title IX workshops for students and faculty alike, during orientation. But a workshop during the first week of school is nowhere near sufficient an orientation for students to remember and act upon in times of duress. The next section juxtaposes the categories of violence in Title IX and the Clery Act to locate them as two complementing and conflicting models of conceptualizing campus safety.

Digitizing campus safety

In 2011, shortly after the "Dear Colleague" Letter expanded Title IX guidelines to include sexual assault, Vice President Joe Biden launched the Apps Against Abuse Challenge. Introducing technologists as an unlikely but important stakeholder, the Challenge encouraged anti-violence advocates and policymakers to "harness the power of mobile technology" to connect domestic violence victims to local law enforcement and resources.[249] Three years later, as a wave of Title IX complaints swept through the country, the White House organized a Data Jam to kick off the new Task Force to Protect Students from Sexual assault. The Data Jam aimed to develop a digital solution for a "more effective and transparent responses to incidents."[250] In line with this objective, White House guidance to higher education administrators advised them to "develop an online system for anonymous reporting of sexual misconduct."[251]

The Department of Education and the White House were not alone in turning to digital interventions to the campus sexual assault "epidemic." The past decade has witnessed a growing interest in campus safety technologies, both commercially and internally. These technologies mirror sexual violence discourse's bifurcation between prevention/education and response.[252] Mobile applications, like bSafe, LiveSafe,

[248] "Questions and Answers," I-1.

[249] The White House, "Apps Against Abuse."

[250] Rosenthal and Braubard.

[251] "Preventing and Addressing Campus Sexual Misconduct," 11.

[252] I am not interested in assessing the efficacy of these specific technologies. Rather, what I want to highlight by listing them here is twofold. First, that their proliferation captures an interest in digitization as a potential solution; and second, that what they perceive as a gap in existing resources incite them to reproduce the

Kitestring, Noonlight and Apps Against Abuse winners Circle of 6 and On Watch, used locating, monitoring, and tracking features to communicate the user's whereabouts in text messages to trusted contacts and direct them to local resources.[253] In some schools, like Carnegie Mellon, students developed their own versions of safety technologies through innovation challenges.[254] Wearable devices (necklaces and keychains, for example) with similar functions and panic buttons also emerged.[255] Consent apps, like LegalFling and We-Consent, encrypted and time-stamped users' consent to introduce "clear rules and boundaries" to the murkiness of intimate decision-making.[256] Consider also Specular Theory's use of virtual reality technology to narrate an incident of sexual assault from two perspectives. Some vendors even used virtual reality (VR) technology to present two perspectives of a case of sexual assault that lead to "misinterpreted signals and [doing] things that cannot be undone."[257]

There are also mobile and web-based applications, such as Callisto, Lighthouse Services, Vertiglo Lab's identically named Lighthouse, and One Love Foundation's myPlan app, aimed at facilitating user's reporting and help-seeking experience.[258] Increasingly, there is interest in using artificial intelligence to assist in user's decision-making, as Botler.AI, Spot, and Stella.AI exemplify.[259] Some schools have even developed their own internal reporting softwares, like Michigan State University and the State University of New York (SUNY).[260]

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common bifurcation in sexual violence discourse between prevention/education and response. For a technological survey and assessment of these tools, see Heidi Liu, "When Whispers Enter the Cloud: Evaluating Technology to Prevent and Report Sexual Assault" 31, no. 2 (2018): 939–963.

[253] bSafe, https://getbsafe.com/; LiveSafe, https://www.livesafemobile.com/; Kitestring, https://www.kitestring.io/; Noonlight (formerly SafeTrek), https://noonlight.com/; Circle of 6, https://www.circleof6app.com/about/; OnWatch, https://appsagainstabuse.devpost.com/submissions/4929-onwatch-a-mobile-app.

[254] SPOT app, https://www.cmu.edu/iii/projects-research/spot.html.

[255] Natalie Matthews, "This Jewelry Comes With a Panic Button to Get You Out of Bad Dates," *ELLE*, May 5, 2014, https://www.elle.com/news/culture/guardian-angel-app-jewelry.

[256] LegalFling, https://legalfling.io/; We-Consent, https://we-consent.org/.

[257] Perspective Project, http://www.speculartheory.com/perspective/. The full summary of the narrative reads: 'A young woman attends a college party with the intention of shedding her shy girl HS persona. At the same party a young man is after a similar reinvention. They meet. Add booze. Misinterpreted signals and do things that cannot be undone.' The party as a site of danger, the addition of alcohol, and framing of the narrative as a gray area are telling, and I would argue that this is reflective of the campus rape imaginary.

[258] Callisto, https://www.projectcallisto.org/; Lighthouse Services, https://www.lighthouse-services.com/index.html; Vertiglo Labs' Lighthouse, http://vertiglolabs.com/apps; myPlan app, https://www.joinonelove.org/get-help/#myplan.

[259] Khari Johnson, "Botler.Ai Launches Sexual Harassment Detection Bot for U.S. and Canada," *VentureBeat*, December 6, 2017, https://venturebeat.com/2017/12/06/botler-ai-launches-sexual-harassment-detection-bot-for-u-s-and-canada/; Parmy Olson, "This Chatbot Is Helping People Track Harassment At Work," *Forbes*, https://www.forbes.com/sites/parmyolson/2018/03/02/chatbot-spot-sexual-harassment-ai/; Stella.AI, https://devpost.com/software/safebridge.

[260] For Michigan State University's Public Incident Report page, see https://oie-msu-gme-advocate.symplicity.com/public_report/index.php/pid213903?; for SUNY's Sexual Assault & Violence Response Resources page, see: https://www.suny.edu/violence-response/.

What to make of this digital turn? At the start of every academic year, some, including popular media and campus safety officials,[261] celebrate these novel interventions as unfortunate but pragmatic and inspired tools for incoming students, especially young women, to consider. Feminist critics have been more critical. In popular media with feminist writers, such as *Feministing* and *Slate*, the emerging "cottage industry"[262] of so-called "anti-rape apps" have been heavily denounced for their misguided understanding of consent[263] disingenuous efforts to commercialize and profit from women's safety,[264] and even the possibility that these tools may protect abusers.[265] Growing academic literature on the digitization of women's safety echoes these concerns and emphasizes how the design of such tools reproduce the social imaginaries of rape.[266]

Since the initial wave of these technologies in 2014, much of this "cottage industry" of anti-rape or campus/personal safety technologies have disappeared. Those that have endured, interestingly, are reporting softwares. They provide multiple choices and open forms for users to document their experiences of sexual violence on campus and secure the records with encryption, facilitate anonymous communication with relevant authorities, and present a usable dashboard for administrators. That reporting softwares have endured is telling. When situated in the discursive context of the campus rape imaginary, reporting softwares make a series of appealing promises. Their anonymity, efficiency, immediacy, and transparency offer a promising answer to the growing anxiety around rape and credibility and institutional liability in the light of Title IX expansion that this chapter has thus far explored. Reporting applications, then, serve as a digital manifestation of the convergence of data-driven technologies and the campus rape imaginary.

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[261] Natalie Matthews, "This New App Could've Prevented My Friend's Rape," *ELLE,* April 17, 2014; Keith Button, "10 Mobile Apps Making Campuses Safer," *Education Dive*, March 21, 2014 https://www.educationdive.com/news/10-mobile-apps-making-campuses-safer/241575/; Jones;

[262] Jake New, "Pressure on Colleges to Deal with Sexual Assault Leads to Growing Cottage Industry," *Inside Higher Ed,* August 27, 2014, https://www.insidehighered.com/news/2014/08/27/pressure-colleges-deal-sexual-assault-leads-growing-cottage-industry.

[263] Reina Gattuso, "Seven Reasons Consent Apps Are A Terrible Idea," *Feministing,* May 15, 2018, http://feministing.com/2018/05/16/six-reasons-consent-apps-are-a-terrible-idea/.

[264] Tara Culp-Ressler, "Profit And Peril In The Anti-Rape Industry," *ThinkProgress*, September 10, 2014, https://thinkprogress.org/profit-and-peril-in-the-anti-rape-industry-e497c017b0ec/.

[265] Amanda Hess, "This New Consent App Is Even Scarier Than Talking About Sex," *Slate Magazine*, September 29, 2014, https://slate.com/human-interest/2014/09/good2go-a-new-app-for-consenting-to-sex.html.

[266] Rena Bivens and Amy Adele Hasinoff, "Rape: Is There an App for That? An Empirical Analysis of the Features of Anti-Rape Apps," *Information, Communication & Society,* April 11, 2017, 1–18, https://doi.org/10.1080/1369118X.2017.1309444; Deborah White and Gethin Rees, "Self-Defense or Undermining the Self? Exploring the Possibilities and Limitations of a Novel Anti-Rape Technology," *Violence against Women* 20, no. 3 (2014): 360–368.

To explore this convergence, I take LiveSafe and Callisto, pioneers and veterans in the market for campus safety technologies, as my objects of study. The next chapter investigates LiveSafe, a smartphone application with anonymous messaging and reporting features that connect the user to campus safety officials, has been adopted in over 120 higher education institutions that range from large state schools to small liberal arts colleges.[267] Chapter 4 details Callisto, a Web-based reporting application with matching feature and traumanformed interface. It may have a smaller number of campuses at twelve, but it boasts a more committed relationship from its partners who have remained loyal since the vendor's launch in 2015.[268] These chapters function as deep dives that demonstrate how designers' particular imaginaries about campus rape and technology mutually shape reporting technologies' internal logics and material arrangements.

[267] "Back to School: More than 100 Colleges and Universities Use LiveSafe," LiveSafe, January 18, 2017, https://www.livesafemobile.com/safetalk/back-to-school-2017/.

[268] "What We Do," Callisto, https://www.projectcallisto.org/what-we-do#campus

3. LiveSafe: Intuitive design for intuitive safety

From the vendor's promotional materials to campus safety training videos, there appears a recurring vignette of a woman walking alone at night. Let's call her Jane. She is walking alone at night. With her classmates long gone, she is wrapping up the final pages of her assignment at the library. As she trudges back home, she once again finds herself resenting her luck (or lack thereof) with the housing lottery. She and her suitemates had unfortunately gotten placed in the dorm farthest away from the library. Usually, she hitches a ride from a friend who has a car but tonight, she is on foot so she puts on her headphones and speeds up her pace. Halfway through, she cannot help but notice a figure walking alongside her on the other side of the street. It is too dark and she cannot see what the stranger looks like, but he does not seem like a student. He is walking funny (maybe he is drunk) and something does not feel right. Her heart starts pounding and she can feel herself intuitively cowering and tensing up, rushing her pace, and grabbing her phone to call and text anyone who would pick up. She frantically messages, "Are you up?" to her housemates, but none of them respond, understandably so as it is quite late. She thinks of calling her parents back home, but it would be the break of dawn for them. She considers calling the campus police, but this seems too minor, even though her heart is pounding so much she thinks the stranger can hear her. She has about ten more minutes to go and grabs her phone even harder in her pocket, hoping someone would message or call back.

Stories like Jane's proliferate discussions about campus safety as a familiar cautionary tale of the dangers of campus grounds and individual responsibility for (predominantly women) students. For LiveSafe, stories like Jane's does explanatory work: what happened to Jane is why LiveSafe is needed. Her panicked guesswork of frantically messaging anyone who would text back and assessing whether to call the police is what campus safety app LiveSafe aims to remove. Founded in 2013 by a victim

of violent mugging and a survivor of the 2007 Virginia Tech shooting, LiveSafe is a veteran in the market for campus safety. It has since been adopted in over 120 colleges and universities in the US, ranging from community colleges and big state schools to liberal arts colleges and the Ivy League, and the product has been expanded for use by enterprises, government agencies, and, most recently, COVID-19 contact tracing. The education-facing eponymous suite includes a smartphone application for end-users (students) and a Web-based dashboard for back-end administrators (campus safety authorities). LiveSafe's core feature, called "Tip Reporting," allows users to choose from twelve tip types (i.e., harassment, sexual assault, theft, and vandalization) to send a message with audio, photographic, or video files to campus safety authorities. Another feature called "GoSafe" connects users to share their location with trusted contacts or campus safety authorities so they can monitor a user's journey until the desired destination is reached.

LiveSafe's features—the ability to report a "tip," the request to be monitored—accommodate Jane's frantic guesswork in a state of fear. This experience of clutching her phone in a state of fear[269] is not unique to Jane. It speaks to the ways in which gender structures how individuals and institutions perceive safety in relation to space, including the campus grounds. These perceptions may or may not be reflective of actual incidents of violence, given that men tend to be most likely to experience violence crimes in public and that women's experiences of violence tend to be in private spaces. This "mismatch between the geography of violence and the geography of fear or between the actual and perceived spatial distribution of violence against women,"[270] according to feminist geographer Gill Valentine, reflects how perceptions of gender and space co-create expectations of safety. As a data-driven reporting system, LiveSafe's role in mediating student-users' experience of campus safety adds a sociotechnical dimension to how social imaginaries shape individual and institutional decisions and actions about safety.

With Jane's story in mind, this chapter takes the reporting system LiveSafe as a cultural artifact and delves into its material arrangement and the contexts of its design to uncover the app's internal logic. Combining my ethnographically informed interviews and observations of product designers and campus administrators and students with a critical analysis of the interface, I describe how the app's sociotechnical imaginary of

[269] See Cumiskey & Brewster 2012; Beaton 2015.

[270] Gill Valentine, "Images of Danger: Women's Sources of Information about the Spatial Distribution of Male Violence," *Area* 24, no. 1 (March 1992): 22.

safety emerges through the product team's understanding of personal safety as intuitive. This sociotechnical shaping of safety configures safety as intuitive and thus informational problem to which the app's intuitive design proffers a data-driven solution. The chapter begins with a brief note on why examining an app's logic offers an explanatory framework for uncovering its cultural work. I then situate intuition as a design principle in the context of human-computer interaction (HCI) to establish conventional ideas about intuition that characterizes LiveSafe product team's approach to design. The following section demonstrates, through interface walkthrough and ethnographic data, the vendor's sociotechnical articulation of safety in which uninhibited reporting is framed as an intuitive solution. I then focus on the process of designing the app's tip type screen. By comparing two competing reporting screen designs, I underscore how the product team's safety imaginaries shaped which design was seen as more effective.

Uncovering the logic of intuition

LiveSafe is characterized by its obviousness. The app's marketing materials declare that the app is an obvious solution to the problem of campus safety. My conversations with product developers and campus administrators agree: "LiveSafe just makes sense." "LiveSafe just felt right." How does a reporting app come to "make sense" as a campus safety solution? What about the app feels obvious and intuitive to its creators and intended users? My main objective in this chapter is to denaturalize this obviousness. I make the case that this obviousness is constructed through the app's logic of intuition through which its product developers understand and articulate safety. The logic of intuition captures the sociotechnical imaginaries of safety through which the vendor envisions campus safety and materializes through the app.

In order to make this case, this section first takes a moment to explain why characterizing the app's assumptions and projections as "logic" offers a useful framework. I then introduce intuition as a key design principle through which product developers understand and operationalize safety through key features and functionalities. I do this by situating intuition as a design principle in the context of software design where intuition is regarded as a universal quality. I challenge this assumption through scholarship in cultural studies that denaturalize intuition and show how it is deeply

contingent upon social relations shaped by power structures. After establishing the logic of intuition as a conceptual primer in this section, I proceed to introduce and analyze LiveSafe's material arrangement in relation to its design process.

On logic

Software applications, or apps, a kind of computer program designed "to solve particular, often singular user needs."[271] Apps do not simply serve a need; rather, they articulate and justify those needs through particular features and functionalities designed to regulate user activities. As Light et al. write, apps' material arrangements "illuminate those intentions." I characterize those intentions as driven by a logic of intuition, which I will detail throughout this chapter. For now, I explain why logic best captures the product developers' approach to design and understanding safety. By logic, I am referring to the ways in which certain ideas, values, and objects come to be known as appropriate, obvious, or natural. Examining cultural logics at play illuminates the interpretive processes undertaken by individuals and institutions through which particular norms and artifacts emerge as not only compatible, but apparent. Specifically, I am interested in how LiveSafe designers make sense of campus safety as a technological problem, and how they express this through the particular arrangement of the app. Making explicit the cultural logics undergirding digital systems like LiveSafe "illuminate[s] the material traces" of designers' intentions and demystifies "the workings of an app as a sociotechnical artefact."[272] As I detail throughout this chapter, the notion of intuition as a moment of cognition without conscious or rational thought shapes, organizes, and drives my interlocutors' reasoning of why data-driven systems "make sense" for safety.

Focusing on cultural logics as sites of meaning making aligns this project with ethnographically-driven interpretive inquiries, particularly in anthropology, cultural studies, sociology, and STS. The driving motivation for interpretive inquiries is to make visible how individuals and institutions "make sense of, or interpret, phenomena in terms of the meanings people bring to them."[273] As cultural anthropologist James Clifford

[271] Ben Light, Jean Burgess, and Stefanie Duguay, "The Walkthrough Method: An Approach to the Study of Apps," *New Media & Society* (2016): 4.

[272] Ben Light, Jean Burgess, and Stefanie Duguay, "The Walkthrough Method: An Approach to the Study of Apps," *New Media & Society* (2016): 6.

[273] Norman K. Denzin and Yvonna S. Lincoln, *The Landscape of Qualitative Research: Theories and Issues* (Thousand Oaks, CA ; London: Sage Publications, 1998): 5.

explains, how "problems" and "gaps in knowledge" are articulated is inextricably linked to the particular social actors and their embodied perceptions.[274] These perceptions, represented and interpreted through language, content, imageries, and symbols, compose how "particular aspects of the social process…but not others" become known and experienced.[275] In this regard, this chapter shares its approach to cultural logics with concepts like "discourse"[276] and "sensemaking"[277] but the choice to focus on logic is deliberate. While "discourse," "sensemaking,'" and "logic" share their analytical emphasis on interpretation as a social process, "logic" aptly underscores how some things come together and not others. Medical anthropologist Annemarie Mol's use of logic to compare two modes of patient care is especially instructive here:

> I am after the rationality, or rather the rationale, of the practices I am studying. Here the term "logic" helps. It asks for something that one might also call a style. It invites the exploration of what it is appropriate or logical to do in some site or situation, and what is not. It seeks a local, fragile and yet pertinent coherence. This coherence is not necessarily obvious to the people involved. It need not even be verbally available to them. It may be implicit: embedded in practices, buildings, habits and machines. And yet, if we want to talk about it, we need to translate a logic into language.[278]

At the heart of this chapter is this translation work of making visible the interpretive process through which particular ideas and artifacts cohere and not others.

Examining the internal logic of digital technologies has been and continues to be a crucial part of sociotechnical inquiry. In *Chasing Innovation,* anthropologist Lily Irani investigates how the logic of innovation propels individual and national initiatives for development as opportunities to be seized.[279] Information studies scholars Ribes et al.

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[274] James Clifford, George E. Marcus, and School of American Research, *Writing Culture: The Poetics and Politics of Ethnography*, School of American Research Advanced Seminar Series (Berkeley ; London: University of California Press, 1986).

[275] Lilie Chouliaraki and Norman Fairclough, "Critical Discourse Analysis in Organizational Studies: Towards an Integrationist Methodology: Critical Discourse Analysis in Organizational Studies," *Journal of Management Studies* 47, no. 6 (September 2010): 1213–18, https://doi.org/10.1111/j.1467-6486.2009.00883.x.

[276] Norman Fairclough, *Critical Discourse Analysis: The Critical Study of Language*, Second edition., Ebook Central (New York: Routledge, 2013).

[277] Karl E Weick, "Organized Sensemaking: A Commentary on Processes of Interpretive Work," *Human Relations* 65, no. 1 (January 2012): 141–53, https://doi.org/10.1177/0018726711424235.

[278] Annemarie Mol, *The Logic of Care: Health and the Problem of Patient Choice* (London ; New York: Routledge, 2008): 283.

[279] Lilly Irani, *Chasing Innovation: Making Entrepreneurial Citizens in Modern India* (Princeton University Press, 2019). Rather than logic, Irani's examination of the narratives of innovation draws from Foucault's use of ethos. Ethos describes a mode of thinking, feeling, acting, and behaving in the world as it relates to the subject's sense of self in the world. As Irani is primarily concerned with how the rhetoric of entrepreneurialism, citizenship, and innovation shapes design practices, ethos highlights how practices embody, maintain, and resist such cultural logics. While this chapter does not center on the practice of making technologies, its investigation of cultural logics shares Irani's use of ethos.

examine the logic of domains as an epistemic object that reflects and maintains computer science's disciplinary push to abstraction and universalism.[280] Taking a historical approach, feminist technoscientist Judy Wajcman traces the temporal logic of acceleration that drives not only technology use, but also the pace of everyday life from work to leisure.[281] Information historian Nathan Ensmenger similarly denaturalizes how competitive computer chess became the guiding epistemic object of AI research by underlining the convergence of chess culture and computational logic.[282]

Taking cultural logics seriously, these scholarships share three key contributions to the study of emerging technologies. First, they show how logics of computational systems cohere with particular ideologies, norms, communities, and objects (e.g., the logic of innovation with entrepreneurial citizenship in India, the logic of domains with science policy, the logic of acceleration in the gendered division of work and leisure, chess with AI research). These are neither arbitrary nor intentional. Rather, they reflect the embodied, interactive, and interpretive process in which people, practices, technologies, and power are entangled. In doing so, these inquiries highlight how cultural logics operate through flexibility. As Wajcman notes, these logics are often imprecise and incongruent, even as they find objects of coherence with confidence.[283] It is through this lack of clarity that internal logics of digital technologies propel their use and circulation in the social world as natural. Finally, these projects share the goal of denaturalizing internal logics at work in order to makes visible alternative set of norms, practices, and policies.[284]

Applied to study of softwares, especially apps, interrogating apps' internal logics surfaces the underlying assumptions, norms, and values designers encode in digital systems. In other words, digital systems operate as a value system, and sociotechnical inquiry illuminates designers' objectives and locates the particular arrangement of an app as reflective of "a mode of use to suit an agenda."[285] By seeing app design as a value laden system with an agenda, interrogating internal logics enables sociotechnical inquiry to ask how "mundane aspects of app reconfigure our ideas of what softwares can and

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[280] David Ribes et al., "The Logic of Domains," *Social Studies of Science* 49, no. 3 (June 2019): 281–309, https://doi.org/10.1177/0306312719849709.

[281] Judy Wajcman, *Pressed for Time: The Acceleration of Life in Digital Capitalism* (Chicago: The University of Chicago Press, 2015).

[282] Nathan Ensmenger, "Is Chess the Drosophila of Artificial Intelligence? A Social History of an Algorithm," *Social Studies of Science* 42, no. 1 (February 2012): 5–30, https://doi.org/10.1177/0306312711424596.

[283] Wajcman, 6.

[284] Irani, 14.

[285] Ben Light, "Ashley Madison: An Introduction to Walkthrough Method" in *Appified: Culture in the Age of Apps*, ed. Jeremy Wade Morris and Sarah Murray (Ann Arbor, MI: University of Michigan Press, 2018): 33.

should do."[286] For LiveSafe, tracing its internal logic from ethnographic interviews with product designers and its app interface reveals how the vendor thinks about campus safety.

To trace LiveSafe's internal logic of use, I conducted in-depth observations and interviews with LiveSafe employees, campus administrators, and student between 2016 to 2018. Ethnographic data was combined with a technical walkthrough of the user interface. Between 2016 and 2020, I collected screengrabs of the company's website, including press releases, white papers, and other promotional materials to inform my analysis of how the company framed its understanding of campus safety. I also took screengrabs of the reporting interfaces at three of the company's client institutions and paid special attention to the four use flows. The walkthrough method anchored my analysis so that it is empirically grounded in the material apparatus of the app and attuned to the symbols, figures, and discourse they evoke and utilize to articulate their intentions. In the following sections, I walk through LiveSafe's four main flows to demonstrate how the app operates through a logic of intuition through which safety is made sociotechnical. The product team's approach to intuitive design aims to instrumentalize the app's features and functionalities to remove what the team sees as barriers to exercising intuition. I integrate my analysis of interviews and observations with the product team to illustrate how the logic of intuition shaped the design process

On intuition

This chapter's central objective is to demonstrate LiveSafe design team's vision of safety as intuitive, and how they operationalize this through their approach to intuitive design. To do this, it is first important to define what I mean by intuition in the context of design. By intuition, I am referring to a form of decision-making that is non-conscious (or, at least, non-rational), affectively driven, and historically informed. My use of intuition in this chapter situates it as a design principle in human-computer interaction literature and practice to demonstrate how intuition is interpreted and operationalized as a universal quality. I then integrate scholarship from cultural studies to underscore intuition's contingencies shaped by structures of power. By highlighting this tension between intuition's presumed universality and its contingencies, this section offers a

[286] "Introduction," in *Appified: Culture in the Age of Apps*, ed. Jeremy Wade Morris and Sarah Murray (Ann Arbor, MI: University of Michigan Press, 2018), 6.

conceptual primer that anchors my analysis of how intuition operates as a driving logic for LiveSafe's sociotechnical imaginary of safety and approach to app design.

Literature from HCI, management studies, and STS sees intuition as a type of decision-making that emerges through an interplay of embodied cognition and subconscious registration of feelings. Intuition sits somewhere between rationality and feeling, a way of knowing "without evident rational thought,"[287] "pre-cognitive beyond awareness."[288] This quality of happening without direct cognitive awareness, which some characterize as intuition's "easiness"[289] or "effortlessness,"[290] involves familiarity and immediacy. For an intuitive action to be taken, say, swiping on an interface to move between pages, the artifact must "expose patterns underlying the rich reality of people's behaviors and experiences"[291] and these patterns must be so familiar to the user that the process of association is "rapid [and] nonconscious."[292] Take, for example, Tinder's introduction of "social swipe" in 2013 to move between profiles.[293] Tinder's haptic arrangements, which has since become the *modus operandi* of interface design, leveraged existing bodily and affective repertoire to create an intimate mode of navigating dating profiles through swiping. Pattern recognition, in this case, the idea that touching a screen can have the same effect as clicking the "next" button,[294] relies heavily on past experiences, culturally legible symbols, and behavioral repertoire as heuristics.[295] As

[287] Amy Ingram, Xiaoyu Wang, and William Ribarsky, "Towards the Establishment of a Framework for Intuitive Multi-Touch Interaction Design," in *Proceedings of the International Working Conference on Advanced Visual Interfaces - AVI '12* (the International Working Conference, Capri Island, Italy: ACM Press, 2012), 66, https://doi.org/10.1145/2254556.2254571.

[288] Haakon Faste, "Intuition in Design: Reflections on the Iterative Aesthetics of Form," in *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems* (CHI '17: CHI Conference on Human Factors in Computing Systems, Denver Colorado USA: ACM, 2017), 3403–13, https://doi.org/10.1145/3025453.3025534.

[289] Johann H. Israel et al., "On Intuitive Use, Physicality and Tangible User Interfaces," *International Journal of Arts and Technology* 2, no. 4 (2009): 348, https://doi.org/10.1504/IJART.2009.029240.

[290] Hanna E. Wirman and Ida K. H. Jørgensen, "Designing for Intuitive Use for Non-Human Users," in *Proceedings of the 12th International Conference on Advances in Computer Entertainment Technology - ACE '15* (the 12th International Conference, Iskandar, Malaysia: ACM Press, 2015), 1–8, https://doi.org/10.1145/2832932.2837008.

[291] Jane Fulton Suri, "Design Research for Radical Innovation," *Rotman Magazine*, Winter 2008.

[292] Erik Dane and Michael G. Pratt, "Conceptualizing and Measuring Intuition: A Review of Recent Trends," in *International Review of Industrial and Organizational Psychology*, ed. Gerard P. Hodgkinson and J. Kevin Ford (Chichester, West Sussex, UK: John Wiley & Sons, Ltd, 2012), 1–40, https://doi.org/10.1002/9780470745267.ch1.

[293] Rena Bivens and Anna Shah Hoque, "Programming Sex, Gender, and Sexuality: Infrastructural Failures in the 'Feminist' Dating App Bumble," *Canadian Journal of Communication* 43 (2018): 441–59; Sarah Murray and Megan Sapnar Ankerson, "Lez Takes Time: Designing Lesbian Contact in Geosocial Networking Apps," *Critical Studies in Media Communication* 33, no. 1 (January 2016): 53–69, https://doi.org/10.1080/15295036.2015.1133921.

[294] On the embodied nature of haptic interfaces, see Rachel Plotnick, "Force, Flatness, and Touch Without Feeling: Thinking Historically About Haptics and Buttons," *New Media & Society* 19, no. 10 (October 2017): 1632–52, https://doi.org/10.1177/1461444817717510; Gillian Rose, "Posthuman Agency in the Digitally Mediated City: Exteriorization, Individuation, Reinvention," *Annals of the American Association of Geographers* 107, no. 4 (July 4, 2017): 779–93, https://doi.org/10.1080/24694452.2016.1270195.

[295] HCI literature makes note of how social stereotypes play a significant role as a heuristic for pattern recognition. This point mirrors literature on epistemic injustice discussed in early parts of this thesis: stereotypes

Raskin explains, familiarity here does not require direct knowledge of product design; rather, intuition "simply means that the user is already at least partially trained with respect to"[296] a particular feature.

Intuition as a design principle instructs makers to identify and map onto users' existing knowledge and skills and to do so in a seamless way. When done successfully, the user interacts with the artifact *as if* she has encountered it before. Thus, intuitive design's core objective is to reduce cognitive barriers to taking action by creating a digital apparatus that feels familiar through rapid pattern recognition. An interface is intuitive as Raskin explains, "insofar as it resembles or is identical to something the user has already learned."[297] Intuition, then, stems from behaviors, thoughts, and feelings that are not only learned, but internalized to the point of seeming natural and obvious. The goal of reducing deliberation, then, follows from replicating existing knowledge, skills, and behavior. HCI literature discussed thus far recognizes the interconnectedness between intuition and familiarity, but the question remains how and why users become familiar with certain set of assumptions and behaviors.

Sociocultural inquiry into intuition and its related affects lends a critical analytical framework for denaturalizing familiarity.[298] Specifically, critical scholarship on the intersections of race and gender in cultural studies, geography, and sociology complicates familiarity as not only embedded in past experiences, but also structured by power relations. Returning to the vignette that started this chapter, Jane intuitively feels her heart pounding and begins frantically texting her friends upon noticing a stranger walking across from her late at night. There is nothing explicit to suggest that he is suspicious or dangerous; in fact, he may be a fellow student walking back from the library just like her. Her experience of fear at the moment, however, is non-cognitive, immediate, and embodied; she reacts even before she is aware of what she is doing, yet how she reacts appears to "make sense." Jane's reaction, according to sociologist Arlie Russell Hochschild, demonstrates the workings of emotion's signaling work. In Jane's case, she reacts with fear (i.e., heart pounding, hands shaking) upon noticing a stranger walking across from her. Fear signals a message of danger to her:

(regardless of their accuracy or social merits) and, broadly, social categories and imaginaries function both descriptively and prescriptively as sensemaking devices.

[296] Jef Raskin, "Viewpoint: Intuitive Equals Familiar," *Communications of the ACM*, September 1994.

[297] Raskin.

[298] The works discussed in this section do not necessarily pinpoint 'intuition' and 'familiarity' as the locus of their theoretical engagement. They are broadly interested in how affects, emotions, and feelings—non-cognitive but registered, felt encounters—shape subjectivities. I align my analysis of intuition and its related affects, such as fear and feeling of safety, with this body of literature

> When an emotion signals a message of danger or safety to us, it involves a reality newly grasped on the template of prior expectations. A signal involves a juxtaposition of what we see with what we expect to see—the two sides of surprise. The message "danger" takes on its meaning of "danger" only in relation to what we expect.[299]

As Hochschild explains, fear stems from a mismatch between what Jane sees with what she expects to see. Jane's past experience, her perception of the stranger, the campus grounds on which she walks, and the time of the day compose a scenario that reflects this mismatch. If the stranger is the source of Jane's unsettlement, Jane's perception of the stranger (an unidentifiable male who does not seem like a student and is walking funny) reveals her expectation that he is not supposed to be there on campus.

This expectation extends beyond Jane; as geographer Gill Valentine writes, this expectation reflects "preconceived images about that area and its occupants."[300] The scenario of a woman walking alone at night past the dangers lurking in every street corner is an all-too-familiar narrative that circulates from conversation between friends and campus orientation packets to television shows. In fact, LiveSafe echoes these narratives in their own promotional materials: the figures below portray women on their own with accompanying captions that suggest that their safety is in danger. These images in marketing materials capture how the company is in dialogue with broader cultural discourse and images about campus safety. As Valentine remarks, it matters not whether Jane herself has experienced threats on campus grounds in the past, or how legitimate her fears are. Jane's experience of fear in the moment signals dominant social imageries that portray public spaces as dangerous to women and internalized behavioral scripts that instruct women to be careful in public spaces, especially when on their own.[301] Fear, then, is not simply a physiological response; the experience of fear is, as Hochschild notes, "something we do by attending to inner sensation in a given way, by defining situations in a given way, by managing in given ways."[302] In other words, how certain

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[299] Arlie Russell Hochschild, *The Managed Heart: Commercialization of Human Feeling* (Berkerley, CA: University of California Press, 2012): *Appendix A*.

[300] Gill Valentine, "The Geography of Women's Fear," *Area* 21, no. 4 (December 1989): 388.

[301] Valentine attributes these imageries and behavioral scripts to three factors: historically informed ideology of gendered division of space; women's shared experience of public space; and media representation of crime and its sites. Victorian ideology of femininity drew a stark line of division between the public and private as masculine and feminine, and this gendered division continues to shape people's expectation and experience of occupying such spaces. Even though women's experience of violence tends to take place in private quarters, the myth of stranger danger and quotidian experience of street harassment fix the notion of the public as a dangerous space for women. Finally, media representations reproduce gendered division of space and ascribe responsibility to women who experience violence in public. See Gill Valentine, "Images of Danger: Women's Sources of Information about the Spatial Distribution of Male Violence," *Area* 24, no. 1 (March 1992): 22–29.

[302] Hochschild, 33.

feelings and bodies "come into view,"[303] as Ahmed writes, are shaped by complex histories of social relations.

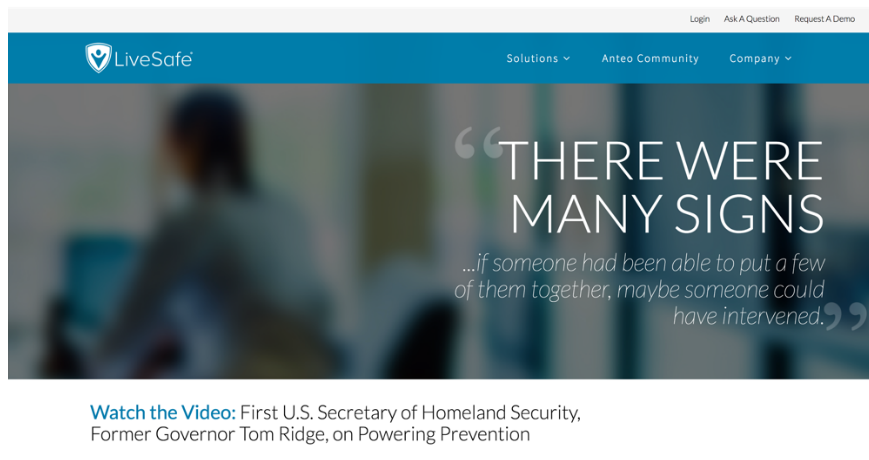

Fig. 4. LiveSafe home page. Screencaptured by author on May 23, 2018.

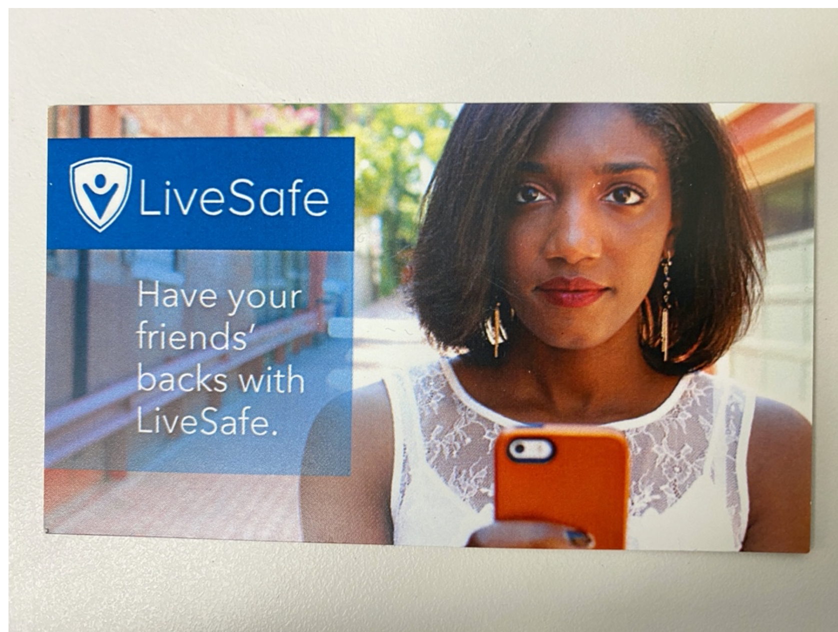

Fig. 5. Promotional poster card from a campus safety department. Photo taken by author on August 9, 2017.

Thus far, I situated intuition in the context of software design in order to highlight how it is interpreted as a universal quality. My discussion above challenged this interpretation by underscoring how the feelings, reactions, and experiences so quickly described as "intuitive" are actually informed by complex social relations that contour

[303] Sara Ahmed, *Queer Phenomenology: Orientations, Objects, Others* (Durham: Duke University Press, 2006): 14.

how certain bodies feel certain feelings. The logic of intuition can now serve as an explanatory primer for understanding how LiveSafe assumes and encodes an intuitive understanding of safety. In the section that ensues, I demonstrate through my analysis of the app's interface design and ethnographic interviews that their vision of intuitive safety is shaped by particular sociotechnical imaginaries.

LiveSafe's vision of intuitive safety

Founded in 2013, LiveSafe Inc. is a veteran in the market for campus safety technology and has since expanded to include clientele in enterprises and government agencies. The company got its start as a small startup behind a community policing app called CrimePush in 2012, but today, it is a mid-sized business with a headquarter located in Arlington, Virginia. The company and its eponymous product have undergone many changes over the years, but its theory of personal safety and the logic of intuition that propels this theory remains central to the company's mission and product design. In the following section, I sketch out the company's theory of personal safety that frames threat as ubiquitous, yet knowable, and positions digital technologies as a unique intervention to facilitate immediate reporting to the authorities. In mapping this out, I pay special attention to how safety and its threats are articulated as immediate, intuitive, and already known. The app's objective is to make visible users' momentary experiences of safety, and I apply media and communication scholar Luke Stark's term "emotive actant" to detail how it aims to translate moments of intuition into actionable insight.

Despite the company's growth from a startup behind a smartphone app to a "risk intelligence platform" across private and public sectors, the user interface's core features have not changed much.

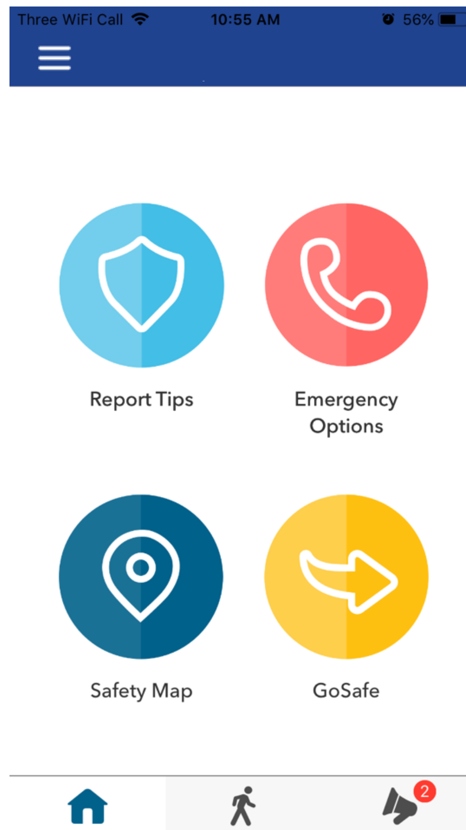

Fig. 6. LiveSafe user interface home screen. Screencaptured by author from May 23, 2018.

The LiveSafe suite connects a smartphone app for end-users and a Web-based dashboard for back-end administrators. The user-facing app, available for free download through Apple App Store and Google lay, offers four key features: (1) Report Tips; (2) emergency contacts; (3) SafetyMap; and (4) GoSafe. Tip reporting prompts users to select a tip from a list of twelve tip types. Once selected, users can submit their tip with photographs, audio, or video recordings of the incident. Emergency Options offers three channels of communication with safety authorities: call 911 and call or text campus safety authorities. SafetyMap presents a map of the campus that identifies accessibility- and safety-related. For example, the map may tag the baseball field as an evacuation site in case of fire and highlight campus safety department and local law enforcement offices. Finally, GoSafe connects users to their trusted friends or campus safety authorities when users feel unsafe in public. In addition, GoSafe's Safety Escort feature facilitates communication between the user and campus safety department to coordinate an escort who can drive or walk with the user. If the customer has partnership with rideshare platforms like Lyft or Uber, Safety Escort feature may also include a direct link to those

services. These features allow for great flexibility in adapting LiveSafe to the safety ecosystem of its clients.

Directly underneath the main menu is a horizontal tap bar, which displays three icons: a home icon to return to the main page, an icon of a walking figure to directly access SafeWalk, and a megaphone icon for the inbox. Individual communication with safety authorities and any mass emergency and safety alerts will enable a notification alert on the megaphone icon. The vertical menu bar on the top left-hand corner usually contains five to six options, which includes three standard options (e.g., "My Activity," safety information specific to the campus client, and settings).

"My Activity" displays any tips submitted or communication with safety authorities. Safety information links to the campus client's safety website, which includes a wide range of information, such as hours of operation, latest safety updates, and hyperlinks to other safety resources, such as the Title IX Office. Finally, settings options direct the user to a page that displays app information, Terms of Use, and Privacy Policy. The remaining options reflect the client's safety priorities and concerns. Consider how the image on the right displays "Bias Incident Reporting" as an option; bias and harassment reporting is one of the options in "Report Tips" feature, but the client requested that it be isolated and emphasized as a direct option in the menu bar. In the discussion chapter, I return to this to examine how safety authorities' perception of safety threats reflect broader cultural discourses.

Intuitive safety

LiveSafe's features and functionalities are relatively simple, and this simplicity embodies the company's vision of safety. In this section, I consider LiveSafe's product development since its early days as CrimePush to illustrate the sociotechnical workings of safety imaginaries that shape the vendor's understanding of safety. To LiveSafe, safety is a personal responsibility that can be accessed through data-driven technologies designed to enable and optimize our intuitive responses to safety concerns.

Founded in 2012, CrimePush was a response to one of the founders, Shy Pahlevani's own experience of violence crime and designed as a community policing tool. Pahlevani was held at gun point and had his car ransacked twice in his otherwise pastoral Capitol Hill neighborhood in Washington DC. In all three incidents, the offenders got away. Pahlevani, along with his brother and friends, developed CrimePush

to "make the job of the police easier"[304] by expediting the reporting process through the use of digital technologies. To do this, CrimePush offered four functions: (1) incident reporting to the police; (2) distress messaging to emergency contacts; (3) a display of Google Map with geotags for safety-related places, such as the gas station; and (4) flashlight. CrimePush patented the multi-channel technology that enables the first feature to collect and submit a report with audio, video, and/or photographic evidence. Deployed at the height of app production and circulation,[305] CrimePush had more than 100,000 download count and partnership with 56 police departments and 10 universities[306] just six months into its launch.

Just a year later, Kristina Anderson, the "the most injured survivor"[307] of the 2007 Virginia Tech shooting, was brought on board as a co-founder and the startup made an official pivot to campus safety under the name LiveSafe. CrimePush's transition to LiveSafe, according to the one of the co-founders Mansur, was an "innovative" and "intelligent path," though not without obstacles. During this transition, the company moved from community policing to campus safety while maintaining the mission to "make the job of the police easier"[308] and rhetoric of intuitive reporting. Mansur recalls the challenges of navigating police bureaucracies and onboarding local officers to the system. "We quickly realized [that] working with municipalities [was] going to be a slow nightmare" due to stringent procurement procedures. Beyond the bureaucratic hurdles, Mansur and his colleagues found law enforcement authorities skeptical, if not outright opposed, to the possibility of app-driven reporting. Higher education, on the other hand, created a natural user base. University and college students, as digital natives, were already using smartphones to communicate. Campus safety authorities embedded in students' everyday lives on campus were also much more receptive to the notion of digitally facilitated reporting systems. As Mansur recounts, "We really had to create a market…We found some police chiefs who were innovative enough, who got it, and they were rare, but they saw the future, they were police chiefs who really understood where the trends were going and they really understood their students." By January 2017, LiveSafe had clients in higher education, including large state school systems,

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[304] Mohana Ravindranath, "Reporting Crime to the Nearest Police Department, from a Smartphone App," *Washington Post*, September 28, 2012, https://www.washingtonpost.com/business/on-small-business/reporting-crime-though-a-smartphone-app/2012/09/27/4285f2ee-07fc-11e2-858a-5311df86ab04_story.html.

[305] Jeremy Wade Morris and Sarah Murray, eds., *Appified: Culture in the Age of Apps* (Ann Arbor, MI: University of Michigan Press, 2018), https://www.press.umich.edu/9391658/appified.

[306] Ibid.

[307] "About," LiveSafe Inc., accessed May 23, 2018, https://livesafemobile.com/about.

[308] Ravindranath.

community colleges, and private four-year institutions, and even included a handful of K-12 schools and districts.

Tracing LiveSafe's current iteration in its history as a community policing system illuminates how the company makes sense of safety and its threats by conceptualizing danger as ubiquitous, knowing as a preventative strategy, and digitally mediated reporting as actionable solution. The founders' own experience of violent crimes is foundational to the company's underlying assumption that everyone is susceptible to danger. CrimePush founders envisioned it as a community policing tool for emergency reporting. As one of the co-founders Shamir Mansur explained, "We envisioned that app to be very community-policing tool, you know, report issues from your neighborhood, go to your local police departments." By the time Anderson was brought on board, CrimePush's emergency reporting became a more generalized "tip" reporting; the nomenclature changed, but the company and its products continue to see each data point as indicative of a crisis at hand or about to materialize. Exceptional circumstances, like Pahlevani's experience of violent mugging and Anderson's survival of school shooting, can expose gaps and malpractices in governing safety.

However, when such apocalyptic cases operate as reference points, as LiveSafe does, the system equivocates a wide range of safety concerns, from vandalism to flashing, as equal data points. To LiveSafe dashboard, submitted tips become equal data point: a report of stolen bike is one data point as is an observation of a bar fight. For Pahlevani, his experience serves as a mental model through which data-driven interventions like LiveSafe emerge as an apt solution. He sees his experiences as an unfortunate but preventable outcome of an inefficient reporting system and thus identifies reporting as a site of actionable intervention. There is no question that law enforcement is the indisputable safety authority, even though his interviews suggest that part of his frustrations rest with his interaction with law enforcement. Instead, he locates the problem in inadequate channels of reporting that hinder safety authorities' ability to respond on time—ideally, in advance. This model of personal safety is then applied across different safety issues. The objective, then, is to expedite how information about safety travels from persons being affected to the responsible safety authorities.

This universalizing approach obfuscates everyday experiences of safety, while constantly relying on and reproducing exceptional stories to justify its purpose. During the app's early days as CrimePush, Pahlevani's experience and, during its current iteration as LiveSafe, Anderson's survival of school shooting legitimate the app's

necessity. These exceptional stories serve as epistemic function: they bestow "a false sense of knowing by locating harm and danger onto discrete bodies and stories."[309] These stories give epistemic purchase to the app and reconfigure safety as an informational problem. As Anderson explained in one interview, "People have knowledge or information, but they're not speaking up, and that's not acceptable because that information can prevent school violence."[310] Anderson's 2014 speech at the University of Washington Tacoma illustrates this rhetoric of knowing as a preventative strategy. After recounting her terrifying experience of barely surviving the 2007 Virginia Tech shooting with the audience, Anderson makes the point that school-based attacks are rarely random and that they are usually preceded by a period of planning. It is at this stage that attackers tend to leak information or share details with those around them. Anderson remarks, "There is a clear timeline…and they tell people. That, to me, is hope."[311] This notion that critical information is "out there," waiting to be acted on is a crucial rhetoric for LiveSafe. If information exists "out there," the possibility of prevention rests in ensuring that such information is delivered to the right people in advance. "Surfacing the issues that may not be surfaced or may not have been surfaced earlier," as Mansur explains, thus emerges as a prevention strategy for all types of safety concerns.

The founders saw digitally mediated reporting as a unique opportunity to not only facilitate immediate action, but also deliver insight to safety authorities. Even as the company expanded its scope from emergency response to tip reporting, the company's mission to "make the job of the police easier" remains integral to their vision of safety. The logos of CrimePush and LiveSafe embody this commitment to law enforcement as indisputable safety authorities:

[309] Joseph J. Fischel, *Sex and Harm in the Age of Consent* (Minneapolis: University of Minnesota Press, 2016), 75.

[310] Mohana Ravindranath, "Reporting Crime to the Nearest Police Department, from a Smartphone App," *Washington Post*, September 28, 2012, https://www.washingtonpost.com/business/on-small-business/reporting-crime-though-a-smartphone-app/2012/09/27/4285f2ee-07fc-11e2-858a-5311df86ab04_story.html.

[311] UW Tacoma Extended, "Response to Campus Shootings: Kristina Anderson," YouTube, 42:07, April 29, 2014.

Fig 7. Left: home screen icon for CrimePush. Screencaptured by author from https://gust.com/companies/crimepush. Right: home screen icon for LiveSafe. Screepcaptured by author from August 17, 2020.

Against a blue background framed in metallic silver outline is an icon of a shield which holds the letter C for CrimePush at the center. On the top of the shield is a figure of a police officer, symbolized by a police hat. LiveSafe's current logo is stripped of the more explicit visual cues to law enforcement, but the shield remains intact. The personified icon may no longer wear a police hat, but the company's preventionist paradigm in which law enforcement and its equivalent, such as the campus safety department, features prominently as the indisputable safety authority persists. As the remainder of this chapter shows, reporting to non-law enforcement authorities like the Title IX Coordinator and mental health counselors have been added in response to student demands. However, the company sees these diversified reporting options as custom features that complement the core function of automatic reporting to safety authorities.

The mission to align with the law enforcement established a clear direction for information flow from users to safety officials; how, then, should this information be delivered? In the context of campus safety, the company identified students' hesitance to report as the main obstacle and sought to remove barriers to reporting by simplifying the process. Mansur referred to this barrier as a "gap" to be rectified through digital communication:

> Students have this weird intimidation factor when it comes to safety officials. Safety officials have to straddle this fine line in being the protectors and presenting a strong image, but they also have to be open...so what we allow is, we understand that most people want to do the right thing, so by making it easy for them to do the right thing and by allowing them to be anonymous at the same time, we can really harness that crowdsourced power and let them submit information.

> […] the only way we can do that is to really understand how both sides of [reporting] works so that we can bridge that gap most effectively.

Mansur and his co-founders saw students' hesitance as a product of being intimidated by safety officials, and designed for anonymity and simplicity in tip reporting to lower the barrier to report. Reporting through an app was thus seen as an indirect, reliable, and "seamless"[312] means of reporting, unlike the "traditional" route of speaking on the phone with safety authorities.

Founders, product developers, and campus administrators alike saw this move from direct (calling safety authorities) to indirect (through apps like LiveSafe) as an intuitive transition that would optimize existing student behavior. The vocabulary and symbolism of "leveraging" and "lightening up" the human body express the stakeholders' sociotechnical imaginaries about technology's ability to optimize human behavior. According to Mansur, the app is an intuitive solution to the problem of non-reporting: "What if you just reported through the app, that way, you're actually leveraging behavior they're already doing, you're actually guiding it towards a constructive end." Another LiveSafe employee similarly described the app as a digital solution designed to "leverage [students'] eyes and ears on the ground to collect intelligence from the community and crowdsource it to address potential risks or threats." Upon announcing LiveSafe adoption, the Executive Vice President and Chief Financial Officer at the Arizona State University declared, "It is logical that we would leverage emerging technology to continue to enhance our commitment…to personal and public safety."[313]

LiveSafe expresses the notion of optimizing human behavior through the vocabulary and symbolism of light. "[LiveSafe is] designed specifically to light up dormant human sensors."[314] In describing the body as a set of sensors made dormant through inactivity, the company makes the assumption that the body already possesses the ability to act on safety threats. In the following sections, I return to this idea of the dormant body to illustrate how LiveSafe aims to epistemically mediate felt experiences of danger as actionable safety insights. Elsewhere throughout the website, the product

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[312] Joseph Coombs, "LiveSafe: Meet the Company Working to Bring Public Safety to Your Smartphone," *Washington Business Journal*, September 25, 2017, https://www.bizjournals.com/washington/news/2017/09/25/livesafe-meet-the-company-working-to-bring-public.html.

[313] Wendy Craft, "Safety Resources at Your Fingertips with New ASU LiveSafe App," *ASU Now*, August 20, 2014, https://asunow.asu.edu/content/safety-resources-your-fingertips-new-asu-livesafe-app.

[314] "The LiveSafe Platform," https://www.livesafemobile.com/solutions/platform.

uses the language of "lightening up" to describe its features. The user interface visualizes this language by deliberately using the color yellow, associated with light, to accentuate call-to-actions (CTAs) or draw attention to key functions:

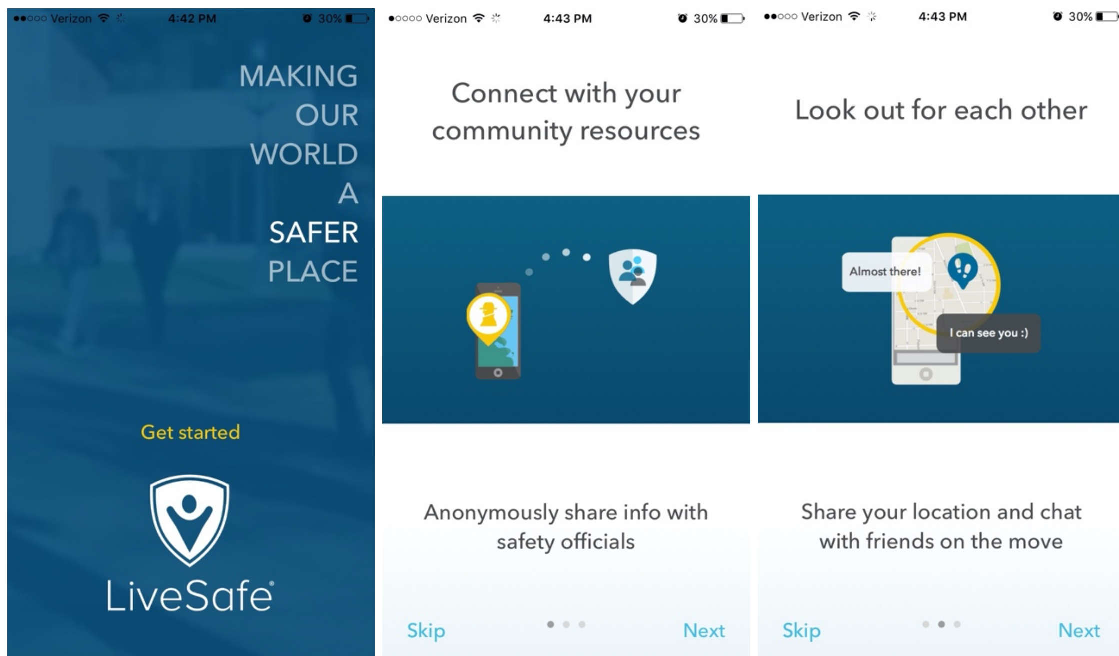

Fig. 8. LiveSafe mobile set-up screen. Screencaptured by author from August 9, 2017.

The screencaptures above are taken during registration. In all three images, color palette is used deliberately to draw attention to a CTA or emphasize a function. The very first image displays a CTA to start the registration process in yellow against the blue background on which a translucent image of a campus plaza is displayed. The next two images describe core features, such as anonymous real-time communication with local resources and a GoSafe feature to share location data with trusted contacts. Both images use the color yellow to highlight crucial aspects of each feature: a yellow geotag to symbolize user's information and a yellow circle that magnifies the user's location. Closely following the onboarding instructions in this way underscores how the app's internal logic shapes and is stabilized through the app's symbols, vocabulary, and features that frame the app as an instrument for optimizing what the body intuitively knows: the desire to report.

The vendor's vision of intuitive safety thus creates a framework through which it identifies LiveSafe as an informational tool. As one participant explained:

> …a report is a report, and it can be either confidential or non-confidential. At that point, it's up to whoever the receiving entity is to follow their process and procedure to file it however they wish. We look at ourselves

> as reporting vehicle. We're basically relaying information from one point to another point, but we don't characterize it beyond the characterizations that the user has included in the app, whether it's what report they want to file it under or if they want to be anonymous.

My argument throughout this chapter is that LiveSafe does more than simply delivering information. Information systems are rarely a neutral tool for delivering information. The app operates as an epistemic mediator that converts intuitions about safety into actionable insight, and this is made possible through the vendors' sociotechnical imaginaries about safety. This is what media and communication scholar Luke Stark term "emotive actant,"—technologies that "conver[t] embodied emotional expression into computationally legible numbers, words, and symbols…[they] reproduce these computational logics as mediating models through which individuals reinterpret and re-present their own subjective feelings."[315] When reporting through the app, users' momentary feelings about safety, however legitimate or fleeting they may be, equip campus safety officials with the authority to act those reports as actionable insight. Conceptualizing LiveSafe as an emotive actant investigates how digital technologies and their particular apparatuses mediate the felt and sensed human experiences and underscores the normative consequences of formatting human experiences "into structures of digital computing."[316] Stark's term is helpful for taking LiveSafe's epistemic work seriously. Even as the product vendor insists on the app's purely informational functionalities, paying attention to how the app, through its safety imaginaries, evokes and attunes to emotion states like fear and anxiety illuminates how the app's logic of intuition hides and naturalizes its cultural work. In the following section, I examine the app's design process to demonstrate how the product team's safety imaginaries shape and are encoded in the team's design practices.

Designing for intuition

The logic of intuition not only captures how the vendor understands safety; it also serves as an operating principle for product design. In this section, I draw from my ethnographic interviews with LiveSafe employees, including designers, implementation managers, and product managers, to examine the company's design approach and process. Specifically, I examine how designers employ fear categorization as a

[315] Luke Stark, "Affect and Emotion in digitalSTS," in *DigitalSTS: A Field Guide for Science & Technology Studies*, ed. Janet Vertesi and David Ribes (Princeton, NJ: Princeton University Press, 2019): 122.

[316] Ibid., 123.

methodology and eventual interface layout to operationalize safety. By considering alternative interface design the product team considered and the reasoning behind current arrangement, I shed light on how the designers understand behavior as transcendental of social identities. This fixation on behavior as divorced from its context underpins the company's approach to intuitive design. Thus, the notion of safety as intuitive outlined in the previous section inform and is embedded in their design process to create a digital system for intuitive reporting.

As a system designed to facilitate reporting, LiveSafe's design objective is to remove deliberation. The Chief of Police at University of Tennessee's statement about LiveSafe adoption is illuminating here. He attributed students' lack of engagement with law enforcement as a result of uncertainty and confusion; students just did not know who to report to or how to report. "Which may sound simplistic, but I've heard it too many times to dismiss it…And this [LiveSafe] just takes that guesswork out of the equation."[317] By simplifying the reporting experience as tip reporting, LiveSafe's goal is to reduce, if not remove, the guesswork of assessing whether to report. In the founder's words, "If you create a tool that's easy, accessible, and intuitive for the student that's a very low lift for them." Rendering the reporting experience intuitive thus serves as an operating principle for interface design.

PRODUCT VALIDATION: "GOOD ENOUGH"

To operationalize intuitive reporting as a design concept and methodology, the senior designer described the company's initial design process in two "buckets": concept validation and design validation. Concept validation tests the product's legitimacy in the market and design validation assesses whether a particular material manifestation of the concept maps on to user behavior. As such, both phases of product validation constitute an iterative process of interpretation and representation. Here, I turn to critical management scholarship on market research as a useful analytical framework for examining each validation phase as an interpretive project of knowledge formation. According to Diaz Ruiz and Holmlund, market research is an interpretive project through which market researchers' interpretations of social phenomena get "stabilized as facts"

[317] Erica Breunlin, "University of Tennessee Debuts New Campus Safety App," *KnoxNews*, December 16, 2019, https://www.knoxnews.com/story/news/education/2018/11/06/utk-safety-app-livesafe-campus-security/1892130002/.

to inform and permit market action for their clients.[318] As goal-oriented research with the explicit aim to guide clients into action, market research is not only descriptive, but also prescriptive and consequential—it serves to produce consequences, in Argyris's words.[319] Thus, market research analysis and recommendations are mutually constitutive: market research "constrain[s] interpretive flexibility by providing an intended reading" in service of desired recommendations.[320] Design research and market research share much in common as analytical processes that translate knowledge into actionable recommendations. Throughout this translation work, the role of data imaginaries is crucial. I pay special attention to the data imaginaries evoked during different phases of product validation—quantitative data for concept validation and qualitative data for design validation—to justify design research and permit design choices.

After nearly a decade in the market for campus safety, LiveSafe's design is on autopilot. Its campus safety app has become a template on which products for other verticals, such as government and enterprises, are based. The design team has found a smooth balance of collaboration with implementation and product management teams: the design team is responsible for the technological and design aspects of the product, the implementation team oversees the product's onboarding process into clients' safety and information ecosystem, and the management team executes the business side of the contract. During the company's early days, however, the app's interface and organizational divisions of labor paralleled each other in their lack of clarity and direction. It was through a two-phased product validation process that the startup established not only its product, but also vision and organizational model.

The senior designer explained product validation as a process entailing two "buckets"—concept validation and design validation—that, together, sketches a rough outline of what the product will look like and sets the direction for marketing, implementation, and expansion to follow. Concept validation aims to assess whether the design vision in mind is appropriate and acceptable for the market. In the participant's words, "Are we on the right track with regards to the offering itself…does the idea hold water, are people even going to use this concept?" The product being designed may be

[318] Carlos Diaz Ruiz and Maria Holmlund, "Actionable Marketing Knowledge: A Close Reading of Representation, Knowledge, and Action in Market Research," *Industrial Marketing Management* 66 (October 2017): 172, https://doi.org/10.1016/j.indmarman.2017.08.005.

[319] Chris Argyris, "Actionable Knowledge: Design Causality in the Service of Consequential Theory," *Journal of Applied Behavioral Science* 32, no. 4 (December 1996): 309–406.

[320] Diaz Ruiz & Holumlund, 176.

technically feasible, but there must be a justification for the product to exist in the first place, and it is this justification that concept validation scopes out. The senior designer used the example of connecting LiveSafe with a rideshare platform to demonstrate how concept validation works. If the concept being validated is integration with a rideshare platform, the objective of concept validation is to evaluate the extent of the demand for such a feature: how many students are likely to request rides, what time during the day are these requests likely to take place, and which areas on campus? The scope of these questions embodies concept validation's reliance on quantitative data to provide justification:

> You can run the numbers and you can do the checking on that, usually, sometimes without even talking to students. You definitely should talk to students, but looking more at the market for the idea than in the concept […] There's a lot of concepts that we tested: the concept checks out, and there's definitely a need for it, there's definitely numbers for it.

In other words, a successful concept validation is one that yields concrete numbers that permit the concept to materialize into design. This reflects what sociologist Beer describes as the distancing role of quantification. Quantification creates a "critical and objective distance from the object that is being judged and the decision that is then being made" from the user so that those decisions "appear hyper-rational, fair, and indisputably logical."[321] For LiveSafe, the numbers validate the concept; creating a data-driven reporting system is a relevant, necessary, and intuitive conclusion in the market for campus safety.

During my interviews, I was unable to access precisely what kind of data the design team used for their concept validation. Instead, they referenced the company's white papers as reflective of their design approach. The company's white paper on campus sexual assault is an especially illuminating example of how concept validation may turn to quantitative data to permit product development. The white paper, based on the company's internal research during the academic year 2014-2015, is titled "Reexamining strategies to address sexual assault on campus: Research and recommendations on a comprehensive approach."[322] It begins with three paragraphs that list statistical figures after figures, all coming from the oft-cited Department of Justice

[321] David Beer, *Metric Power*, 1st ed. 2016 edition (Palgrave Macmillan, 2016): 137-138.

[322] "Download "Reexamining strategies to address sexual assault on campus,"" LiveSafe, accessed May 23, 2018, https://www.livesafemobile.com/safetalk/sharing-new-white-paper-reexamining-strategies-address-sexual-assault-campus/.

commissioned sexual victimization survey in 2000.[323] These figures state the following: that the vast majority of assaults have a known offender, that campus sexual assault is most likely to occur during the first six weeks of the fall semester (known as the "red zone"), and that only a small portion of the assaults are ever reported to law enforcement. The final paragraph in the introduction section reads, "This alarming data has served as a catalyst for action in the field of campus sexual prevention." This statement succinctly captures how the very existence of statistical figures is used to justify taking action.[324] For LiveSafe, the unquestionable prevalence of campus sexual assault, as exemplified by statistical figures, sufficiently permits the concept of a data-driven reporting system to materialize as a product.

Following concept validation, design validation begins. The designers test out whether a particular material arrangement of the concept reflects target user base's behavior. This is where the concept travels "from pen to paper" and analytical paradigm transitions from quantitative to qualitative. The designers now know that the concept "will work"; the task, now, is to figure out "how it's going to play out."

> […] you can actually use th[e] basic concept to test [product] usability. Get it as good as possible so people understand, you give them a task and they do it without any instructions; you give them a task, they get through the application as quickly as possible. You basically take the concept you already know will work but you don't know how it's going to play out. Then you use your testing with whoever you can get access to basically refine the concept more from a more pure user experience or pure interaction design perspective.

Design validation thus emerges from and through an iterative and collaborative process involving the product design team, implementation team, often outsourced engineers, and recruited user testing participants. As an iterative process, designers turn to qualitative methodologies, such as interviews, surveys, and interface walkthroughs, to evaluate design choices. Consider, for example, the inclusion of mental health-related resources in the interface. According to the designers, the previous interface did not include mental health-specific resources. However, conducting user testing with the target user base informed the design team of the value of adding such resources. The

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[323] Bonnie S Fisher, Francis T Cullen, and Michael G Turner, "The Sexual Victimization of College Women" (US Department of Justice, Office of Justice Programs, National Institute of Justice, December 2000), https://www.ncjrs.gov/pdffiles1/nij/182369.pdf.

[324] LiveSafe has a number of white papers on other campus safety issues, including safety for K-12 schools and, most recently, re-opening the campus in the age of COVID-19. These papers employ similar rhetorical strategy of frontloading the paper with prevalence figures so that its existence serves as a justification for LiveSafe adoption. See https://www.livesafemobile.com/whitepapers/.

target user base, which designers identify as young smartphone users between the ages of 16 to 25 enrolled in an academic institution, repeatedly mentioned mental health-related concerns as a primary safety concern. Today, the user interface includes a direct link to campus-specific mental health resources in the vertical menu bar.

Unlike its quantitative predecessor, design validation posed a challenge of data saturation: how would designers know when they have collected enough data? This question reflected the designers' implicit assumption that quantitative data is incontestable while qualitative data acquires accuracy through accumulation. To determine how much qualitative data was needed to validate design choices, the design team operated on the principle of "good enough," a notion that approximations and proxies are sufficient forms of qualitative data. There was no concrete threshold for how many user tests and how much participant feedback was needed to validate design choices. The lack of a clear threshold is demonstrable of how the data collected during design validation aims to "provide an intended reading,"[325] rather than illuminate user behavior.

The team's user testing design reflects how this threshold of "good enough" informed participant recruitment and data analysis. According to the design team, user testing is a crucial component of product validation, an opportunity to "refine" concept and product design. Designers relied heavily on popular online market research platforms, such as usertesting.com and respondent.io, to recruit participants. Platforms such as these operate as a marketplace that matches firms with relevant respondents. For LiveSafe, the ideal target user base was young smartphone users between the ages of 16 to 22 enrolled in an academic institution. Given the age limitations of such platforms, designers specified young people between the ages of 18 to 22 as recruitment criteria.[326] On the rare occasions the company has access to in-person user tests, they rely on existing

[325] Diaz Ruiz & Holumlund, 176.

[326] I reached out to both platforms to request demographic breakdown of its respondents, but they declined to provide demographic information. Based on how my interlocutors talked about the platforms, my information email and in-person exchanges with platform representatives, and my interpretation of the platforms' marketing materials, it is safe to assume that white, male, and college-educated individuals compose the majority of respondent population. This partiality in recruitment is significant because it demonstrates how the perspectives considered to inform initial product development are, in fact, partial. For scholarship on how demographic partiality is encoded into product design as universalizable insight, see Sasha Costanza-Chock, "Design Justice: Towards an Intersectional Feminist Framework for Design Theory and Practice," in *Design Research Society 2018*, 14; Christina Dunbar-Hester, *Hacking Diversity: The Politics of Inclusion in Open Technology Cultures*, 1st edition (Princeton University Press, 2019); Lilly Irani et al., "Postcolonial Computing: A Lens on Design and Development," in *Proceedings of the 28th International Conference on Human Factors in Computing Systems - CHI '10* (Atlanta, Georgia, USA: ACM Press, 2010), 1311, https://doi.org/10.1145/1753326.1753522.

campus partners to provide test subjects. “A lot of the times, police will have a group of students they work with a lot, and they’ll look to for help. There might be a campus safety student representative, or the president of the student government.” Accessing these participants is not only a choice of practical constraints and convenience, but also reflects how the methodological principle of “good enough” works.

User testing then begins with the question, “Have you experienced something like what we’re researching in the past?” The designers acknowledged that it would be unethical to inquire whether individual respondents had experienced any threats to safety in the past. In light of this ethical challenge, asking this question was expressed as a necessary means of delineating true accounts of safety behavior from projections. It appeared to me that most user tests are of the latter type:

> it’s hard to know if there is a disconnect because people usually are using it, god forbid, you can’t simulate a situation of distress and say, “Now use our application,” you can’t simulate a situation of mental duress and “Use our application,” or you can’t simulate being trapped in a building and it’s possibly on fire, so use the application […] we ask people to imagine you’re in this situation, imagine this might be something.

> people look at your application and they think, “why would I ever use this,” they’re never going to come back into the app, and if you get them back into the app, have you designed it in a way that they say, “I’m now in a time of need, this is a crisis form of communication and I need to make sure my information gets to where it goes.”

In the absence of those who have had direct experience with safety concerns, the design team turns to those who are able to “imagine” being in similar situations. Imagining being in similar situations is, in other words, good enough of an approximation of people’s safety behavior. User tests are thus designed to encourage participants to imagine how they would behave in various scenarios involving safety threats. This may be a practical solution to the ethical and recruitment challenges of designing user test for a safety reporting system. As my analysis in the following sections demonstrates, this method of approximation carries repercussions as individuals’ perception of how they may react to safety issues, such as earthquake and campus shooting, are deeply embodied. How people behave in moments of grave danger embodies not only their past experiences, but also structures of age, sexuality, and race through which certain social acts appear permissible to some bodies and not others.

Thus far, I examined how the LiveSafe design team articulates the two phases of product validation in order to underscore how each phase looks to different forms of knowing to interpret safety-related phenomena in service of product validation. Quantitative and qualitative data, while subject to different expectations of sufficiency (the former self-sufficient, the latter through accumulation), construct the data imaginary that gives permission for each phase of validation to progress. Validation, in short, is a process that requires just "enough" data to permit designers to move on. In the next phase of product design, I show how this approach to design as a process of identifying and meeting the lower limit enmeshes with the company's model of intuitive safety to create an intuitive interface for tip reporting.

DESIGNING FOR THE LOWEST COMMON DENOMINATOR

The previous section illustrates how data imaginaries justify and permit product validation to progress. A recurring theme is the notion of "good enough" that enables different forms of data to operate as self-sufficient ways of knowing for each phases of product validation. This notion of "good enough" extends to the company's design approach taken during user testing. With "enough" data collected and analyzed during product validation, the process of creating, developing, and testing prototypes that would eventually become the LiveSafe app follows what I describe as "lowest common denominator" (LCD) approach. The founder, who used to lead the design team, described it in this way:

> From the product side, it's understanding the issue areas so we can look at all these issues, put them all on the wall, and say, "Okay, how are our features addressing each and every one of these areas, and what are the common themes, what are the common response mechanisms, and how do we create a solution that best addresses all of these in a holistic ways." We're looking for common denominators and not necessarily the outliers and we'll take into consideration the outliers or the one-offs. But, really, we're building for a solution that can address the majority of the needs.

This idea that there is a set of discrete common denominators in human behavior is leveraged to inform design choices. For the remainder of this chapter, I recount how this LCD approach manifests through the design process. I begin by outlining how the design team understands and expresses LCD as a set of universal, behavioral common that unites all users. Social differences and differentiations are cast aside in search of a behavioral constant for which design choices are made. Next, I recount how the LCD approach to design played out in practice by examining the alternative reporting layout the company

considered. While LiveSafe never implemented this alternative layout, comparing the differences in each design's internal logic and intended user and tracing how and why tip type screen reporting ultimately stabilized as the main feature illuminates the company's LCD approach to design.

Detecting the "lowest common denominator"

Following product validation, designers outsource the technical work of putting together the app interface to engineers and user interface designers. After a number of back and forth with contracted workers, LiveSafe's designers conduct user tests to assess the prototype's usability. The vast majority of user tests rely on online research platforms for recruitment; on the rare occasions they can access human subjects, they snowball sample from existing or likely clients to recruit current students.

From the moment of recruitment, the question of social differences emerges. One designer remarked on the difficulty of investigating safety behaviors when safety is such a subjective and nebulous concept: "Safety to a 22-year-old male who is 6'3" who weighs 200 pounds means something very different to a 17-year-old female who is 5'2" who weighs just shy of 100 pounds. A lot of differences there." Similarly, in one student newspaper, prospective users alluded to gender as a significant factor that would inform a user's decision to use LiveSafe. Simphany, a sophomore majoring in therapeutic recreation at University of Tennessee, was enthusiastic about her university's adoption of LiveSafe. She already took precautions for her safety by traveling with a group of friends and frequently taking campus transportation to avoid walking on her own. While Simphany was enthusiastic, David, a junior in psychology, was skeptical of the product's efficacy because, "I can hold my weight."[327] Both students' understanding of their safety relied heavily on gender. As a woman, Symphany was conscious of what it means to occupy public spaces alone and took some precautions for her safety. For David, his physique insured his safety: his ability to "hold his weight" liberated him from having to worry about the repercussions of navigating public spaces. Another designer echoed such observation:

> I've observed some clear differences in females and males, like females tend to be generally more safety-conscious in that, our feature SafetyWalk would value that. There are some males that value that too, but to generalize, there are some that don't see the value in it, just bc by nature,

[327] Breunlin.

> females tend to be a little bit more of a target, so it's something more on top of their mind. So I guess I try to look at behavior more broadly.

Gender and size thus surface as meaningful categories that influence students' understanding of safety and how they would behave accordingly.

Yet, in user testing, these differences are set aside in favor of a behavioral constant. In the senior designer's words, "What is the lowest common denominator that someone will perceive as threatening act." This search for the lowest common denominator reflects not only the practical constraints of conducting design research for a startup, but also the company's epistemic paradigm in which behavior transcends social categories, such as gender, race, and size. In turn, this investigation for the lowest common denominator enables the researchers to generalize from their findings:

> I try to take as much guesswork as I can from my design process. I basically look at it as knowns and unknowns, to that point of generalizable versus customizable…For generalizable, you have to have enough knowledge of how the general population is going to use it to know, "Here are the rules of the road, and here are the ones we're not gonna break."

The lowest common denominators thus become the "rules of the road," a behavioral constant found across different bodies. Social categories may be acknowledged as potential factors, but are cast aside as minor, if not, irrelevant. Designers harbor the assumption that there is a set of universally constant behavioral repertoire that unites different subjects and, in doing so, transcends their differences in identity. This assumption followed because safety is a universal virtue, desired and valued by all, regardless of their age, gender, race, and size. This rhetorical feedback loop forms a paradigm in which behavior is disembodied and isolated from their social context in service of an imagined user unmarked by social categories. As I argue later, this imagined user is not only nonexistent, but also far from unmarked.

A crucial assumption undergirding LiveSafe designers' approach to user testing isolates behavior from what they term "demographics," social differences such as age, ethnicity, gender, race, and size. By placing demographics and behavior in parallel, the designers see behavior as a universal quality shared by people regardless of their identities. Consider this user experience (UX) researcher's articulation of behavior:

> I've noticed how people react differently depending on where they are, who they're with, if they are alone or they're with people, if they know the person, that's like either the perpetrator or the victim in a situation and I say that, they could just be yelling at each other and not anything serious.

> They may react completely differently, regardless of their age, gender, or anything. So I've been more focused on, like the type of reaction or response based on the situation, rather than their individual demographics.
>
> In general, we focus on behavior since we're safety-minded…when something happens, or when something suspicious-looking is happening, people tend to behave similarly…or feel similarly. So for example, maybe you see someone, thinking of campus example, you see someone strange like walking on your campus, when in a woman's college, like I see a strange man walking on campus, he doesn't look like he belong, then I might feel like, "Oooh this doesn't feel right, I'm gonna behave a certain way." As opposed to someone else who sees that, they may behave the same way I do, regardless of if we're same ethnicity or age. That's what I mean.

I want to draw attention to how this UX researcher frames behavior and demographics as distinct yet parallel qualities. In both excerpts, she remarks on how demographics and other circumstantial factors, such as the presence of others and the observer's positionality as a victim or a perpetrator may contribute to how people react to safety concerns. That people may react differently given such circumstances, however, is then attributed to behavior: as she explains, "the type of reaction based on the situation, rather than their individual demographics." Differential response is thus rooted in behavior, By divorcing demographics from behavior, designer situates behavior as a universal quality that can be isolated as an object of design research "regardless of their age, gender, or anything."

But the details she gives in her campus example betray her conclusion of universally shared behavior. In her scenario, the scene is "a woman's college" and the object of suspicion is a "strange man"; he is strange because he is a man on a woman's college campus. She assumes that others in the same situation would "behave the same way I do," but their response would be contingent on a number of factors that challenges her scenario. Would she be equally disturbed had she been on a co-ed campus? Would another individual, perhaps a man, be suspicious of a stranger walking by? The reaction she presumes to be intuitive and therefore shared by others is, in fact, deeply situational. The setting (women's college), the subject (a woman), and the object (suspicious man) are instructive factors that shape her reaction. Circumstantial factors, such as the presence of others, are also important considerations that influence how one behaves in threatening situations. Studies repeatedly find inextricable relationship between identities, situational factors, and severity of the incident in people's reporting behavior. A key contribution

of this thesis, in fact, underscores the role of institutional distrust in how people respond to situations of duress and how this distrust is deeply embodied in relations of power.

When I pressed on this point of how behavior could be isolated from identities, designers expressed their focus on behavior as a practical choice.

> I see if you're writing a more scientific research, it might be interesting to see if there's also cultural differences or focusing more on demographics, like where people are from, where they were raised, and see if their behaviors or anything is different. But when you're researching more for like products, sometimes you don't have access to a lot of people, or there's limitations on timing, when you do the research. To get the most bank for your buck, I think it helps to focus more on behaviors you see across demographics.

They saw "cultural differences and demographics" as a topic of scholarly inquiry, rather than a design objective. Practical constraints do, in fact, pose serious challenges to design research: recruitment, whether through online research platforms or in-person through campus clients is incredibly time-consuming and costly. Under the organizational constraints of budget, time, and resources, researchers must make practical decisions. The search for the lowest common denominator and the reliance on "good enough" data illustrates how LiveSafe's methodological and conceptual frameworks for product design are enmeshed with practical constraints.

LCD approach in practice: Tip type vs. severity scoring

Fear categorization as a user research method to design the tip reporting screen exemplifies the lowest common denominator approach discussed thus far. Tip reporting is LiveSafe's core feature that enables users to categorize the safety incident they are observing or experiencing from a range of options and report to campus safety department with audio files, photos, or videos they captured. The particular arrangement of the tip reporting screen, as displayed below, emerged from a fear categorization exercise employed during user testing.

Fig. 9. Tip reporting screen for campus 1 and 2. Screencaptured by author on May 23, 2018.

Users must first categorize the incident they want to report from a screen of twelve options. The icons in each circular option give an idea of the kinds of incidents each category entails, but there no further definition is provided. "Accident," for example, is portrayed by two vehicles clashing. While this icon offers some clue to users about what kinds of incidents can be classified as an "accident," it also forecloses other accidents, say, a window breaking.

Fear categorization derives from card sorting, a commonly used method for interaction design. In this exercise, testing subjects are given photos or pictures of various objects and asked to name and/or group them. Card sorting aims to make visible the relationship between objects and how people name those relationships or groupings.[328] In adapting this method for LiveSafe, the design team wanted to investigate how users would interpret various fear scenarios, and how this interpretation would influence their decision to use LiveSafe's tip reporting feature. To start, the design team developed 55 fear and threat scenarios based on "anecdotal data" gathered from their rapport with students and campus safety authorities during product validation. These scenarios ranged from "someone keeps stealing my lunch out of the fridge" and "someone keeps slipping

[328] William Hudson, "Card Sorting," *Encyclopedia of Human Computer Interaction*, https://www.interaction-design.org/literature/book/the-encyclopedia-of-human-computer-interaction-2nd-ed/card-sorting.

trash on my desk every day" to "I see two of my peers getting in a fistfight." Participants were then asked to use the tip screen accordingly. The senior designer recollected how participants responded with panic, confusion, and solemnity: panic because they were inundated with twelve possibilities, confusion because they did not know how to match tip type to the given scenario, and solemnity because they wanted to "do a good job" sending the tip to an authority. "People will hit the screen where you have all these options, you have potentially 12 options on the screen that greets you, and usually what that means is people say, 'Whoah, let me read all of these and make sure I get this right.'"

From several iterations of this fear categorization exercise, the design team identified several factors that inform users' decision-making around reporting that I have categorized as positionality, temporality, and severity. These three categories are interconnected and co-occurrent, but I distinguish them in order to highlight how these considerations prefigure behavioral response. In the following paragraphs, I elaborate on how these factors surfaced as behaviorally significant to the researchers. I then consider alternative interface layout the design team pursued to demonstrate how the lowest common denominator approach eclipsed what may have been more user friendly. By positionality, I am referring to whether the user is observing an incident or directly experiencing an incident. One designer recalled how test subjects repeatedly asked whether they were the one witnessing or experiencing the fear scenario:

> If you want to file a, let's just say, a sexual assault tip, is it an active incident that needs to be resolved right now? Or are you filing because something has materialized or currently could be materializing and you need help, whether it's you're in a bathroom at a party because someone has followed you in there and you need to lock yourself in—active incident that's being managed? The fact that there are these changes in your mentality based on when something is happening, whether it's to you as the victim or someone else, these are the challenges we have to figure out before going to effectively create an application that, one, is used, which is the most important thing, making sure we connect people with the help that they need.
>
> It's the same interaction, but it's fundamentally different, similar to, in those safety scenarios, someone bashing in the windshield of my car is very different, it's the exact same thing as someone bashing into windshield of some stranger's car, but based on who that happened to, the context of the situation, it is perceived completely differently.

Participants struggled to use the tip reporting screen without knowing how they were implicated in the incident being reported. This is similar to what feminist media scholar

Carrie Rentschler observes in sexual harassment reporting app Hollaback!, which asks users to choose between "I witnessed" and "I experienced."[329] Rentschler analyzes this classificatory act as an exercise in "subject positioning" that has the effect of simplifying how users make sense of sexual harassment. While LiveSafe's current iteration does not ask the user to classify their positionality in the same way, it is important to note that test subjects found the tip reporting screen difficult to navigate without this clarity. This confusion illustrates how reporting behavior is, in fact, deeply informed by how people interpret their relationship to the incident.

Another crucial factor is temporality. The design team remarked on how participants repeatedly requested to know about the timeline of the event to inform their decision to use the app. The senior designer described participants' decision-making process in relation to time in this way:

> Before: This usually fits into something more like, suspicious-slash-gut, something doesn't feel right here, and something might materialize but we'll see.
>
> During: Basically, it's just, "I need to act," and it really doesn't matter what that action is, it's just a trigger as saying, something has now changed in the situation and this is no longer something I can stand and watch, something needs to be done.
>
> After: I thought was interesting, it kind of diverged; if it was severe, then I would always go back and retroactively report; but if it was not severe, I would report it, if it was me. If someone else stole my watch and it's the day after the fact, you know what, I wish someone would check the cameras to see who stole my watch, I'll report it. If it was someone else, I don't really care about that.

Of course, this construction of a linear timeline is possible only because fear categorization is a cognitive exercise. However, the use of a timeline as a heuristic to classify differences in reporting behavior from both the participants and researchers is instructive. A timeline of before, during, and after essentially represents degrees of urgency, which is expressed through the vocabulary of intuition. Before an incident takes place, intuitive thought process begins to take place as participants make note of suspicious feeling that "something does not feel right." During an incident, the urgency

[329] Carrie Rentschler, "Hollaback! Harassment Prevention Apps and Networked Witnessing," in *Appified: Culture in the Age of Apps,* ed. Jeremy Wade Morris and Sarah Murray (Ann Arbor, MI: University of Michigan Press, 2018), 137-139.

of the situation propels immediate bodily reaction, “something needs to be done.” After the incident, an assessment of participant’s positionality shapes how they respond.

Finally, test subjects weighed the severity of an incident to determine whether to report. While serious offenses like battery and shootings can be clearly identified, the vast majority of on-campus safety concerns, such as theft and noise complaints, necessitated some degree of decision-making. LiveSafe designers found that users assessed such incidents’ severity to determine whether to report.

> Certainly what I’ve observed is the sentiment of, “I am now dealing with an authority, I need to get this right,” and you can’t be wrong if you submit media. You can’t be wrong if you choose the Other button, anonymize the report and say, "Hey my friend might be overdosing on drugs, someone should be here.” You can’t have submitted the wrong information. So I thought that was interesting because it tossed the criticality of designing the interface in a way that someone feels comfortable, “I am submitting the right information and I feel good about this.”

Here, the designer remarks on how the core features of the reporting flow—evidence collection and tip reporting to campus authorities—created a desire to be correct in users. The knowledge that LiveSafe tips will be sent to campus authorities with audio, photographic, or video files developed a feeling of “I need to get this right.” This desire to be correct was so strong that some users decided to bypass categorization by choosing “Other” and anonymizing their submission. In fact, design team often received un-categorized tips, which they call “generalists,” primarily placed in the “Other” category.

Acknowledging severity scoring as an important component of users’ decision making was an interesting point of consideration for LiveSafe. Since the company’s transition from CrimePush, LiveSafe had made a deliberate choice to employ de-escalating vocabulary like “non-emergency tip” rather than “crime report” or “emergency” to present the product as an accessible and low-stake reporting channel. Given the prominence of severity as a factor, designers tested an alternative design based on severity scoring:

> One alternative way of submitting tips that we actually tested, and it tested pretty well, there’s still a little more research we have to shake out on it, is instead of giving people 12 tip types, we actually gave them a severity score, where they would define it as, I think it was like “General,” and then “Danger” was the next level, and then “Emergency” was the top

> option. And if you hit General, it would give you: okay, this is a Facilities concern, this is a Public Disturbance concern, just that kind of stuff. If it was Danger, then you could categorize, "I'm in danger," "Someone else is in danger," or "There's some community danger."

Unlike the tip reporting screen, severity scoring design incorporated the three factors discussed thus far to more actively guide the user through deliberation. First, tip screen asked users to classify the incident being reported as "General," "Danger," or "Emergency" based on its severity. "General" included instances like noise complaints and "Emergency" included serious assaults. Following severity scoring, the interface prompted users to assess their positionality as an observer or a victim, similar to Rentschler's discussion of Hollaback's "subject positioning." In contrast to fear categorization, severity scoring layout broke down the deliberative process of reporting into steps so that users can assess severity, identify their positionality, and then proceed to report with relevant details.

The senior designer attributed severity scoring screen's success to the reduction in what he described as "buyer's remorse." Upon testing, the design team observed users respond to each step with the desire to be correct. "It led people to the point of buyer's remorse of being like 'I don't want to be wrong.'"

> This concept of buyer's remorse…There's this idea of, "Well, I got 12 tip types, I better select the right one"…Let's say you're in a cafeteria and you see two people getting in a fistfight. You would start to think, "Was that an 'assault' or a 'disturbance' because they were disturbing everyone else around them but this guy also just punched the other guy in the face, and I don't know how to categorize this. If I categorize as 'disturbance,' will it be handled by the facilities guys or security authorities? Is 'assault' going to get the police involved? I don't know."

Buyer's remorse refers to the guilt and subsequent second-guessing consumers experience after making an expensive purchase. The change in emotional state before (excitement and anticipation) and after (remorse) the purchase captures the change in consumers' perspective: weighing the projected effort and commitment of soon owning a very expensive item, consumers second-guesses themselves to determine whether the decision to purchase was the sight one after all. This second-guessing involves re-assessment of the pros and cons of purchasing a pricey item and questioning whether they had the right information to inform their decision. As the senior designer's recollection shows, fear categorization did not account for users' experience of second-

guessing. Fear categorization layout left users to make their own categorization and proceed to reporting and, in doing so, failed to mitigate buyer's remorse:

> Severity scoring design actually facilitated some sense of, "Okay, I'm actually, I was right, I picked danger, and I saw it had categories that related to the danger I'm seeing, I'm in danger." So at that point, you have jackpot number one: Danger - okay, categorized that correctly; jackpot number two: I'm in danger, "Oh the interface is actually going to guide me to getting this where it needs to go." Versus if you show up to a set of 12 doors and someone asks, "what door do you want to walk through," and you say, "Well, I don't know, what are behind each of these doors? Where do each of these doors go? Are there going to be people behind these doors to help me or is that door on lock, should I even try the handle on that?"

Fear categorization prompted users to commit to their categorization without further information about what that category will mean to campus safety authorities, how it may or may not implicate them, and what will become of the tip. This lack of information, operationalized as fear categorization, created a kind of buyer's remorse—rather, a reporter's remorse.

Severity scoring, on the other hand, extended the temporality of tip reporting, thereby expanding the deliberative process of reporting. It leveraged users' desire of wanting to make an appropriate report ("I need to get this right") by building deliberative steps into reporting. By breaking down each factor—severity, positionality, temporality—into steps, the severity scoring layout walked users through the reporting experience. As the senior designer explains: "That design actually facilitated some sense of, 'Okay, I'm actually, I was right, I picked danger, and I saw it had categories that related to the danger I'm seeing, I'm in danger…the interface is actually going to guide me to getting this where it needs to go.'" Expanding deliberation not only created a more robust reporting process with key information, but also built assurance and trust into it. The expansion of reporting experience through progressive steps encoded assurance into the interface in order to establish a relationship of trust between users and LiveSafe:

> Certainly what I've observed is the sentiment of, "I am now dealing with an authority, I need to get this right," and you can't be wrong if you submit media, you can't be wrong if you [match] the Other button and then put anonymous and say, "Hey my friend might be overdosing on drugs, someone should be here." You can't have submitted the wrong information. So I thought that was interesting because it tossed the criticality of designing the interface in a way that someone feels

> comfortable with, "I am submitting the right information and I feel good about this.”
>
> There’s a lot of trust and a lot of intuition we need to build into the application that I’d be lying if we say we’re there yet, but I think that when it comes to design philosophy, getting to those taxonomies, how do people perceive danger, what is different about someone threatening me versus someone threatening someone else, I think we need to understand that to be successful in a lot of different environments we get deployed.

Thus, what made the severity scoring layout more successful as a user interface was the recognition that reporting is neither a spontaneous nor causal act. Rather, reporting is an embodied and embedded process and an interface layout designed to facilitate this process tested much better with LiveSafe’s test subjects. It enabled LiveSafe to fully embrace its role as an “emotive actant” by mediating users’ reporting experience with assurance, confidence, and trust. In the next chapter, I examine a different reporting system that regards reporting as a process rather than an act, and prioritized facilitating deliberation as a design objective.

And yet, LiveSafe decided to continue with fear categorization. The decision to stick to tip type layout based on fear categorization rather than severity scoring is a telling instantiation of LiveSafe’s lowest common denominator approach to product design. Recalling how and why the company decided to maintain the tip type screen, the senior designer explained the technological, operational, and organizational constraints.

> One of the big reasons why we’ve not adjusted the design is, to the point of, we do business with over 100 campuses around the United States, it’s really difficult to unilaterally make decisions like that [changing the reporting interface]. We have to be pretty sure that the experience will be better, and that it will be more effective, and I think at this point, probably, some of the limitations are technical, so it would be great if we were to be able to roll out to 10% of our population, "here’s the new tip load design, have at it.” But there’s definitely a high level of technical aptitude that needs to be deployed in the sense of, you need to be able to turn off features for certain clients and turn them on.

In his vision, rolling out a new interface based on severity scoring would have to involve tiered implementation. On the most immediate level, this posed technical challenges for a company that has only recently grown enough to afford a small team of in-house engineers: “Our engineering team isn’t enormous. If we had double the engineers, this would be easy. When you have the level of engineers that we have, you can only

prioritize so many things." From where he stood, he did not think he had the human resources to do this.

Implementing drastic changes to the layout to existing clients also posed a significant challenge to LiveSafe's business model that could potentially jeopardize the firm's relationship with existing clients. In contrast to other "consumer-facing companies" that are able to "unilaterally experiment" with their product in the name of improving user experience (i.e., Instagram's introduction of stories feature), LiveSafe's business model presented an obstacle to experimentation. Such companies are free to experiment without customer buy-in because they offer parts of their service for free. Unlike such companies, LiveSafe is a B-B-C company.

> We are, unfortunately, somewhat tied in the sense that we're a B (business) to B to C (customer) company, we are beholden to the B to B, the university as the people that buy the app, the C is the people that use it. So even though you may be doing something that may be beneficial to the students, the students technically aren't the people that purchase the software so therefore, there's a lot of opinion as to how the interface should be used, what should you put on it.

In other words, he anticipated tension between design needs of student-users and administrator-clients. Campus safety administrators had a clear vision of "how the interface should be used, what should you put on it" that favored tip type screen. For the students on the front end, severity scoring layout walked them through the deliberative process of reporting. Rather than the nature of what is happening, questions of positionality, temporality, and severity more crucially helped them decide when, how, and what to report. On the contrary, the administrators on the back end had a very different set of needs. The campus safety department responsible for receiving the tips had to make sure that tips are categorized and routed to relevant campus safety authorities. The tip type screen did this automatically upon collecting the tip, and this was a welcome feature for those administrators who did not have to deliver and follow up with the tips and the relevant safety administrators. Even though student-users preferred severity scoring, changing the tip reporting layout would lead to antagonistic response:

> [A campus administrator might say] "I agreed contractually to buy this product, I ran it by my HR, I ran it by my Dean of Students, I assembled a bunch of focus groups with students and faculty to take a look at different applications and we settled on your app because we settled on

> these features, and now you're telling me you're going to take it away?" So there's an additional organizational hurdle to jump over.

As he explains, the tip type screen appealed to the wide constellation of campus safety administrators on campus because of its categorizing function. Making changes to that to better address end-user needs would, therefore, be a violation of client's expectation.

Even if campus administrators were open to change, the senior designer anticipated that it would be difficult to convince his clients. He located his clients' potential resistance in campus administrators' perception that qualitative data is not "good enough."

> You need to be able to build a case of why you're changing something. Let's say you tested with 50 people, which is a significant amount, particularly from a qualitative testing perspective. For some of our clients with upwards of 50,000 students, they would say in response, "So, what you're going to change the interface for my 50,000 students because you talked to 50 people? It's working just fine for me."

His anticipation of campus administrators' likely response harkens back to an earlier discussion in this chapter about different forms of knowing. Here, the hypothetical campus administrator equivocates qualitative and quantitative forms of knowledge: the numbers of people are isolated from their contexts in order to draw the comparison that talking to 50 people is not sufficient a justification for making changes that affect 50,000 people. The campus administrator equates quantity with rigor and, in doing so, dismisses qualitative knowledge coming from conducting in-depth user tests with 50 people as insufficient; it is not enough to justify changes for 50,000 people.

Rolling out the new interface would also pose practical challenges for implementation. When a new contract is signed, LiveSafe's implementation team works closely with campus safety departments to ensure that it is embedded into the client's orientation program at the start of each academic year. New student orientation is a crucial time for campus safety: not only is it a natural point for communicating important safety-related information to incoming students, it is also a period known as "the red zone," the first several weeks at the start of the fall semester when incoming women students face the greatest risk of sexual assault.[330] Campus safety administrators

[330] The term "red zone" originates from Robin Warsaw's 1988 book *I Never Called It Rape* that follows up on *Ms. Magazine's* article on date rape based on Mary Koss' 1987 article. See Robin Warshaw, *I Never Called It Rape: The Ms. Report on Recognizing, Fighting, and Surviving Date and Acquaintance Rape*, New ed (New York: Harper Perennial, 1994).

concentrate their resources on this period, including introduction to relevant authorities, consent and bystander training, and dissemination of information about Title IX and reporting. Changes made to LiveSafe have to wait until September each year to be implemented, in order to ensure that the user base become familiarized with the changes: "There's definitely a challenge there of getting the buy-in from the clients, combined with the schedule that I mentioned before of, you roll out the app when new students come on campus every September, very difficult to make those changes." To do this, the LiveSafe team would have to start coordinating with the campus safety department, IT department, and other relevant campus authorities in their client colleges and universities in order to make sure the right authorities are trained to educate students about how to use LiveSafe by the time they arrive in September. Even with the company's recent expansion, this is too gargantuan a task to undertake.

Beyond the technical, operational, and organizational challenges, maintaining the tip type screen had its own benefits. The senior designer explained how the tip type screen produced an advertising effect:

> There is a benefit there [with tip type screen] because we advertise what you can report. You may have never ever thought to use this app to report lights out on your campus, or you may have never thought to report that there's broken glass on the stairwell that someone might slip, you may have never even thought to report a noise violation through this app. It's kind of an advertising screen as you can select whatever types you want people to consider, "Here are the things that you can do just in case you're curious what this app is for." And you can move people away from reporting certain things you don't want them to.

This instructional value of the tip type screen introduces reporting areas users may not have considered before while also foreclosing others that do not appear on the screen. The tip screen reflects Rentschler's examination of feminist reporting technologies as value-laden "classificatory act": the visibility and ordering of various tip types "reveals a naturalized hierarchy" the company and partner university hold about various safety issues.[331] In Fig. 9, for example, "hate/bias" and "hazing" appear at the bottom of the interface. During my interviews with the client university, campus safety administrators explained how these categories were added in response to public incidents of race-based harassment and hazing in student social spaces, including Greek life organizations. The bottom placement of these two tip types suggests their belated inclusion and, more

[331] Rentschler, 139.

importantly, reflects their initial omission: bias and hate crime did not initially occur to safety administrators and designers.

For whom are hate crime and hazing a negligible category? Certainly not for the students who find their campus life structured by race and social hierarchies. As countless reports detail,[332] racial bias and social hierarchy play an integral role in shaping student experiences. Their omission and belated inclusion thus raise alarm. To this day, the default setting of the twelve tip types does not include these two categories. They are included, if campus administrators explicitly request it or if LiveSafe representatives offer it as a possibility; in fact, as I detail in the next chapter, categories about discrimination often become available following public instances. There may well be many reasons why discrimination-related tips are not included in the default setting: administrators and designers may assume that those issues are implied in existing tip types (like "Assault/Abuse") or simply did not think those issues are prevalent enough to warrant inclusion. Sociologists Espeland and Stevens' discussion of the "reactivity" of categorization is useful here.[333] Drawing from Hacking's assertion that categorization has the effect of "making up people"[334] by creating and reinforcing "categories used to conceive of human being," Espeland and Stevens see categorization as an active and dynamic process through which social differences and differentiations become marked and known.[335] The significance of inclusion speaks to the significance of omission, then. If the creation and enforcement of categories enable them to "intervene" on the world of campus safety, their omission prevents them from shaping it.

In spite of severity scoring's advantage in meaningfully guiding user experience, LiveSafe ultimately decided to maintain the tip type screen with its twelve default categories (see Fig. 9). Recall the founder's explanation of LCD approach from the start of this section:

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[332] In particular, the omission of hazing is a strange choice as hazing in athletic teams and Greek life organizations compose popular narratives about campus life. See "Penn State Sorority Pledges Forced to Lick Memebers' Toes, Hazing Report Finds," *Associated Press*, January 16, 2019, https://nypost.com/2019/01/16/penn-state-sorority-pledges-forced-to-lick-members-toes-hazing-report-finds/; Eileen Brady, "Racial Slur and Bias Incident Reported on Student Doors," *The Dartmouth*, October 18, 2018, https://www.thedartmouth.com/article/2018/10/racist-slur-and-bias-incidents-reported-on-student-doors; and Jay Caspian Kang, "What a Fraternity Hazing Death Revealed About the Painful Search for an Asian-American Identity," *New York Times*, August 9, 2017, https://www.nytimes.com/2017/08/09/magazine/what-a-fraternity-hazing-death-revealed-about-the-painful-search-for-an-asian-american-identity.html.

[333] Wendy Nelson Espeland and Mitchell L. Stevens, "A Sociology of Quantification," *European Journal of Sociology* 49, no. 3 (December 2008): 401–36, https://doi.org/10.1017/S0003975609000150.

[334] Ian Hacking, *The Social Construction of What?* (Cambridge, Mass. ; London: Harvard University Press, 1999): 412.

[335] Espeland & Stevens.

> From the product side, it's understanding the issue areas so we can look at all these issues, put them all on the wall, and say, "Okay, how are our features addressing each and every one of these areas, and what are the common themes, what are the common response mechanisms, and how do we create a solution that best addresses all of these in a holistic ways." We're looking for common denominators and not necessarily the outliers and we'll take into consideration the outliers or the one-offs. But, really, we're building for a solution that can address the majority of the needs.

The founder's expression of design objective and counts as the majority are telling. The goal for the product design team is to "address the majority of the needs." The founder identifies this majority by "looking for common denominators" rather than "outliers" and "one-offs." In other words, what is not the LCD is considered to be an extreme or random happenstance. My examination of the design process—the logic of intuition, data imaginaries, and the threshold of being "good enough"—however, indicates how these outliers and one-offs are far from extreme or random. Interpreting safety as an intuitive experience obfuscates how structures of power differentially shape individuals' experience of safety. The data imaginaries and the threshold of being "good enough" that form product validation phases enable and reinforce intuition as the conceptual framework, even in the presence of practical, methodological, and organizational constraints that challenge it. Together, the ethos and practices that drive LiveSafe's design process reify the notion that safety is a universal and intuitive experience that can be harnessed into features.

The founder primarily considers LCD to "issue areas," but placing the common denominators in the context of classificatory politics of the reporting screen exhibits troubling implications. The default tip reporting screen reveals what the design team considers to be "majority needs." This would make, to use his words, hate crime and hazing "outliers and one-offs" despite an overwhelming number of reports and stories that underscore how students' identities play an integral role in shaping their social lives on campus. The choices designers make are not simply about what counts as campus safety. They reveal the designers' assumptions about ideal users and how these assumptions validate or omit certain experiences of safety. Ultimately, the impact of design choices extends beyond features to ascribe whose experience of safety matters.

CONCLUSION

This chapter has examined how the logic of intuition undergirds and propels LiveSafe's design and use as a safety reporting app. Delving into the complexities of

conceptualizing and operationalizing a notion as nebulous as intuition, I have outlined how the interface's current iteration stabilized over time without much change to maintain the design team's approach to design and understanding of safety. In the next chapter, I introduce a different reporting system, called Callisto, that takes the logic of credibility to shape its design and implementation.

4. Callisto: Encoding credibility

In her TED talk, Callisto founder and CEO Jess Ladd recounts a familiar story.[336] Hannah is excited to begin her first year in college. The day after her first college party, Hannah wakes up with a headache so bad it blurred any memory she has of what happened the night before. Ladd continues:

> But what she does remember is throwing up in the hall outside Mike's room and staring at the wall silently while he was inside her, wanting it to stop, then shakily stumbling home. She doesn't feel good about what happened, but she thinks, "Maybe this is just what sex in college is?"

This "sex in college" scenario has become a familiar one in mainstream media discourse on college sexual assault. Critics question whether Hannah's hazy memory is sufficient to escalate the instance as sexual assault and see it indicative of poor decision-making characteristic of college students. Advocates, on the other hand, point to the combination of alcohol and lack of consent as a troubling normalization of unwanted sex. Ladd's scenario jumps four years later when Hannah realizes "that she was one of five women" who have Mike as a shared experience.

To Ladd, this is "not an unlikely scenario because 90 percent of sexual assaults are committed by repeat offenders." The one-in-five figure is purposeful: it references the much-cited report that one in five women in a graduating class will have experienced some form of sexual assault from the White House Task Force to Protect Students from Sexual Assault. One in five appears a jarring figure, its prevalence suggesting "there's practically no deterrent to assault in the United States." Ladd's repeat offender theory,

[336] Jessica Ladd, *The Reporting System That Sexual Assault Survivors Want*, accessed February 3, 2019, https://www.ted.com/talks/jessica_ladd_the_reporting_system_that_sexual_assault_survivors_want?language=en.

however, contends that campus sexual violence is a knowable and thus solvable problem. The "epidemic" of campus sexual assault is contained in repeat offenders: identify them and the epidemic can be solved.

From Ladd's story of "sex in college" emerges the campus rape imaginary[337]—culturally dominant and legible narratives that inform ways of thinking about what sexual violence on campus is and what it should be. These narratives are not only descriptive in reflecting which experiences become legible forms of sexual violence as they are "continually reshaped by specific social relations and political contexts."[338] They have the prescriptive potential to inform everyday assumptions of students, university faculty and staff, safety officials, and reporting app vendors who constitute the campus safety ecosystem. The campus rape imaginary thus operates as a reference point against which lived experiences of gender-based violence on campus are assessed.

Enter Callisto: "a tech to combat sexual assault and harassment" created "for and by survivors."[339] Callisto Campus is an information escrow system designed for higher education institutions that presents student users with options to record, match, or report their accounts of sexual harassment and assault to Title IX Coordinators. In Ladd's words, "If a system like this had existed for Hannah and her peers, it's more likely that they would have reported, that they would have been believed." Callisto locates itself as an intermediary facilitating and negotiating how users' records are evaluated against the campus rape imaginary.

This chapter takes a deep dive into Callisto's internal logics and material arrangement. I argue that Callisto is designed to operate as an epistemic mediator. By employing the walkthrough method[340] in concert with interviews and observations of Callisto's product team members, I demonstrate how they imagine their reporting system to mediate campus administrators' interpretation of Callisto-facilitated reports as credible and afford a sense of agency to survivor-users. In doing so, the vendor configures campus safety as a problem of credibility and, by extension, data. The designers seek to leverage data imaginaries to afford credibility to Callisto-generated reports in an attempt to rectify the credibility deficit that mark sexual assault claims. The

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[337] The following will have been explained in literature review and Chapter 2: Feminist legal and political scholars have demonstrated how the culturally dominant narratives of 'real' rape—one that is plausible and thus believable—play an integral role in shaping our social world. As Chapter 2 illustrates, campus sexual assault is almost always singular, heterosexual, white, incapacitated, and on campus grounds.

[338] Estelle B. Freedman, *Redefining Rape* (Harvard University Press, 2013), 3.

[339] Callisto, accessed February 3, 2019, https://www.projectcallisto.org/.

[340] Ben Light, Jean Burgess, and Stefanie Duguay, "The Walkthrough Method: An Approach to the Study of Apps," *New Media & Society*, 2016, 1–20, https://doi.org/10.1177/1461444816675438.

walkthrough method, combined with a vocabulary of friction[341] and enriched by ethnographic findings, illuminates "not solely what people think technology can do or what designers say technology can do, but what people *imagine* a tool is for."[342]

In order to illustrate how Callisto is imagined to be an epistemic mediator, I apply the walkthrough method to consider the software's vision and operating model. Following this, I delve into the technical walkthrough by highlighting, through the vocabulary of friction, how it manages friction by employing trauma as a mental model of interface design. With this in mind, I delve into the record form to demonstrate how Callisto: (1) reifies the campus rape imaginary even as it aims to resist it; (2) incentivizes reporting to serve its vision and operating model; and (3) employs the data imaginary to afford credibility to the user. Ultimately, I argue that Callisto conceptualizes campus sexual violence as an epistemic wrong that denies and rejects survivors as competent and trustworthy knowers of their own experiences of violence. In doing so, Callisto presents its record form as a credibility augmenting object through its appeal to the data imaginary. This pragmatist approach is inspired, but I conclude with my ethnographic findings that complicate the extent to which this pragmatist position can rectify the epistemic landscape of the campus rape imaginary.

Callisto's environment of expected use

Ladd's sexual assault reporting software is named after the Greek myth of Callisto. A nymph sworn to Diana, the goddess of hunt and protector of young girls, Callisto lived in the goddess's garden to uphold the values of loyalty, chastity, and purity. Her tragedy begins when Zeus, the king of the gods, becomes smitten with her beauty. His attempts to woo her stood no chance against the committed nymph's rejections. Indignant and entitled, Zeus disguised himself as Diana and succeeded in raping and impregnating the nymph ("he was a serial offender," adds Ladd).[343] Callisto, humiliated and traumatized, tried to hide her pregnancy, but was eventually discovered by her peers who had been jealous of the goddess's favorite. Diana rejected Callisto as her disciple

[341] James Ash et al., "Digital Interface Design and Power: Friction, Threshold, Transition," *Environment and Planning D: Society and Space*, April 13, 2018, 026377581876742, https://doi.org/10.1177/0263775818767426.

[342] Peter Nagy and Gina Neff, "Imagined Affordance: Reconstructing a Keyword for Communication Theory," *Social Media + Society* 1, no. 2 (2015): 5.

[343] Late Night with Seth Meyers, "Jessica Ladd Wants to Give Sexual Assault Survivors Choices," Youtube video, November 16, 2017, https://youtu.be/Rkhz9WR4zD4.

and expelled her from the garden and Zeus's jealous wife Hera unleashed her fury by transforming the nymph into a bear.[344]

Recounting Callisto's story, Ladd raises two questions: "how can we hold powerful offenders accountable for their actions, and how do we ensure that those who are supposed to support victims in their hours of need don't expel them from the garden?"[345] This is what Callisto aims to do: to enforce institutional accountability and support survivors. A reporting software created and operated by a team of mostly young women, many who self-identify as survivors, Callisto introduces encryption, matching algorithm, and a trauma-informed interface to "combat sexual assault, empower survivors, and advance justice."[346] The user is given three options: write, match, or report. The user can answer questions informed by the Forensic Experiential Trauma Interviewing (FETI) techniques to document an account of what happened. The completed document securely remains on the user's dashboard, until she triggers further action. The second option to match draws from law and economics professor Ian Ayres's information escrow theory to remove the burden survivors face in making sexual harassment claims. Using the offender's digital traces (e.g., school email, social media IDs, and URLs) as a unique identifier, the user can "enter into a match" to be linked to existing reports involving the same offender. The third option escalates the record to a formal complaint to the campus Title IX Coordinator. Since its launch in 2015 with two pilot schools, Callisto now has twelve higher education partners,[347] ranging from religiously-affiliated schools to liberal arts colleges.

[344] Callisto's plight continues. She spends the next sevearl years watching her human son from afar as she remains a bear. Many years later, the unknowing human son and the mother meet at last when a hunt brings the son to the woods. Unaware, he is about to attack the bear when Zeus, at last displaying a modicum of decency, takes pity on Callisto and places the pair among the stars. Furious her punishment has been compromised, Hera arranges to have the pair separated so they can never meet. See *Metamorphoses* by Ovid. Interestingly, the depiction of Callisto's assault in classical art illustrates troubling interpretations of the myth of Callisto. Two scenes in particular have been the subject of many paintings: Zeus' advances on Callisto as Diana, and the nymph's expulsion by Diana. The former is eroticized, showing Callisto and Zeus as Diana in happy embrace. See *Jupiter and Callisto* (early 17th c.) by Karel Philips Spiercks; *Jupiter and Callisto* (1759) by François Boucher. The latter presents Diana as the main subject, her regal stature grasping the viewer's gaze, as she points at the nymph in rejection. Callisto, her pregnancy barely noticeable, is difficult to identify as she bluries into the background. See *Diana and Callisto* (1559) by Titian; *Diana and Callisto* (1712-16) by Sebastiano Ricci.

[345] Late Night.

[346] Callisto, "Impact Report: Year 2," https://www.projectcallisto.org/Callisto_Year_2_highres.pdf.

[347] The thirteenth partner is the Upright Citizens Brigade Theatre, an improv and comedy training center. Even though UCB Theatre is not a higher education institution, it has a small close-knit community in the age bracket similar to college and university students. A Callisto employee explained that the UCB Theatre's social life akin to the college campus is the reason why the vendor decided to partner with the center.

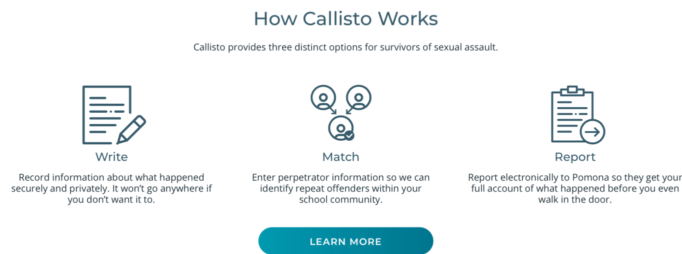

Fig 10. "How Callisto Works." Screencaptured by author from February 4, 2019.

As a digital object, Callisto's particular shape and form reflect the "technological imagination"[348] of the producers—their attitudes, values, and practices that facilitate and constrain their imagination of a possible technology. Digital artifacts "get won over to" this imagination, argues feminist technoscience scholar Anne Balsamo, "when they could be defined otherwise."[349] Such critiques against the notion of technological neutrality are useful in investigating the ideologies undergirding Callisto, which positions itself as an explicitly value-driven project. This chapter once again takes the walkthrough method to "di[g] through"[350] Callisto's particular arrangement by situating it in its cultural context.[351] I first begin by examining Callisto's vision of technological intervention in the campus sexual violence epidemic, its operating model of campus partnership, and its governance structure rooted in Title IX ecosystem. After uncovering Callisto's "environment of expected use,"[352] the technical walkthrough spotlights Callisto's operating assumptions and objectives that reinforce the campus rape imaginary, incentivize reporting as a desired outcome, and reproduce the politics of credibility through the "time-stamp."

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[348] Anne Balsamo, *Designing Culture* (Duke University Press, 2011): 31.
[349] Ibid., 31.
[350] Light et al., 7.
[351] The walkthrough method will have already been explained in Chapter 1's method section, and again in Chapter 3's LiveSafe discussion. Studies of mobile application have highlighted the tension between intended and actual use. Identifying this tension as an illuminating site of cultural values, attitudes, and practices, Light et al. (2016) propose the walkthrough method as a close reading of an app's technological arrangement to uncover its internal logic of use and value. This method takes a cue from information scientist Star's call for greater "ethnographic sensibility" in studying technological systems to uncover the "closed-off or hidden" assumptions, values, and aspirations that guide a system's design and use. The "environment of expected use" elucidates how interface design reflects and shapes cultural discourse. To investigate how an app situates itself in a particular cultural context, Light et al. suggest examining its promotional materials, website, and policy documents to investigate its vision, operating model, and governance. The "technical walkthrough" that follows invites the researcher to assume the position of the user to explore the app's interface. Analysis thus emerges from juxtaposing the user experience with the environment of expected use to systematically uncover cultural values.
[352] Light et al., 8.

Vision: "repeat offender theory"

Prior to Callisto, the founder Jess Ladd was trained as an infectious disease epidemiologist. Her background is reflected in how she conceptualizes campus sexual assault as a "tragic but a solvable problem," insofar as systems are understood and resources are appropriately allocated.[353] The not-for-profit vendor's three core values—"survivor-centered, truth-seeking, and systems-focused"[354] —reiterates Ladd's conceptual framework. To solve a problem is to know the problem. Campus sexual violence's knowability rests on the repeat offender theory, which posits that perpetrators commit offenses repeatedly in the absence of institutional accountability.[355] Callisto, then, is the vehicle through which the "epidemic" of campus sexual violence becomes knowable through the power of data-driven technology. As Light et al. argue, identifying an app's own articulation of its purpose implies its intended use and target user base. The following section investigates Callisto's vision of "combatting sexual assault, supporting survivors, and advancing justice" guides and is structured by its repeat offender model of campus sexual violence.

CAMPUS SEXUAL ASSAULT AS USE-SCENARIO

Callisto is notably nondescript about its use-scenarios. While promotional and organizational materials do state "sexual harassment and assaults" as intended scenarios of use, there is no clear language on which experiences of sexual violence would meet the software's remit. Would Callisto take to a non-physical form of verbal comments of sexual nature from a peer?

Callisto elides defining its use-scenario too narrowly in order to maintain a more expansive user base. According to the 2011 Dear Colleague Letter's definition of sexual harassment,[356] it encompasses a wide range of physical acts of sexual violence that is "sufficiently severe, persistent, or pervasive" to negatively affect a student's access to education. This means that the three-pronged threshold of sexual harassment definition will vary by institutions. On the contrary, the Clery definition assumes a narrower focus

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[353] Ladd, "Reporting."

[354] "Work With Us," https://www.projectcallisto.org/work-with-us.

[355] See Carly Parnitzke Smith and Jennifer J. Freyd, "Dangerous Safe Havens: Institutional Betrayal Exacerbates Sexual Trauma: Institutional Betrayal Exacerbates Sexual Trauma," *Journal of Traumatic Stress* 26, no. 1 (February 2013): 119–24, https://doi.org/10.1002/jts.21778.

[356] In November 2018, the Secretary of Education Betsy Devos rescinded the Dear Colleague Letter and guidelines to Title IX are currently undergoing the notice and comment period. While the specific details of Title IX definitions remain unresolved in light of this recent decision, I utilize the Dear Colleague Letter's definitions as they have been central in guiding my fieldwork sites' policies.

on physical acts of violence by compartmentalizing physical offenses from non-physical forms, such as stalking and hate speech. Even without a clear definition, however, Callisto alludes to sexual assault between peers as its assumed use-scenario through its language and design choices.

Callisto takes the basic premise that sexual assault is prevalent in American campuses: one in five college women will have experience a form of sexual assault by the time they graduate. Evoking the widely cited (and equally widely disputed) White House Task Force figure, Callisto quantifies sexual assault's magnitude to align itself with mainstream discourse on the campus rape "epidemic." Contrary to popular myth of stranger rape, Callisto is conscious in framing the said-epidemic as a contained and thus a knowable phenomenon. In her public statements, the CEO Jess Ladd is deliberate in rejecting the stranger danger myth. Her own experience of sexual assault by a peer in college and the insights gathered from the survivors she has talked to emphasize the magnitude of the sense of betrayal and distrust that emerges from undergoing violence by an acquaintance. Ladd explains, "When my sexual assault did happen, it wasn't with a stranger on the way home from school. It was with a friend. And I had to decide whether that meant that I couldn't just trust strangers, but I also had to be careful around the people I trusted."[357]

Not only are these perpetrators known, but they are also repeat offenders. The Impact Report attributed 90 per cent of assaults to repeat offenders who "perpetrate on average of six assaults."[358] This is a troubling and an overwhelming allegation. But it is in the repetitiveness of assaults and the offenders who commit them that Callisto finds room for solution. The repetitiveness gives scale to sexual violence, but it also contains the problem to discrete offenders. In spite of this promise of knowability, sexual violence on campus remains an overwhelming and unruly challenge. Callisto turns to reporting as a possible solution. At the individual level, reporting would ensure that victims receive the help they need when they need it. At the community level, reporting would lead to a greater number of perpetrators being held accountable, which would then have a deterring effect. At the institutional level, reporting would provide the data needed to illuminate the full scope of sexual violence.

[357] "Jess Ladd of Callisto Receives the 2018 Skoll Award," April 12, 2018, video, 6:01, https://youtu.be/ok9VMDRZ714.

[358] "Impact Report," 5.

However, as reporting stands currently, it remains an inaccessible, traumatizing, and disappointing experience. Under "The Problem" section on the homepage, Callisto explains, "The process of reproting can feel isolating—or worse, retraumatizing—not to mention comes with its own set of persona and professional risks." For some survivors, the reluctance to report stems from the uncertainty of their own experience, the difficulty in "label[ing] what happened to them as assault.[359]" Others "fear they won't be believed" and anticipate negative reactions from their friends, families, and communities.[360] These factors may be why Callisto finds that less than 10 per cent of victims reporting to their school or the police, and that those who do report take an average of eleven months before they report.[361] With such significant time lapse between the assault and reporting, the claimant is likely to be disadvantaged during investigation in providing strong evidence. Perpetrators thus have a "99 per cent chance of getting away."[362]

What, then, would incentivize victims to report, in spite of these fears? According to the Impact Report, survivors highlighted two leading reasons: "to protect their community" and "out of a sense of responsibility."[363] Callisto locates this urgency to act in the theory of repeat offenders. "This means that many survivors would report if they knew their assailant was a repeat perpetrator,"[364] because of the anticipation of future assaults. Through rumors and warnings that populate the silent whisper network, some victims may have informal knowledge of repeat offenders and other men to "look out for."[365] But largely, there is little to no way for victims to know if their assailant is a repeat offender.

Callisto incorporates Ayres' information escrow theory and its understanding of campus sexual assault to proffer its reporting application as an "empowering" and "survivor-centered" alternative to reporting. Ayres proposes an allegation escrow system with a matching algorithm that would, hopefully, reduce the burden of reporting.

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[359] Callisto, "Campus Toolkit," https://www.projectcallisto.org/student_activism_toolkit.pdf.

[360] Ibid. Interestingly, Callisto does not cite the sources of these figures. Some may be drawing from existing research and some may be from the vendor's own user testing.

[361] Ibid, 11.

[362] Ibid.

[363] "Impact Report," 9.

[364] "Campus Toolkit," 11.

[365] During the course of this project, the #MeToo and #TimesUp campaigns spotlighted the extent to which women's private and professional lives center around the fear of sexual violence by men. In doing so, the role of rumors and warnings—or, "whisper networks" as they have been dubbed in popular media—surfaced as the means through which women share experiences, anecdotes, and gut feelings. Most famously, writer Moira Donegan's "Shitty Media Men" list, intended intially to be a digital manifestation of women's existing whisper network in the form of an anonymous spreadsheet, became viral and propelled much of the debates about post-Weinstein reckoning. See Moira Donegan's reflection on her list here: https://www.thecut.com/2018/01/moira-donegan-i-started-the-media-men-list.html. See also a timeline of the list here: https://www.vox.com/culture/2018/1/11/16877966/shitty-media-men-list-explained.

Allegations of sensitive and "socially valuable information," [366] such as sexual harassment claims, face unique challenges: reporting is deterred by the negative consequences many victims anticipate and do face, such as not being believed, being stigmatized and isolated, and facing institutional backlash. Allegation escrow's objective is to reduce this "first-mover disadvantage" so that those who are otherwise willing to make a claim can proceed to make a report. A trusted allegation intermediary, or an escrow agent, can do this by centrally and confidentially collecting allegation deposits; they remain a deposit, until predetermined conditions are met. In case of sexual harassment, this condition may be a threshold of a number of allegations made against the same individual. Once an algorithm identifies multiple deposits of the same individual, it would inform each accuser and the identity of the repeat perpetrator can now become public knowledge. The accusers would be notified of being "matched'"with other accusers, and the perpetrator's identity can become public knowledge. Ayres notes three benefits of the information escrow system. First, it would encourage reporting by removing first-mover disadvantage. Even if no prior report has been made, accusers sharing allegations have the confidence that they are not the only one, and can thus make an informed decision to make their allegation public. As a result, the escrow agent enhances the credibility of each allegation, especially if multiple allegations are made as a result of the match. Lastly, Ayres writes that the escrow agent would not lead to increase in false allegations, because there is no way for individual claimants to know whether she is the first-mover.

Ayres writes that he considered sexual harassment in higher education as a "motivating example,"[367] and it is unsurprising how well Callisto's vision and Ayres' theory map onto each other. Callisto resolves to reduce the first-mover disadvantage students face in reporting by operating as an escrow agent to identify repeat offenders. Traditionally, a student wishing to make a sexual harassment report would speak directly

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[366] Ian Ayres and Cait Unkovic, "Information Escrows," *Mich. L. Rev.* 111 (2012): 149. While sexual harassment allegations are central to Ayres' theory, its application can be diverse. Ayres lists non-sexual wrongdoing, corporate suspicions, and whistleblowing as other forms of socially valuable information sharing that could benefit from establishing an escrow agent with a matching algorithm. ("[W]e find that allegation escrows are most likely to be valuable when the unescrowed equilibrium includes underreporting of truthful allegations and when wrongdoing is likely to be known by more than one person. Shared-interest escrows are more likely to be valuable when an unintermediated communication would be unwanted or when common knowledge of unilateral interest would damage a preexisting relationship").

[367] Ibid., 159. In fact, Ayres and Ladd worked together to develop Callisto and Ayres now sits on the vendor's advisory board. See Ayres, "Meet Callisto, the Tinder-like Platform that Aims to Fight Sexual Assault," *Washington Post*, October 9, 2015, https://www.washingtonpost.com/opinions/using-game-theory-technology-to-fight-sexual-assault/2015/10/09/f8ebd44e-6e02-11e5-aa5b-f78a98956699_story.html?utm_term=.d8d857793df7.

to campus authorities to file a complaint. As a Title IX Coordinator's testimonial on the website's "What We Do" page explains, "Say we have 100 survivors on campus. There's probably 80 different preferences of how they report their assault. Prior to Callisto, we had one option for all of them--and that was to come and talk to an administrator." Through Callisto, users have three options—write, match, report—that "empower survivors with pathways to desired outcomes."[368] Users can simply complete all questions and store their account as a record. Alternatively, they can "enter into matching" by providing the perpetrator's social media accounts as a unique identifier, which will be used by the matching algorithm to locate shared allegation in existing records. Lastly, with or without the matching feature, users can escalate their record as a formal report to campus authorities (most likely the Title IX Coordinator).

It is this diversification of reporting as a process with options that Callisto sees as agency-enhancing for survivors. The interface constantly repeats the language of choice: there is "no right way or wrong way" in reporting, it is "your journey, your choice." Discussion that follows later in this chapter, however, will question to what extent these options are distinct choices or steps towards filing a formal complaint.

THE SURVIVOR-USER

As the expected use-scenario suggests, the user is presumed to be a student survivor of sexual harassment and/or assault. Even though Callisto is accessible to anyone with a school email address on partner campus, the targeted and intended user is a student. The product designer explains: "We actually do require school emails if you are going to report it, your record, you can use whatever email you want on the record because you just say. But if you were to actually report it to the school, you have to verify you're a student at the school, you have to use the school email." The user must thus be a current student with a functioning school email address to be able to access all three options to record, match, and report.

Callisto's website adds instructive details as to how the vendor envisions the ideal user as multi-gendered and multi-racial. On the homepage, a grayscale headshot of a young Asian American woman greets the user. There is a gentle ray of light from the upper right-hand side that graces her face and gives texture to her fishtail braid. Her head is turned to the right and she looks straight ahead with a solemn and determined expression; she appears unfazed. Behind her is a backdrop of translucent mosaic banner

[368] "What We Do," https://www.projectcallisto.org/what-we-do.

composed of similarly grayscale portraits of multiracial and multigenderd young people with dignified, serious, and meditative expressions. Because the woman's portrait is superimposed on the banner, it gives the impression that hers is one of the portraits forming the mosaic. She is one of many.

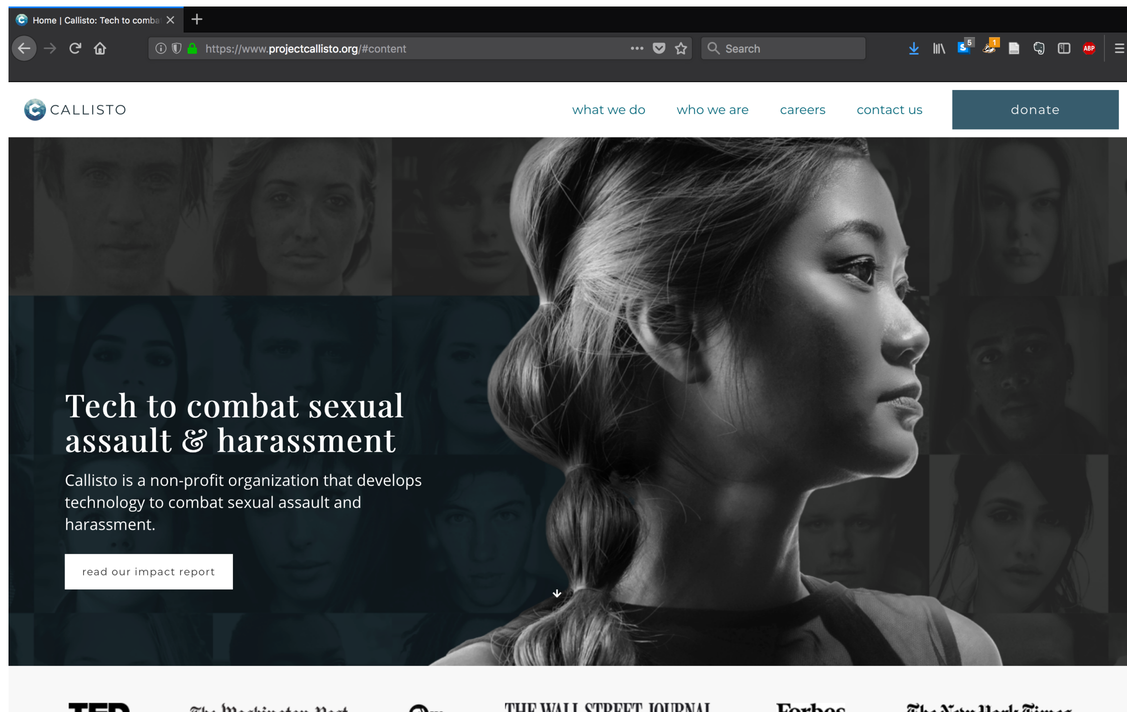

Fig. 11. Callisto homepage. Screencaptured by author from May 6, 2018.

This is a significant departure from the campus rape imaginary that presumes whiteness and heterosexuality of the assaults on campus.[369] In doing so, Callisto signals itself as an inclusive and diverse platform, open to users of all racial and gender identities, insofar as they have a campus email address to verify their education status. The banners continue. On the "What We Do" page, the banner features the bust of a young Asian American man with slicked back hair. His shoulders face the front, but his face is turned slightly to the right and his eyes look ahead into the distance with a solemn expression similar to that of the woman on the home page. The same gentle ray of light shines from the upper right-hand direction to softly add texture to the portrait. The "Who We Are" page displays a headshot of a south Asian woman with a short bob whose shoulders face the right where the light comes from. Her head is tilted to the left so that her determined

[369] Jessica Harris, "Centering Women of Color in the Discourse on Sexual Violence on College Campuses," in *Intersections of Identity and Sexual Violence on Campus: Centering Minoritized Students' Experiences,* ed. Jessica Harris and Chris Linder (Virginia: Stylus Publishing: 2017).

eyes face the user directly. “Contact Us” page features with a bust of a Black American woman who stares directly at the user. The technical walkthrough on the interface in ensuing sections delves deeper into how the software engages with racialized and gendered notions of the campus rape imaginary.

The website also refers to users as “survivors," and this is a telling choice of vocabulary. The ongoing debate between victimhood and survivorship indicates conflicting feminist politics of sexual violence. Initially, feminist critics proposed survivorship to reject the linear and vertical perpetrator-victim framing of mainstream discourse on sexual violence. They proposed survivorship as an alternative model of thinking about agency, resistance, and endurance of those who, in spite of their traumatic experiences, survive. Others found such calls for empowerment a patronizing move and maintained victimhood framing to emphasize how power structures operate in gendered and violence ways. Regardless, victimhood remains the dominant mode of framing sexual violence, and Callisto’s decision to use the terminology of survivorship positions itself as a knowing and understanding ally to target users.

Operating model: “for and by” survivors

Unlike its competitors in the market for campus safety technologies, Callisto is a non-profit organization. Currently, Callisto has two main sources of revenue: program (higher education and industry clients, or “partners”) and philanthropy. By considering its organizational structure, business strategy, and revenue source,[370] this study of Callisto’s operating model highlights how the vendor negotiates its values, vision, and commercial interests.

BECOMING CALLISTO

Since its launch in 2015 Callisto has witnessed significant growth. According to the 2015-2017 Impact Report, foundations such as Google.org, Battery Powered, the Skoll Foundation, and Y Combinator, and over 600 individual donors have contributed over 2.5 million dollars. Program revenue, generated from yearly contracts Callisto enters into with its “partners” (clients), has raised over $288,130. Behind its financially stable position today are years of decisions, made by a team of mostly young women, that grappled with value commitments and realities of maintaining a tech startup.

[370] Light et al., 10.

Callisto began as a passion project of the founder, Jess Ladd. In 2011, Ladd founded Sexual Health Innovations (SHI) as a graduate student in epidemiology of infectious diseases at Johns Hopkins University. The objective was to develop innovative ways to employ emerging technologies to solve pertinent challenges in reproductive health.[371] Four years later, SHI launched Callisto on two university campuses, or higher education "partners," to bring its reporting interface to student-users. With national conversation on rape culture, campus safety, and higher education's duty of care intensifying, Callisto grew to be adopted by twelve higher education partners and has now been expanded to the workplace. By 2016, SHI rebranded as Callisto to focus solely on its reporting application.

For existing donors, Callisto's introduction marked an exciting shift, but obfuscated SHI's public health scope: while younger, individual donors found a novel opportunity in the technologically-driven start-up's new initiative, many older donors found the expansion to be a confusing. "We were having challenges of people not really understanding, like, why SHI, why not just Callisto? […] Is this just something that you're gonna be doing a project of, or will it be grown out?" recounted one participant who works in operations and development. Callisto was able to bring in new donors from the field of anti-violence, but they, too, were confused by Callisto's role in a public health organization. "There's limited funding in anti-violence space domestically and to have a broader mission, in some cases, hurt our ability to even access that funding." The participant also remarked how this new group of donors raised similar political concerns, "There are some people who really care about sexual and domestic violence, but things like abortion, they don't wanna touch that." With one foot in reproductive health and the other in gender-based violence, SHI found itself caught in between donors' conflicting political positions and an inability to integrate both issues.

Amidst the intensifying national discourse on Title IX and campus sexual assault, the start-up found an opportunity to present its technology as an urgent solution and ultimately rebrand as Callisto. The development staff reflected on how the transition paralleled broader awareness of campus sexual assault as a phenomenon: "It's been interesting to see funders who otherwise truly care about [these issues] generally, suddenly identify the campus movement as, 'Wow, this is its own unique environment where [sexual violence] is happening, how can we be plugging into that work?'" In

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[371] See "Innovating in Sexual Health: An Interview with Jessica Ladd," *Rock* Health, January 24, 2013, https://rockhealth.com/using-tech-to-close-gaps-in-reproductive-health-services-an-interview-with-jessica-ladd/.

addition to identifying the campus as a unique site of a prevailing social problem, the participant had to articulate why technology has a role in anti-violence space. "I think a lot of my job in the first 6-12 months I was here was about having to educate prospective funders and helping them understand, 'Yes, you can fund advocacy and that's important. Yes, you can fund policy, that's also really important, and, yes, you can do the brick and mortar support, that's important. But now there's this new emerging vertical of tech in this space, that just didn't exist before.'" The participant recalled challenges in explaining how and why technology matters to older donors unfamiliar with the campus context and the concept of digitized reporting tool. Besides, the SHI team had already moved on to Callisto: "It was the thing we were most excited about, and we were seeing a lot of success with [it]."

Once the decision to rebrand was made, there was little doubt that the vendor would maintain its not-for-profit structure. As repeatedly stressed by Callisto employees, the vendor is distinct from its competitors in the market of safety and reporting technologies where many are for-profit.[372] The not-for-profit status is further integral to Callisto's operation and how it engages with donors and clients. In some higher education institutions, students cannot accept external funding, precluding the possibility of advocacy organizations providing direct funding to students. Callisto thus serves as an intermediary service. "A foundation cannot go and support a student group at a specific campus, but they could support a non-profit that's working to support advocacy on that campus, or that's working to support the development of technology that would aid that campus," explained a participant. The non-profit status enables Callisto to assume an explicitly political tone and align with students, while maintaining its commercial relationship with higher education institutions.

Reporting as an epistemic intervention

Examining Callisto's vision, operating model, and governance structure illustrates how Callisto positions itself within the discursive context of campus gender-based violence as an ally and an advocate, even as it maintains fiscal responsibilities to

[372] Most notably, a for-profit reporting application called Lighthouse launched shortly after Callisto. See Tyler Kingkade, "Why Colleges are Worried About a New Sexual Assault Reporting Website," *Huffington Post*, February 5, 2016, https://www.huffingtonpost.com/entry/rape-reporting-website-colleges_us_5720e4b5e4b0b49df6a9c8c4; Kate Sim, "Victim Blaming Meets Technological Objectivity: Anti-rape Technology and Its Design," *XYZ*, https://xyz.informationactivism.org/en/victim-blaming-meets-technology.

higher education partners and defers to Title IX policies. Through the matching algorithm, encryption, and trauma-informed interface, Callisto promises a reporting experience that is empowering, autonomous, survivor-centered, and flexible. Yet it remains just one reporting channel confined to the ecosystem of Title IX complaints. Now that Callisto has been situated in the broader cultural context, I take the technical walkthrough to delve into the use-environment. Callisto's interface is charged with a daunting task of guiding the user through a charged process, while affording her credibility in preparation for adjudication.

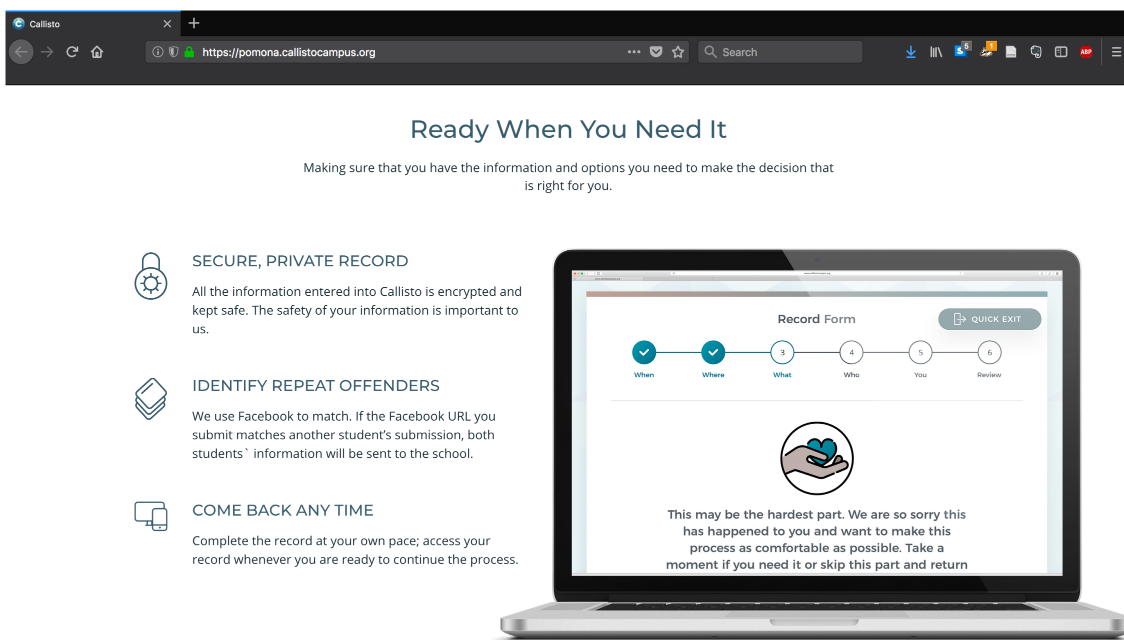

Fig. 12. "Ready When You Need It" from Callisto's reporting homepage. Screencaptured by author from May 7, 2018.

What emerges as a result is the interplay of the campus rape imaginary and the perceived credibility of data and technology that push and pull against each other. At the center of this friction is the notion of the survivor as an incompetent and unreliable knower of her own experience of violence. Callisto's attempts to rectify this expands the software's objective from purely procedural to epistemic—it functions to restore the survivor-user as a competent and trustworthy epistemic agent. My technical walkthrough in this section demonstrates how the interface, even as it tries to lend a digital helping hand, negotiates the epistemic politics of rape to conflicting ends. I begin by discussing how the application takes trauma as a mental model to construct an environment eased

of cognitive load for the user under duress. Then, I investigate how, in spite of its gesture towards an expansive understanding of gender-based violence, its articulation of reportable forms of violence, in response forms and categories, reifies the campus rape imaginary. This discussion is followed by the incentives embedded throughout the interface to encourage reporting, reinforcing its vision and metrics of success. Finally, I take the "time-stamp" to illustrate how the perceived objectivity of metadata simultaneously enhances and reduces the survivor-user's credibility.

Designing for trauma

Before I explore how Callisto takes trauma as a mental model, a theorization of the interface is in order. A digital interface is task-oriented: its particular arrangement serves to facilitate the user's decision-making process. Take, for example, the many buttons and pages leading up to the creation of an account ID and password that enables social media use. The location of the buttons, the amount of information delivered, color scheme, and typeface style are just a few examples of design choices that collectively orient the user towards performing a series of tasks that meet the interface's ultimate objective. Phenomenological interpretations of the interface contend that this is not a linear, determinist process in which power is enacted on the user. Rather, design is an interactive and relational process through which certain user subjectivities are negotiated, produced, or challenged. In their phenomenological reading of credit loan websites, Ash et al. propose a vocabulary of friction, threshold, and transition to theorize digital interfaces.[373] Interfaces are "laden with frictions,"[374] the affective, bodily, practical, and technological tensions, mediations, and hesitancies between the human user and the interface.[375] The designer's objective, then, is to minimize these "frictions" to facilitate a smooth "transition" to the next task. Key stages during this process, or "thresholds,"

[373] James Ash et al., "Digital Interface Design and Power: Friction, Threshold, Transition," *Environment and Planning D: Society and Space* (2018).

[374] The vocabulary of friction takes a cue from feminist geographer Gillian Rose's digitally-mediated cultural productions require unique conceptual and methodological frameworks that can address new modes of circulation and meaning. See Gillian Rose, "Rethinking the Geographies of Cultural 'Objects' through Digital Technologies: Interface, Network and Friction," *Progress in Human Geography* 40, no. 3 (2016): 334–351; James Ash et al., "Unit, Vibration, Tone: A Post-Phenomenological Method for Researching Digital Interfaces," *Cultural Geographies* 25, no. 1 (2018): 165–81.

[375] Ash et al. draw from Brian Massumi's concept of "infra-individual tendencies," which describes the affective, chemical, sensory, and memory forces that contribute to how a person feels and acts. See Brian Massumi, *The Power at the End of the Economy* (Durham: Duke University Press, 2015). Massumi's concept stems from broader literature on the political life of affective, emotional, and sensory experiences. See Sara Ahmed, *Cultural Politics of Emotion* (Edinburgh: Edinburgh University Press, 2004); Anne Pellegrini and Jasbir Puar, "Affect," *Social Text* 27, no. 3 100 (2009): 35–38; Lauren Berlant, *Cruel Optimism* (Durham: Duke University Press, 2011).

represent integral moments of decision-making that, when successful, ensure the user's continued presence towards the interface's ultimate aim.

An interface like Callisto is fraught with frictions. In addition to the frictions "inherent"[376] to interfaces, Callisto must guide a user under duress through a charged process. As a reporting software with options to record, match, or report, Callisto must manage frictions to ensure the user completes the record and possibly considers matching or reporting. During that process, Callisto must additionally manage frictions unique to the decision-making challenges a distressed user may encounter. A designer, recounting her experience of re-designing the interface, describes her approach as "taking trauma as a mental model":

> We make sure we take into account what it is to be in that mindset [of having been sexually harassed or assaulted], and design for that mindset. A lot of logic doesn't make sense, they get easily overwhelmed, long sentences, they are not gonna read that, they're going to read bullets over paragraphs, so keeping that in mind while designing, simplifying things, making things bold when they need to be bold, cutting out messaging that doesn't need to be there.

In other words, the interface must "reduce cognitive load" and "build trust" to ease user experience specific to Callisto's target user base. Beyond the interface, the information collected through the software is expected to undergo partner campus's Title IX adjudication process, adding memory reconstruction to its goals. Callisto thus must manage frictions arising from information overload of undergoing a complex administrative procedure, memory loss and retraumatization, and institutional distrust.

To reduce cognitive load, reconstruct memory, and build trust, Callisto offers a "trauma-informed" experience based on Forensic Experiential Trauma Interviewing (FETI) technique[377] developed by Russell Strand, Chief of Behavior Sciences Education and Training Division in the US Military Police School and neurobiological research on sexual trauma by Jim Hopper.[378] Conventional forensic practices are grounded in the assumption that the cognitive brain (prefrontal cortex) is always able to perform higher-level cognitive tasks, such as reasoning and decision-making. FETI and Hopper, however, contend that a traumatic event triggers the defense circuitry in the brain and impairs the prefrontal cortex's ability to perform cognitive tasks. Instead, a less

[376] Gillian Rose, "Rethinking the Geographies of Cultural 'Objects' through Digital Technologies: Interface, Network and Friction," *Progress in Human Geography* 40, no. 3 (2016): 343.
[377] Russell Strand, "The Forensic Experiential Trauma Interview (FETI)," n.d.
[378] See "Sexual Assault and the Brain," https://www.jimhopper.com/sexual-assault-and-the-brain/.

developed part of the brain assumes the task of capturing the traumatic moment and does so by reacting to perceived threats. Sexual assault victims, Hopper's study finds, may not remember the date of the incident, but may easily recollect sensory details.[379] Thus, an investigation and adjudication process that aims to accurately reconstruct a survivor's account must center on experiential memories, rather than "factual" details of who, what, when, where, why.

Strand proposes conceptual shifts in interviewing victims and witnesses of traumatic incidents, such as sexual assault. First and foremost, the interviewer should acknowledge the incident as traumatic and painful. In recognizing this, the interviewer can establish trust with the victim whose sense of safety and trust have been violently disrupted by the incident. By establishing an interviewing relationship based on trust, the interviewer "may be invited" to the victim's memory of what happened.[380] Next, Strand advises the interviewer to ask open-ended, experience-focused questions that center on helping the victim reconstruct the incident. What kinds of sensory details stand out to them? How did the incident affect them physically and emotionally? What detail, thought, and feeling do they keep coming back to? Writing is a key component of memory retrieval. Recounting her conversation with Jim Hopper, Callisto's senior designer explained: "The more you write it down, the details you write down, the more you can connect all these items of memory because in trauma, what happens is that, you just remember at peaks of fear and it drops off in ebb-and-flow type of way, so we try to aid in that process as much as possible without being a live interview."

Callisto aims to reproduce this experience in its digital interface. To do this, Callisto must manage trauma as a source of friction. The new interface since 2016 demonstrates how the vendor took FETI and Hopper's research as building blocks to restructure, redesign, and reconfigure the recording form. These design choices reflect how trauma becomes one of the frictions the interface must manage to facilitate smooth transition across key thresholds. To accomplish this, the senior designer articulated reducing the cognitive load, rehabilitating memory, and establishing trust as three design objectives. The designer simplified the form into six pages—when, where, what, who,

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[379] Hopper adds the captured sensory details reflect the subject's habits and reflexes. In the absence of the prefrontal cortex, the subject draws from previous habits and reflexes of responding to stress and these familiarities are deeply gendered. That a woman who was raised to be polite is unable to verbalize, 'No,' during her sexual assault is, according to Hopper, is a completely rational behavior. Polite response is her bodily habit of responding to stressful and threatening situations. This also means that survivors' previous experiences inform how they respond to traumatic incidents.

[380] Strand, 3.

you, and review, and included a progress part with circles denoting each part at the top of each page. Each page contains three to four questions at the center of the interface. On streamlining this, the designer explained:

> It's a multi-form process designed to make sure we don't bog them [users] down, reduce the cognitive load for the user. It also spreads out the experience so it doesn't seem as daunting, if it was one long page. Generally, the drop-off rate of these is a little bit lower than just a really long page that you have to fill out. Especially for a survivor that's obviously been traumatized, we want to keep in mind they can be easily overwhelmed.

Minimalist aesthetic designs complement the simplified and streamlined flow: "I like clean lines, very minimal, very soft natural colors. I think that we should be out of the way of user experience, I think it shouldn't clutter the page, I think it should reduce cognitive load." The website's color scheme in soft teal (with touches of soft orange) continues in the interface where bolded typeface, buttons, and markers in dark teal emphasize thresholds. Questions are delivered in bold, preceded by soft gray typeface noting the question number and followed by instructions and assurances in regular black typeface. Unlike the first design, the backdrop is an open, white space that pulls the focus on the questions at the center and minimizes distraction, thereby further eliminating any additional sources of cognitive load.

The designer repeatedly emphasized "progressive disclosure" as her approach to memory rehabilitation. The designer remarked that she was surprised by the natural fit between user experience (UX) principle of progressive disclosure and trauma-informed reporting techniques. Per FETI's guidance, Callisto's design team created a series of questions that center on experiential memories to accurately reconstruct the user's memory.

> FETI is obviously an interview so it's a two-way street and you have to ask questions around central details and central details might be not central to the investigation but central to the experience, so that's more a conversation to be had. Whereas we can't have a conversation, but we can at least ask nonlinear questions. So, like, "what happened next? What happened next," we avoid those. We make sure that the user, survivor feels believed. We use words like, "Are you able to remember?" stuff like that, make sure to use gentle language in creating this form. We don't use leading questions because we don't want to create false memories or false memory recollection or anything like that, we don't want to influence memory negatively.

This was largely carried out through progressive disclosure, a UX principle that advocates for decluttering the interface to reduce cognitive load and encourage smooth flow. Progressive disclosure intuitively maps onto Callisto's efforts to minimize friction from trauma by delivering information in digestible chunks and signposting the process.

> I'm a big believer in progressive disclosure, don't overwhelm the user with a ton of information, just give them little tidbits as they go. […] Sort of like handholding through the process, which builds trust in the system. It also helps conversion bc if you overload them at the onset, chances are, they're gonna drop off. […] Ultimately, if it doesn't work, it could be the prettiest thing ever, if it doesn't work, it's not worth doing. It's not gonna get you where you need to go, people are not gonna use it.[381]

On the interface, questions move from multiple-choice response to an open response form. Per FETI's guidance, each category of questions is structured to move from the specific to the broad: specific questions about date, time, and location are presented in a multiple-choice format to trigger memories, and broader questions follow in an open form in which user can add any additional details they recall. According to the designer, this format serves two functions: first, it facilitates experiential memory recollection; and second, it prevents false memory construction by grounding it is concrete details.

[381] The designer further added that such minimalist design contributes to the interface's accessibility: "Especially for people with dyslexia, bolding, boldening type works really well for them, so we want to make sure that we also service these people with cognitive disabilities, make sure it's really streamlined for them, make sure it's really readable and understandable, and not cluttered visually."

Fig. 13. Record form. Screencaptured by author from February 6, 2019.

Finally, the record form added reminders and assurances, and expanded its response options to build trust with the user. Previously, the record form included multiple response options with an "Other" option intended to capture all responses that do not fit into preexisting categories. The new design includes distinct options for uncertainty ("I don't know") and reluctance ("I'd rather not say"). These are emotional states generally unavailable in traditional intake forms. The product designer explains this as a unique addition that draws from usability tests where subjects struggled to express the complex range of their emotional states in describing the incident.

> It's really hard, at least, initially to define what happened, so to have multiple options was really important. What we also did was, break up "Other" and "I'm not sure." If you see here [old design], they're together [as "Other/I'm not sure"] and those are not the same things at all, in my mind. "Other" is other and "I'm not sure" is [different]. So what we did was, we brought that up as well.

By separating uncertainty and reluctance from "Other," Callisto acknowledges the complex range of emotions users may have in recollecting their experience. This acknowledgement is a telling gesture towards centering on survivor's experience.

Fig. 14. Record form. Screencaptured by author from February 6, 2019.

Reminders and assurances are dispersed throughout the interface to create a reporting experience "baked in empathy."[382] Fig. X above is perhaps the most important threshold of the entire record form. Halfway through the form, the user is finally asked to recount what exactly happened. This is accompanied by a literal helping hand and a friendly message, "This may be the hardest part. We are so sorry this has happened." The message is both a reminder and an assurance that acknowledges the difficulty of recounting a traumatic memory[383] and encourages pacing the process as the user sees fit. This creates an interesting tension. Throughout the interface, as the designer remarked again and again, design choices were made to prevent potential drop-offs. Transition from one part to another each presented the possibility of the user dropping off, and aesthetic and cognitive decisions were made to minimize that possibility. Yet, at this critical threshold, the interface encourages the user to consider dropping off. The reminder to take a break brings the user back to the awareness that she can save the record, log off the dashboard, and return to complete the form at the time of her convenience and comfort. In acting against its immediate design objective (the user continues to the next page), Callisto affirms its position as an ally whose priority is the user.

By reducing the cognitive load, aiding memory reconstruction, and building trust, Callisto manages the friction inherent undergoing a complicated procedure under duress. Callisto acknowledges trauma as an ever-present source of friction for the intended user and employs aesthetic and interviewing strategies to construct a friendly digital environment. Failure to do this would mean the user drops off and potentially does not seek out reporting options, and this is a scenario contrary to Callisto's vision of empowering survivors with self-directed reporting options. At times, the interface operates against its interests but does so in order to ensure a comfortable and self-directed user experience. The following sections dig deeper into specific components of the record form to examine to what extent Callisto is able to maintain its allegiance to the user.

[382] "Impact Report."

[383] Again, Callisto encourages experiential information and sensory details to facilitate memory retrieval: "We put, just put anything you can remember, what you saw, smell, taste. This is in line with FETI bc a lot of sensual details are around senses, so we really want to make sure the survivor focuses on those, so that's why we say it here, just guide them into help them with their memory retrieval" (Senior designer).

CAMPUS RAPE IMAGINARY REINFORCED

Even with these inspired design choices, the campus rape imaginary lingers. Earlier in this chapter, I discussed how Callisto's vision presupposes a fixed understanding of sexual violence on campus as attempted or completed rape. This assumption is reproduced in the record form as well, as the categories of violence are articulated in the vocabulary of consent to indicate sexual assault as the intended use-scenario. I take from Bowker and Star's assertion that "all information systems are active creators of categories in the world as well as simulators of existing categories"[384] to argue how the record form reinforces the campus rape imaginary. Moreover, it illustrates the lack of consideration for non-physical forms of violence at the institutional level as schools and the Department of Education concentrate their resources on sexual assault. This internal tension within Callisto in the broader cultural and policy context of Title IX means that the record form fails to manage trauma-friction for those users at the periphery of the imaginary.

Questions 1 through 5 begin collecting details about the incident being reported, and the seriousness of the questions increase as the user moves on to the next page. Each page is "laden with" friction, as the questions that mark each page pose the possibility of user drop-off. To minimize this, response options are presented in preexisting categories so that the user can simply click on the option best applicable to them, consider adding in experiential details, and move on to the next page. If the categories accurately capture the user's experience, the friction from question has been managed and the user can transition to the next page.

Response options and the categories that constitute them thus reflect Callisto's operating assumptions about its intended use-scenario. By considering the response categories for temporal and spatial details in the first two questions, it can be gathered that the record form anticipates the user to be a survivor of a single incident of sexual assault. Take the first question: "When did it happen?" The caption that follows, "If it has been less than 5 days, you may still be able to get a forensic exam," illuminates what the form means as "it." A forensic exam, also known as rape kit, collects DNA evidence of sexual assault from the victim's body, clothes, and other belongings. "It," then, refers to rape. The following question, "What is the exact date?" further confines the timeframe

[384] Geoffrey Bowker and Leigh Star, *Sorting Things Out: Classification and Its Consequences* (Cambridge, Massachusetts: MIT Press, 2000), 321.

with the assumption that the incident has a single, exact date. Similarly, the second question on the location takes the campus as the main reference point. Together, these questions and response options reveal a temporally, spatially, and typically defined use-scenario for Callisto.

The fourth question continues to reify sexual assault as ideal use-scenario. This marks a major threshold, a key moment with heightened friction the interface must manage to ensure the completion of the record form, as the form directly transitions from collecting basic information to request details about what exactly happened. To minimize the trauma-friction here, the form begins with a bolded statement, "Nonconsensual sexual contact is never okay." The statement functions as both an assurance and definition. "Nonconsensual contact is never your fault," the form assures the user that she is with a sympathetic audience and that whatever brought her to the form was "never okay." The definition of consent that follows is rather abstract, though it does describe consent as unambiguous ("by word or action"), expressed (silence is not an affirmative), non-transferable ("consent to one thing without consenting to another thing"), and revocable ("you can withdraw at any time"). These tenets appeal to the language of affirmative consent[385] and reflects the vendor's vision of equitable sexual consent. At the same time, the deferral to school policy in the hyperlink that appears at the end represents the constraints of Callisto's operating model. The vendor's vision aside, it is subject to the campus partner's policies and must provide a definition of consent in line with the partner's. In spite of this constraint, the form aims to define consent in a broad and assuring manner to ease the user into documenting what happened.

385 The term "affirmative/enthusiastic consent," also known as "yes means yes" model of consent, was coined by Jaclyn Friedman and Jessica Valenti in their 2008 book *Yes Means Yes!: Visions of Sexual Power and a World Without Rape.* The main contention is that, rather than defining rape as the presence or absence of negative consent (a verbal "no"), a model of sexual pleasure grounded in the language of affirmation and enthusiasm is a more empowering alternative for feminine sexuality. This definition refers back to Antioch College's then-laughed-at decision to revise its sexual assault policy to one of affirmative consent in 1990. With increasing awareness of bodily autonomy and campus sexual assault, higher education institutions (see http://affirmativeconsent.com/consentpolicy/) have adopted an affirmative consent policy. Famously, the state of California passed a law SB 967 in 2014 designating "affirmative, unambiguous, and conscious" as thresholds for sexual consent, though it has since been vetoed by Governor Jerry Brown in 2017. See Katherine Rosman, "The Reinvention of Consent," *New York Times*, February 24, 2018, https://www.nytimes.com/2018/02/24/style/antioch-college-sexual-offense-prevention-policy.html.

Fig. 15. Record form. Screencaptured by author from February 6, 2019.

Moreover, the vocabulary of consent here is important to note because it stabilizes sexual assault as the intended use-scenario. In doing so, Callisto affords the user an expressive vocabulary to describe their experience. The robust range of negative consent in the response repeats how Callisto manages friction with choices for uncertainty and reluctance. In question 4, the squared options express the multiplicity of negative consent, ranging from “I didn’t want it” and “I didn’t consent” to "I was asleep or unconscious” and “I was intoxicated.” The first two choices enable the user to declare that what transpired was not intended nor desired. The following two capture the experience of witnessing violence done to the user. It indicates the user’s position as a subject whose particular state of incapacitation, whether induced by fatigue or substance, prevented autonomous decision-making. Finally, the final three options, a breakdown of former “Other,” note uncertainty, reluctance, and confusion. By providing multiple options that can be chosen simultaneously, Callisto affords the survivor-user the ability to express the complex range of her negative consent.

However, this robust language is confined to sexual assault. The vocabulary of consent—“I wanted it" or “I did not want it”—does not adequately capture the experience of vulnerability and violence arising from intimate partner violence, stalking,

harassment, and others.[386] Much later in the form, a question about the user's relationship with the alleged appears, but its supplementary question ("How many perpetrators were there?") evokes the familiar trope of campus rape of a single student by a group of male students in fraternities[387] or athletic teams.[388] The absence of vocabulary to capture the relational dynamics specific to intimate partner violence is not unique to Callisto. Even with the growing awareness of sexual assault, "schools are totally lost on how to respond to violence when it occurs in the context of a dating relationship," according to student survivor advocate and Know Your IX co-founder Dana Bolger.[389] One student advocate from my fieldwork echoed this sentiment:

> [It is] drilled into students' head that sexual assault is a priority issue on campus. So stalking, partner violence...it's so much of a footnote tacked on to the end of community awareness discussions, such as orientation, so it's something that's never going to get remembered by most students.

In fact, even the new guidance on Title IX as it applies to gender-based violence grapples with how to address intimate partner abuse as its longevity, accumulative, and iterative nature challenges Title IX's pervasiveness and seriousness requirements.

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[386] Feminist and queer critics of color have contended that the vocabulary of consent fails to capture the power dynamics of sexual assault. Feminist thinkers in the tradition of radical feminist politics (MacKinnon 1987, 1993; Dworkin 1987; C.E., 2012) argue that gendered structures of power and sexuality render consent socially meaningless. Famously, radical feminist and legal scholar Catharine MacKinnon wrote, "Man fucks woman; subject versus object" (1991), to express how women are already positioned as sexual objects and, when legal systems are built around this presupposition, consent fails to protect and assert the choices of non-male citizens. Thinkers of color have further added that (hooks 1997; Hartman 2008; Srinivasan 2018) racialized politics of desirability position women of color as already consenting. Consent's binary model of desire also reduces the complexity of power and vulnerability in the context of adolescence (Fischel 2016). Moreover, consent model maintains legal presupposition of sex as heterosexual and penetrative. Because sex and rape are equated (with the only difference between the two being the presence or absence of consent), legal scholar Michelle Anderson (2004) argues that other forms of sexual contact, including non-penetrative modes of intimacy and queer sexuality, are bracketed *under* penetration. This means that a "yes" is interpreted as affirmative consent to penetration and that this "yes" assumes consent to "lesser" forms of sexual contact.

[387] Discourse on campus "gang rape" by fraternities and, by extension, a group of boys, is notable for its language of play, a boys-will-be-boys attitude that takes violence against women as an inevitable component of male sociality. Most recently, the media discourse on Judge Brett Kavanaugh's hearing highlighted the play framing ("It was drunk teenagers playing seven minutes of heaven," https://twitter.com/redsteeze/status/1041404829514584065).

[388] Gang rapes by student athletes is unique for being articulated as a detriment to the promising future prospects of assailants. The rhetoric goes that the promising future prospects of these student athletes should not be compromised by petty male bonding activities. In 2013, a case of rape by two football players were lamented for how it would adversely affect the athletes' "promising futures" (see https://gawker.com/5991003/cnn-reports-on-the-promising-future-of-the-steubenville-rapists-who-are-very-good-students). An ongoing case about repeated gang rapes of women in Baylor University was described as "bonding ritual" (https://www.npr.org/sections/thetwo-way/2017/05/17/528804172/new-lawsuit-alleges-baylor-players-gang-raped-women-as-bonding-experience). The Baylor case also highlights how such assaults rely on willful institutional ignorance and how the monetary prospects of student athletes creates an additional incentive for the schools to remain silent.

[389] Katie Baker "Domestic Violence on Campus is the Next Big College Controversy," *Buzzfeed News*, June 9, 2015, ohttps://www.buzzfeednews.com/article/katiejmbaker/domestic-violence-is-the-next-big-college-civil-rights-battl. See also Amanda Marcotte, "Domestic Violence is as Serious a Problem on Campus as Sexual Assault," *Slate*, June 10, 2015, https://slate.com/human-interest/2015/06/title-ix-should-cover-domestic-violence-as-well-as-sexual-assault-but-the-problem-is-less-well-understood.html.

What is absent on Callisto thus illustrates the complex politics of categories. The vendor may promise an internally robust understanding of sexual violence on campus, but the categories of response available to the user reify the campus rape imaginary by solidifying sexual assault as the intended use-scenario. Through this process, non-physical and non-singular forms of sexual harassment unique to college campuses, such as stalking and cyberharassment, retreat into nonexistence. For the students who experience partner abuse, this absence deters or confuses their potential use. A student advocate on campus recounted how the concentration on sexual assault by the school and by Callisto prevented some students from using it:

> They'll ask our permission, "I know it's not sexual assault but is it okay if they come in here and talk to you" and that's part of our charter, that's part of what we do obviously, not sexual assault specific...But conversation overall is so much based on sexual assault itself that most students aren't going think about [other forms of sexual violence] when they're thinking about us, Callisto, or Title IX.

A Title IX Coordinator even suggested, "I don't see it lending to intimate partner violence and stalking" because "stalking victims want help" and survivors of partner abuse, because of their relationship to the abusive partner, have a more difficult time articulating their experience as abuse. Given these relational dynamics unique to different forms of violence, the Title IX Coordinator said "Callisto cures a very particular situation…[it] remedies a need" specific to sexual assault.

This is what information scholars Bowker and Star describe as a torque, "a twisting of timelines that pull at each other" as lived experiences stand in tension with imposed categories of information systems.[390] The experience of partner abuse does not and cannot fit into the form's categories that narrowly define sexual violence as physical assaults. There is no option to document multiple incidents, interactions that feel minor at the time but, when accumulated, amount to something akin to vulnerability, possibly even hostility. Feminist researcher Liz Kelly describes this as a "continuum of sexual violence"[391] that spans across the many forms, settings, meanings, and intensities to structure social relations according to gendered power differentials. "Biographies and categories fall along conflicting trajectories"[392] as response options fail to grasp those experiences that are repeated and accumulated, from online strangers and loved ones.

[390] Bowker & Star, 27.
[391] Liz Kelly, *Surviving Sexual Violence* (Cambridge: Polity, 1988).
[392] Bowker & Star, 28.

The torqueing of users' experiences against Callisto's categories in the context of Title IX's inability to conceptualize partner abuse illustrates how categories and lived experiences are "co-constructed."[393] At the center of this mutual construction is the campus rape imaginary as the primary metric through which user experiences are categorized and overlooked. Extended timeline, multiplicity of incidents, and non-physicality of threats (both online and offline) students experience torque against Callisto's open response forms and "Other" options.

INCENTIVIZING REPORTING

Earlier in this chapter, I showed how the repeat offender theory of campus sexual assault undergirds Callisto's vision and operating model to identify reporting as a site of data-driven intervention: reporting, by rendering the offender known and thus accountable, can improve institutional distrust from students. The same assumption shapes the record form's particular technological layout to present reporting as an ideal solution. Even as Callisto articulates its three main features—record, match, report—as distinct options through the vocabulary of choice, the record form's visual and technological arrangements present these options as steps *towards* reporting. The recording interface thus negotiates visual and technological frictions to lead the user towards the ultimate task of reporting. I begin this section by discussing by the data imaginary is evoked to position reporting as the desirable outcome for the user. Next, I consider the visual and technical nudges embedded throughout the recording interface that reduce the friction and eases the user towards reporting: I first note the shifts in visual tone in how information about reporting is presented, and I then pinpoint key threshold moments. Finally, I show how the interface's orientation towards reporting is reflective of Title IX's focus on reporting as a solution and a metric of compliance.

The record form's explanatory work that precedes the user's account creation captures how the three features are aligned with the repeat offender theory to portray reporting as a successful and desirable outcome. The caption on top of the record form's main page, "Your journey, your choice," starts to articulate the forms' features in a vocabulary of choice. A big blue button in the middle calls the user to action, to "start your record." The arrow underneath draws the user's attention to the horizontal infographic below that introduces "three distinct options." A few scrolls below, the "Statistics that Matter" sections follows a similar visual pattern. Three pie charts, each

[393] Ibid.

outlined by Callisto's gradient color palette from orange to teal, display an escalating percentage from "Experience" to "Know Attacker" to "Repeat Offenders." The first figure describes the prevalence of sexual assault and highlights its disproportionate effects on women and trans or gender non-conforming students. The second figure explains how these assaults are knowable, because the assailants are known. Finally, the third percentage declares the problematic: in spite of being known, these assaults are repeated.[394] Visually, the pie charts parallel reporting options. Recording is to experience, matching is to know the attacker, and reporting is to identify repeat offenders.

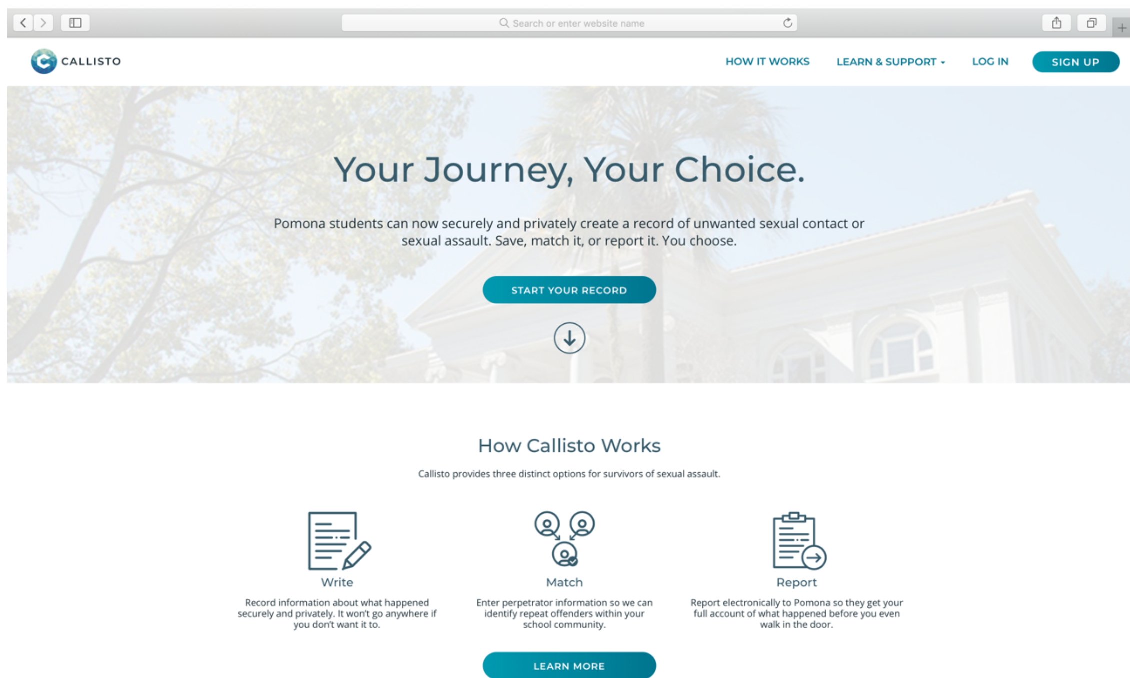

Fig. 16. "How Callisto Works" from the record form's homepage. Screencaptured by author from February 13, 2019.

[394] During my fieldwork, I requested information on these figures' sources. At the time of writing this chapter, I had not received any confirmation from my subjects at Callisto.

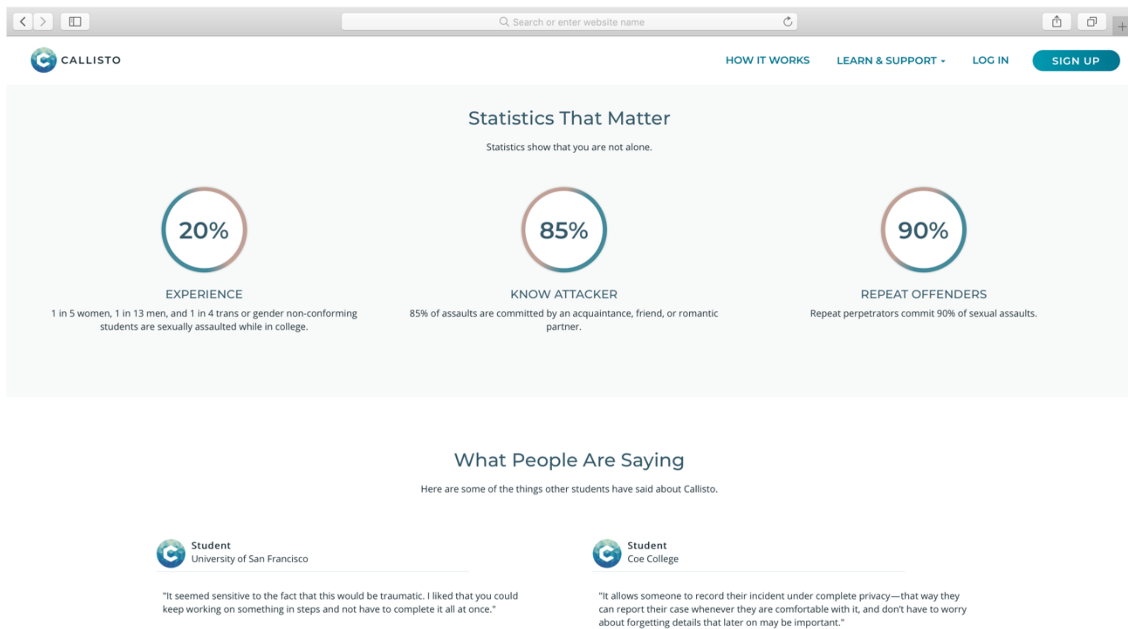

Fig. 17. "Statistics That Matter" from the record form's homepage. Screencaptured by author from February 13, 2019.

This layout illustrates Callisto's internal logic that renders offenders known and campus sexual violence solvable. The use of statistics here is deliberate and telling. Sociologist Beer's theorization of the "data imaginary"[395] is instructive for analyzing how campus sexual violence is articulated in numbers and figures. Beer describes this interpretive impulse as "statistical thinking and the faith in numbers"[396] that grounds much of contemporary cultural rhetoric on data-driven technologies as objective and neutral. In framing campus sexual violence in the language of data, Callisto draws from data's perceived objectivity to render its repeat offender theory self-evident. The repeat offender model thus becomes "a social fact around which behaviors should be bent"[397]; for Callisto, this is done through reporting. The expression of the social world as numbers and figures ("1 in 5 women"), and its visualization as analytics (percentage in pie chart) reflect "visions of contemporary data"[398] as a lens through which the social world becomes known. For Callisto, its ability to increase reports is how campus sexual violence becomes known and solved. The final section of this chapter examines how the data imaginary is deployed in Callisto's attempt to negotiate the politics of credibility.

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[395] David Beer, "The Data Analytics Industry and the Promises of Real-Time Knowing: Perpetuating and Deploying a Rationality of Speed," *Journal of Cultural Economy* 10, no. 1 (January 2, 2017): 21–33.
[396] Ibid., *Metric Power* (Palgrave Macmillan, 2016), 79.
[397] Ibid., "How Should We Do the History of Big Data?," *Big Data & Society* 3, no. 1 (May 4, 2016): 7.
[398] Ibid., 5.

To do this, Callisto embeds visual and technological nudges throughout the record form to incentive the user to report. The record form minimizes friction arising from users' reluctance and hesitance to report by presenting reporting as an easy and simple option through the use of hyperlinks and shifts in visualization. In contrast to the record form's concerted efforts to delineate its features as distinct options, there is a noticeable gap in how it delivers information that a user considering reporting actually needs—what happens after reporting. Consider the "How It Works" page:

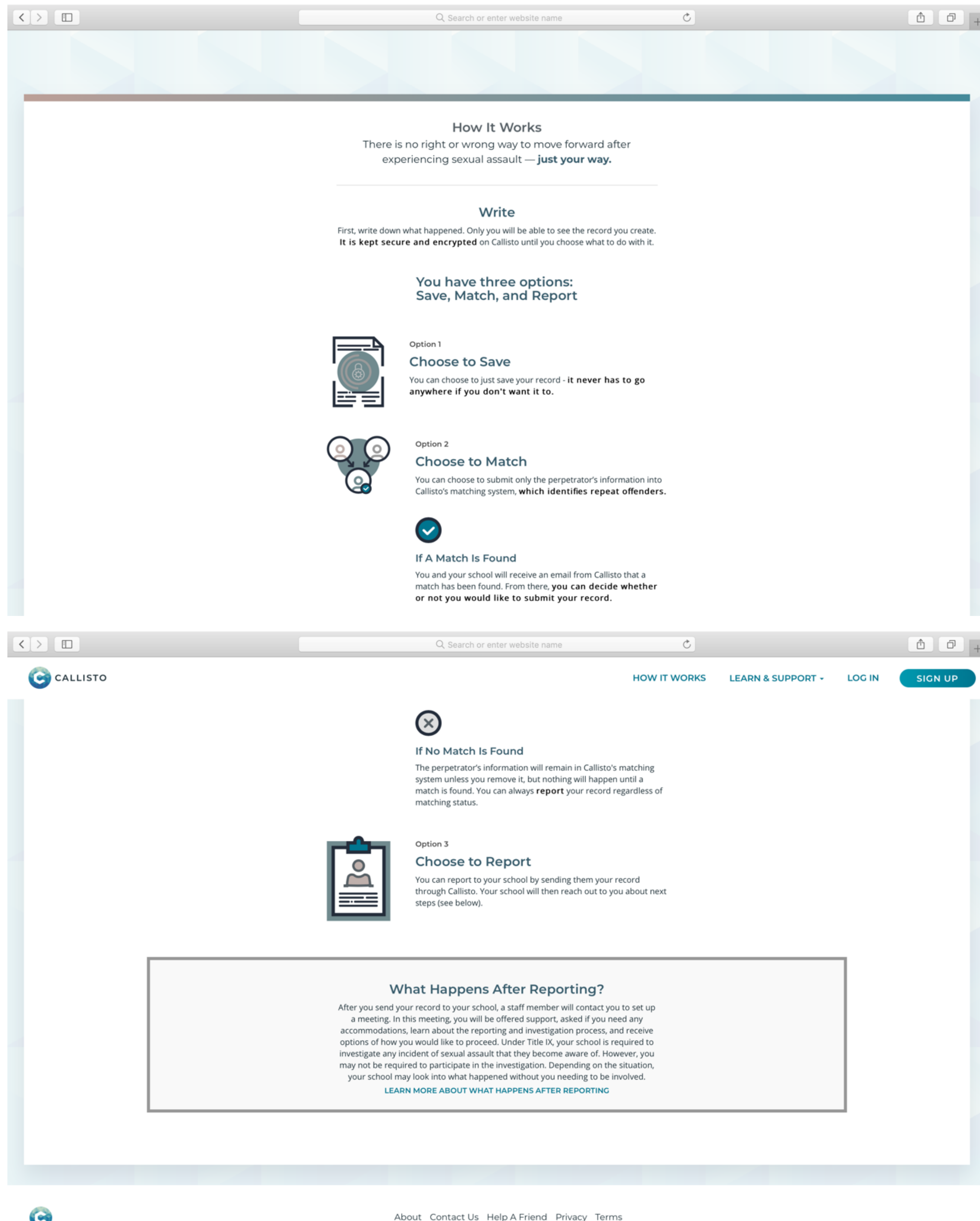

Fig. 18 & 19. "How It Works" from the record form's homepage. Screencaptured by author from February 13, 2019.

An infographic flowchart is displayed to explain the three options through the language of choice. The assurance on top of the page states, "There is no right way or wrong way…just your way," and the remaining page articulates writing, matching, and reporting as choices. The use of infographics with bolded typeface mirrors recording interface's aesthetics to clearly communicate each choice. At the end, however, is a wordy paragraph describing "What happens after reporting?" The lengthy description details how a Title IX Coordinator may get in touch, the possibility of pursuing interim measures, and the degree of the user's participation if an investigation is triggered. A hyperlink at the end directs the user to a separate tab, "Reporting options," where Callisto displays customized content. Unlike the minimalist arrangement and pithy instructions of the interface, this page is filled with lengthy and verbose paragraphs that elaborate on the school's Title IX investigation and adjudication process. There is no infographic or flowchart, nor bolded typeface, to guide the user through weighing the pros and cons of reporting.

A similar deferral to hyperlinks occurs in the dashboard. At the bottom of the dashboard, details about what happens after matching and reporting are hyperlinked.

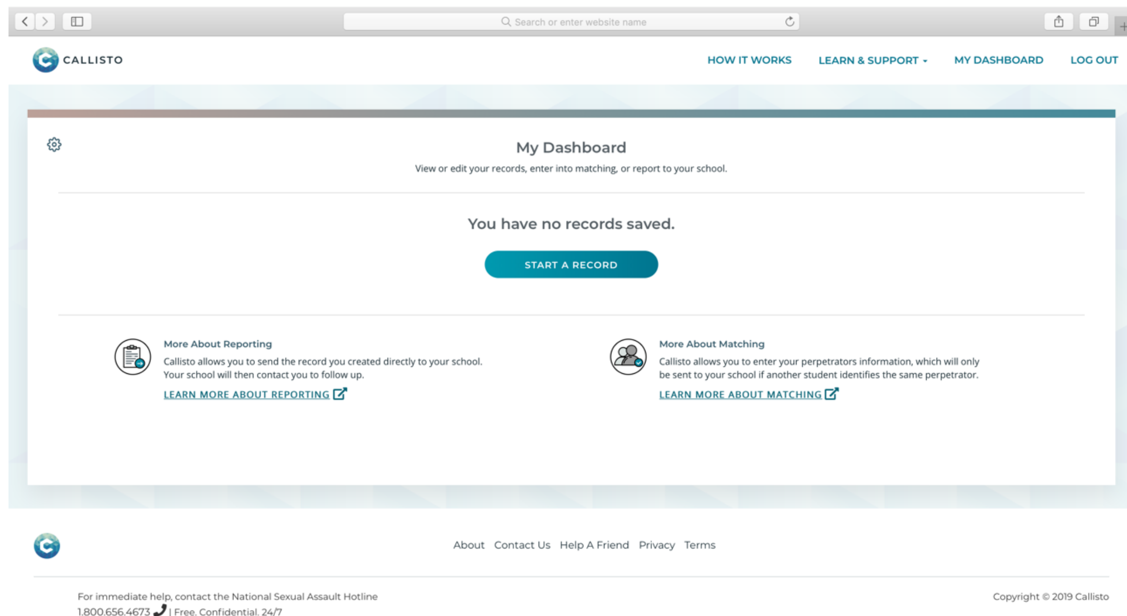

Fig. 20. Dashboard. Screencaptured by author from February 12, 2019.

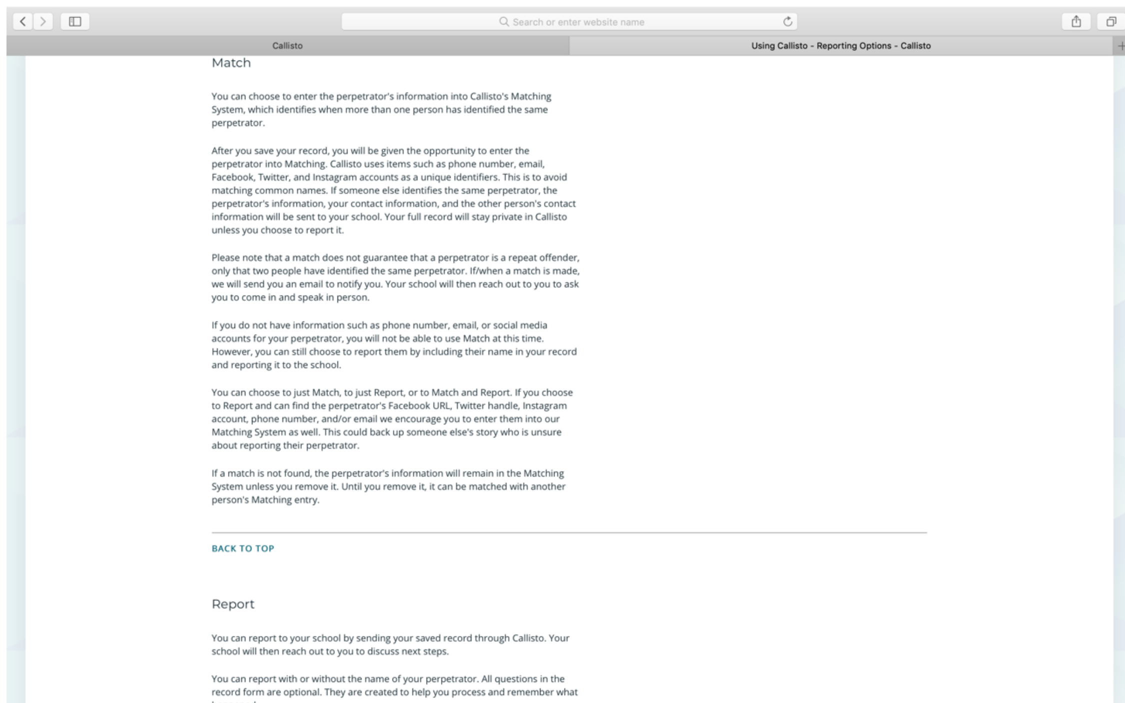

Fig. 21. Hyperlinked page from "Learn more about matching." Screencaptured by author from February 12, 2019.

This shift in visual tone is notable. According to the designer, the decision to use hyperlinks was added to make reporting information more accessible:

> The big question we usually get, or at least what we used to get is, what happens after reporting. It was really unclear, there's nothing on here that says what happens after reporting, it's kind of buried in our resources pages. So part of that page, "How It Works," is a section about what happens after reporting. And like I said, it's very different for each school. In some schools, the report will go to an advocate; in another school, the report will go to a Title IX member, so we do kind of disclose that here, but we wanted to give as much information and be as clear as possible so that the survivors has the information to make the decision that's right for them. I think, hopefully, that will definitely change the user experience, kind of having this on here.

This rationale behind the re-design illustrates how the lack of information on reporting was a main design objective. There is a recognition that the users desired and request this particular information, and that new design choices were made to address this. Yet, when compared to the visual, aesthetic, and cognitive choices made elsewhere in the record form, the deferral to hyperlinks should give a pause. Fig. 12 above is a part of a separate page, "Reporting Options," composed of four sub-sections that explain reporting via Callisto, reporting procedure and Title IX policies in partner campus, and reporting to local law enforcement. Campus administrators highlight this "customizable content" as

an appealing feature, but it reads similarly to Title IX policy documents on school websites where paragraphs and paragraphs of legal jargons overload the user, visually and cognitively.

I now turn to considering the key thresholds placed at crucial moments during and after recording to incentivize reporting. An early threshold for reporting appears in the third question. Following the first two questions about the when and where of the incident, the third question asks the user to document any evidence, electronic or physical. This is still early on in the record form and this placement of evidence request should be taken into account as a design choice. "If you choose to report what happened to your school or the police, they may ask you for electronic and/or physical evidence of what happened," the caption immediately begins to discuss how evidence plays a significant role in what may follow. Again, an assurance to comfort the user that not having evidence would not discount their experience and a lengthy instruction for screenshotting digital evidence and keeping physical evidence in paper bag follow. That this page is placed at the start of the record form, even before the user has had the opportunity to describe what exactly happened, demonstrates how reporting, of the three options, is the central and desired outcome for the vendor.

Fig. 22. Evidence. Screencaptured by author from February 12, 2019.

The most notable nudge occurs at the conclusion of the record. This creates an obvious threshold moment for the interface as the user, at the completion of the record,

may consider the remaining two options Callisto—match or report. The same infographic used elsewhere in the record form appears at the center of the page to ask whether the user would "like to enter the perpetrator into our matching system?" Again, a general description follows with a hyperlink to Fig. 12 at the conclusion. Two buttons are located at the bottom. The button to enter into match is already in teal, paralleling the homepage's call-to-action to start the record, to draw attention to itself. Below, the negative option is presented in white, which further emphasizes "Yes" button above.

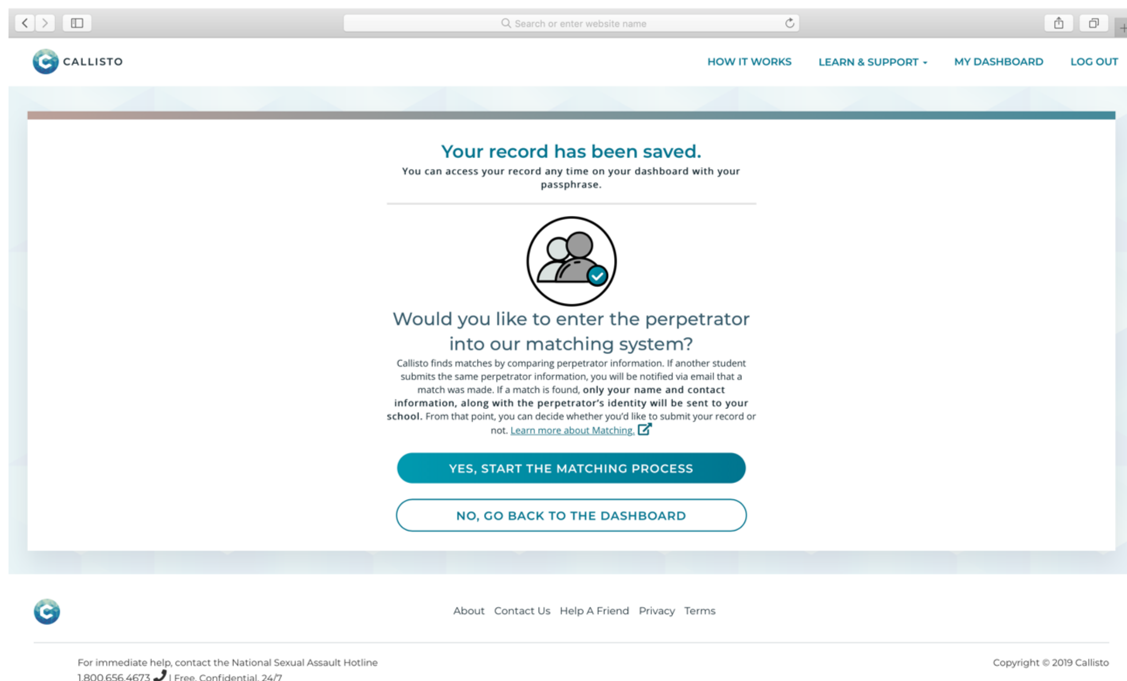

Fig. 23. "Your record has been saved." Screencaptured by author from February 12, 2019.

The nudges to report, in the broader politics of rape, reflect a troubling fixation on reporting as a metric of measuring Title IX compliance and a desired outcome. For the university administrators in Title IX ecosystem, the focus on reporting paints a misguided picture of the range of remedies and reporting options available on campus. One Title IX Coordinator at a large university said that Title IX reporting is "only one side of the equation" that does not fully capture how Title IX procedure can sometimes enable students to seek out remedies best suited to their needs. Another Title IX Coordinator expressed her frustration with this reductive impact of the fixation on reporting. "Of the reports we get, which is already a slice [of all sexual misconduct incidents], only a slice leads to investigation and adjudication," while other "slices" are resolved as interim measures and resolutions. Moreover, there are invisible "slices" of the bigger picture because they are never reported. "I think there's a tendency to make

everything about that last slice [of reporting and adjudication]" even "offender accountability is just one piece" of the broader Title IX ecosystem. This informed university administrators' understanding of Callisto as "a great service… that would help the right person," if the "right person" is someone with "the burning feeling" that the perpetrator needs to "get caught." Callisto, then, is a useful tool for those students who have already decided that they want to report.

For other students who may have yet to make a decision, or desire a less punitive outcome, the nudges towards reporting may be troubling. In fact, student advocates at a liberal arts college partnered with Callisto recounted how Callisto obfuscates the wide range of reporting and resources options for some students. One student advocate explained:

> I've also had the opposite case, where people have learned about it [Callisto], logged onto it, and think that's the only channel through which they can report, and that can cause problems as well. So I'll be on hotline, someone will call and say, "I need to report this, is someone available," and I'll say that I can help them fill out a Callisto report. So I'll go on and sit down and fill it out, and at the end I'll find out they didn't realize there was another channel through which they could have reported. I think that's been problematic as well.

According to attorney and advocate Alexandra Brodsky, higher education administrators and politicians' preoccupation with reporting and thus criminalizing rape masks what made Title IX appealing to student survivors in the first place: robust victim services.[399] Victims may suffer academically,[400] lose out on social and professional opportunities[401] in order to avoid their assailants, and face a range of health issues, including post-traumatic stress disorder (PTSD), substance abuse, and chronic pain.[402] From academic provisions (e.g., extensions) to residential accommodations (e.g., separating assailant and victim from the same dorm), victim services aim to mitigate these negative consequences at individual and institutional levels: individually, the services ensure victims can remain

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[399] Alexandra Brodsky, "Against Taking Rape 'Seriously': The Case Against Mandatory Referral Laws for Campus Gender Violence," *Harvard Civil Rights* 53 (2018): 131-166.

[400] Cari Simon, "On Top of Everything Else, Sexual Assault Hurts the Survivors' Grades," *Washington Post*, August 6, 2014, https://www.washingtonpost.com/posteverything/wp/2014/08/06/after-a-sexual-assault-survivors-gpas-plummet-this-is-a-bigger-problem-than-you-think/?noredirect=on&utm_term=.c9ec0975f990.

[401] Wagatwe Wajunki, "Dear Tufts Administrators Who Expelled Me After My Sexual Assault," *Medium*, April 21, 2016, https://medium.com/the-establishment/dear-tufts-administrators-who-expelled-me-after-my-sexual-assaults-25d109c464f6.

[402] Michele Black, Kathleen Basile et al., *"The National Intimate Partner and Sexual Violence Survey (NISVS): 2010 Summary Report,"* National Center for Injury Prevention and Control, Centers for Disease Control and Prevention (Atlanta, GA: November 2011), https://www.cdc.gov/violenceprevention/pdf/nisvs_report2010-a.pdf.

on campus to complete their education and, institutionally, services “fight inequality by ensuring a large percentage of college women and other disproportionately targeted student populations do not fall behind their peers.”[403] This aspect of Title IX is not evident to the user who accesses information about reporting through Callisto because it is buried in paragraphs of school policy.

Thus far, this section explored how the recording interface orients the user towards reporting through its appeal to the data imaginary and visual and technological arrangements. The next section brings together an earlier discussion of the campus rape imaginary with the “faith in numbers” to examine how Callisto negotiates the politics of credibility.

A TIME-STAMP OF CREDIBILITY

Upon completing and saving a record form, the dashboard displays a receipt on the left-hand side. To the right are options to edit, match, report, or download. As promised, no details pertaining to the content is shown, but a set of time is noted: time of record creation and the time of last edit. This is what Callisto describes as a "time stamp"—a feature unique to Callisto that "lead[s] to a more rapid and thorough investigation and reduce[s] the chances for human error." This final section examines how Callisto employs the data imaginary through the metadata of time to afford credibility to user’s testimonial. In doing so, Callisto functions as a credibility augmenting object to rectify the user as a competent and trustworthy knower of her own experience of violence.

[403] Brodsky, 147.

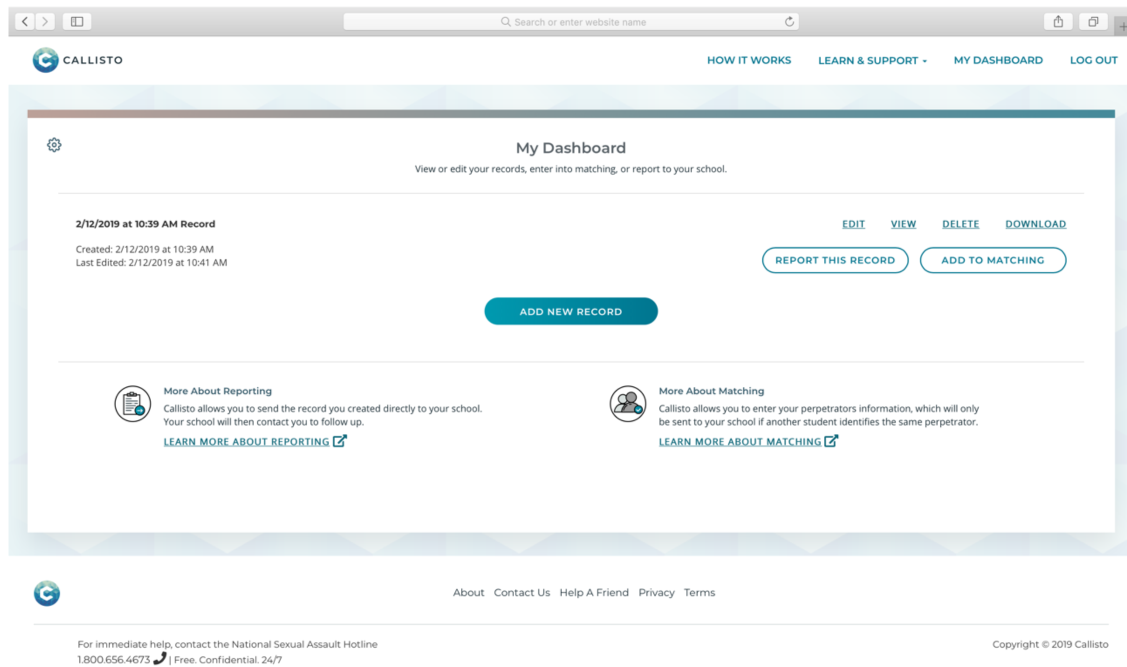

Fig. 24. "My Dashboard" with a saved record. Screencaptured by author on February 14, 2019.

Before I continue, a discussion of credibility is in order to situate Callisto's role as a credibility increasing object. For feminist philosopher Fricker, credibility is fundamentally epistemic: to be believed is to be recognized as a trustworthy and competent knower of her lived experience.[404] In this regard, the conditions in which credibility is assigned to different bodies reflect how power structures operate along identity lines. Feminist scholarship on the construction of femininity as duplicitous, incompetent, and hysterical is especially instructive here. The recurring figures of monstrous women in Western culture, such as Medea, Medusa, and Melusine, capture duplicitousness as an essential feminine quality. Literally rendered as half human and half monster, these witches and beasts represent the feminist subject as untrustworthy. The gendering of household technologies like the microwave from novel inventions to humble tools appeals to another familiar trope of the incompetent housewife.[405] Consider also the image of the hysterical woman, à la Charlotte Perkins Gilman's *The Yellow Wallpaper*, wallowing in pain: her pain is perceived as an unreliable exaggeration and thus dismissed, leading to detrimental consequences. A common thread across these

[404] Miranda Fricker, *Epistemic Injustice: Power and the Ethics of Knowing* (Oxford University Press, 2007).

[405] Cynthia Cockburn and Susan Ormrod, *Gender and Technology in the Making* (SAGE Publications Ltd, 1993).

different images is the notion that a feminine subject is an untrustworthy and incompetent knower of her internal and external world. She has "credibility deficit" because of her capacity as a "knower" and thus a "giver of knowledge."[406]

Such stereotypes function "as heuristics in our credibility judgements."[407] While the examples I considered are negative and pejorative, stereotypes, both good and bad, are ever-present in everyday testimonial exchanges; both the speaker and hearer rely on "social perceptions of each other"[408] to guide their interaction. These perceptions are reflective of power structures predicated upon "shared institutions, shared meanings, shared expectations"[409] to construct, reify, and maintain a given social order. As the examples I considered demonstrate, these perceptions are articulated visually. Take the example of a white person who avidly denounces racism, but, unconsciously, clutches her purse when a dark-skinned person walks by. Her bodily reaction is incongruent with her stated belief, but such is the power of the social imaginaries that impact our judgments.[410] The tremendous capacity to inform our judgments affords great power to social imaginaries, thus rendering them "an ethical and epistemic liability."[411] When a social imagination is favorable to an agent, he has "credibility excess"; when unfavorable, she has "credibility deficit."[412] As my pronoun use here notes, such allocation of credibility is not random and operationalized along the axes of identity, including gender.

[406] Fricker, 16.

[407] Ibid., 30.

[408] Ibid.

[409] Ibid., 11-12.

[410] Fricker, 37. Fricker writes, "Images are capable of a visceral impact on judgment, which allows them to condition our judgements without our awareness." This commentary on the visual is in the context of her normative claims about the role of social imaginations, but her gesture towards a theorization of the visual is in conversation with this dissertation project's conceptual and methodological underpinnings. This will be discussed in Chapters 1 and 2.

[411] Ibid., 38.

[412] Ibid., 17. Fricker defines social imaginations of a certain attribute assigned to a social group as an "identity stereotype," and specifies "prejudice" as negative versions of such. Underlying this categorization is the assumption that stereotypes can be value neutral. Consider Fricker's example of "women are intuitive" as a stereotype that can be positive, neutral, and negative. It could be used positively in interpersonal settings to advance the affective insight of a woman. It could be neutral as a noncommittal observation. It could also be negative when generalized to such an extreme that it overrides women's capacity for rationality. It is not the content of the statement, but, rather, the extent of generalization that gives such stereotype its value as good or bad. While the social value of a stereotype is outside the remit of this thesis, I want to trouble Fricker's value neutrality argument. Take the example of racial fetish, which assigns "favorable" stereotypes along racial and ethnic lines. Individual stereotypes may have positive intentions and may even have positive effects. However, they ultimately serve to reify bodies of color as objects of white gaze through which their differences acquire social value *because* they are perceived as strange and exotic. This applies to Fricker's own example of women's intuitiveness as well. Interpersonally, the intuition stereotype may have positive effects on individual women, but the widespread perception of women's affective intuition facilitates unequal distribution of affective work to women. What I want to highlight in these examples is that, while the content of the stereotype may be value-neutral, when embedded and deployed in the context of structural power, they serve to minimize the full human value of marginalized subjects.

Woman's presumed credibility deficit is certainly a liability in the context of rape. The victim, almost always feminized, suffers further credibility loss because the credibility of rape claims is subject to additional scrutiny. Drawing from Fricker, practical ethicist Jones identifies the twin pillars of credibility as the plausibility of what happened and trustworthiness of the speaker.[413] For an audience in the court of law to reasonably receive and fairly assess a testimony, both tenets of credibility must be met; the audience "must trust the testifier because she *herself* is warranting the truth"[414] of what happened. In the case of rape, which Jones classifies as an "astonishing report," a tension emerges from the pillars and this tension demonstrates a case of epistemic injustice that reveals gendered underpinnings. An earlier section has already examined how a speaker's trustworthiness as a knower is mediated by gendered social imaginaries of women as duplicitous, incompetent, and hysterical.

The plausibility of an event echoes similar mechanism. Jones explains that plausibility of an event is "in light of what we take ourselves to know."[415] "Astonishing" events, then, are classified outside of "what we take ourselves to know" because they are shocking, out of the ordinary, and implausible. For whom, then, is rape implausible? In asking this question, the epistemic condition of the hearer is unveiled as a subject for whom rape is "outside" what he takes himself to know. This is not to suggest that rape does not structure men's social relations[416] or that all women experience rape. Rather, as Vera-Gray argues, the lingering possibility of rape (as an exemplar of male violence) contours women's everyday experiences. From walking fast at night to smiling through uncomfortable situations to avoid further confrontation, the possibility of male violence structures feminine and feminized subjects' temporal, spatial, affective, and intimate lives.[417] Returning to rape testimonies, a speaker who speaks of rape, then, suffers additional credibility deficit because she speaks of an implausible event.

[413] Karen Jones, "The Politics of Credibility" in *A Mind of One's Own: Feminist Essays on Reason and Objectivity* (2002), 154-176.
[414] Ibid., 156.
[415] Ibid., 157.
[416] Rape, or the possibility of rape and, by extension, sexual dominance is a powerful social imaginary that contours gendered social relations. On sexual dominance in male social contexts, see Lundy Bancroft, *Why Does He Do That?: Inside the Minds of Angry and Controlling Men* (Penguin, 2003); Rachael O'Byrne, Susan Hansen, and Mark Rapley, "'If a Girl Doesn't Say "No"…': Young Men, Rape and Claims of 'Insufficient Knowledge,'" *Journal of Community & Applied Social Psychology* 18, no. 3 (2008): 168–93.
[417] Fiona Vera-Gray, *Men's Intrusion, Women's Embodiment : A Critical Analysis of Street Harassment*, Routledge Research in Gender and Society (London, 2016). As a result of this real and perceived possibility of rape, Vera-Gray argues that women expend a tremendous amount of time and energy into what she terms 'safety work.' This includes walking fast at night without making any eye contact with bypassers, smiling through a creepy superior's advances to avoid confrontations, and pretending not to hear catcalls on the street. Taking a cue from Kelly's 'continuum of violence' framework, Vera-Gray describes a range of such behaviors as 'men's intrusions' to encompass the range of seriousness, frequency, and repetitiveness.

This is no less true for the campus context. Recall the media outrage over "Jackie's" account of rape in UVA and "pretty little liar" poster campaign against the "mattress girl" Emma Sulkowicz I discussed in Chapter 2. They demonstrate the politics of credibility at play in relation to the campus rape imaginary:[418] in both cases, speakers were dismissed as incompetent and unreliable knowers of what happened (trustworthiness) and the stories they shared were questioned as exaggerated fabrications (plausibility). A speaker with credibility deficit undergoes further loss of credibility and this credibility reduction is articulated in the vocabulary of "consistency." According to Jones,

> Distrust puts in place a suspicious cognitive set that colors how we will interpret the words of another. It leads us to look for signs of deception, irrationality, or incompetence and thus leads us to seek out evidence of inconsistencies, to magnify those we suppose ourselves to have found, and to focus on them in our assessment of the story as a whole.[419]

In this regard, the audience assumes a self-reinforcing "cognitive set" that amplifies "inconsistencies" to reify the speaker as untrustworthy and the event as implausible.

Recognizing this as a prevailing problem for campus sexual assault survivors, Callisto presents data as a credibility augmenting object. In particular, the metadata of time, or the "time-stamp," operates as a mechanism through which user's credibility deficit is mitigated. Callisto is not alone in this. My earlier discussion of trauma-informed reporting echoes a similar mission to correct the epistemic wrong of law enforcement's mishandling of rape testimonies. Jones is helpful again with the reminder that distrusting speakers with credibility deficit "leads us to overlook the ways in which any inconsistencies that we take ourselves to have found can be explained away."[420] Trauma-informed reporting techniques draw from neurobiology to "explain away" how and why traumatic events, by design, are fraught with "inconsistencies." Callisto aligns itself with this corrective project and posits the record form as a vehicle through which the user's credibility deficit can be remedied. For the remainder this section and chapter, I detail how the time stamp is visualized in user's dashboard and submitted PDF. I then juxtapose Beer's analysis of real-time data analytics with my interview data to demonstrate how Callisto, in conceptualizing campus sexual violence as fundamentally a problem of credibility, deploys the time stamp to correct what they see as an epistemic wrong.

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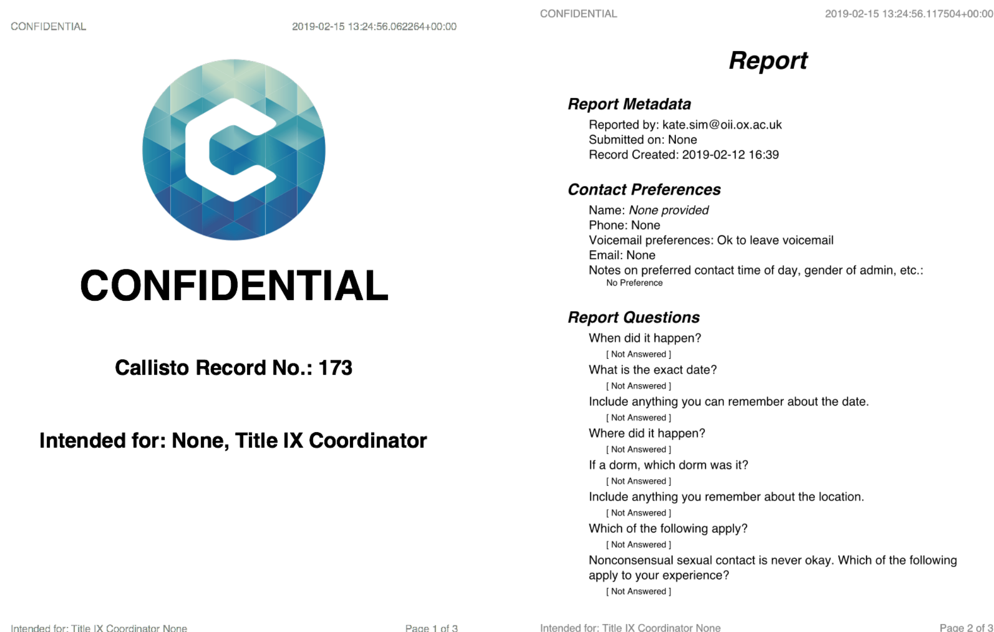
[418] See Chapter 2.
[419] Jones, 159.
[420] Ibid.

Recall the dashboard (see Fig. 15) I started this section with. The bolded typeface on the left-hand side states the date and specific time of record's creation. Underneath, regular typeface repeats the same information as time "created" and another line of regular typeface displays the time "last edited." At this point, the user can download the record as a PDF and this is the format that the Title IX Coordinator will receive if the user chooses to submit the document as a report. At the upper center of the cover page rests Callisto's teal-colored logo above big, bolded typeface in caps lock that reads "CONFIDENTIAL," which is repeated in gray typeface on the upper left corner. The time stamp on the upper left-hand corner is even more precise than what was on the dashboard. It displays the date and time with nanosecond precision in military style, and this detail refers to the time at which the document was made into a PDF. In the bottom half of the cover page, the recipient is stated as the Title IX Coordinator, which is repeated again in bottom left corner. The second page of the PDF begins with "report metadata," which displays the time of record creation. Two discrepancies should be noted: first, that the time of PDF creation remains on the upper right-hand corner; and second, that the document is described as a "report" even though it has not been submitted as one.



CONFIDENTIAL 2019-02-15 13:24:56.062264+00:00

CONFIDENTIAL

Callisto Record No.: 173

Intended for: None, Title IX Coordinator

Intended for: Title IX Coordinator None Page 1 of 3

CONFIDENTIAL 2019-02-15 13:24:56.117504+00:00

Report

Report Metadata

Reported by: kate.sim@oii.ox.ac.uk
Submitted on: None
Record Created: 2019-02-12 16:39

Contact Preferences

Name: *None provided*
Phone: None
Voicemail preferences: Ok to leave voicemail
Email: None
Notes on preferred contact time of day, gender of admin, etc.:
No Preference

Report Questions

When did it happen?
[Not Answered]
What is the exact date?
[Not Answered]
Include anything you can remember about the date.
[Not Answered]
Where did it happen?
[Not Answered]
If a dorm, which dorm was it?
[Not Answered]
Include anything you remember about the location.
[Not Answered]
Which of the following apply?
[Not Answered]
Nonconsensual sexual contact is never okay. Which of the following apply to your experience?
[Not Answered]

Intended for: Title IX Coordinator None Page 2 of 3

Fig. 25. Pages 1 and 2 of PDF copy. Screencaptured by author from February 15, 2019.

Callisto's visualization of the time stamp parallels the aesthetics and internal logic of an emerging data-analytics industry. Beer is interested in how the growing data-

analytics industry employs the language of speed, but his analysis lends itself to this chapter's focus on the intersection of data, time, and credibility. Beer identifies the key promises of "real-time analytics"[421] as accessibility, accuracy, and actionability. Data-driven knowledge, or rather, knowledge articulated through and as data, becomes knowable. Information, complex or not, is formatted and delivered in digestible bits, "in ways that are seen to be intuitive and accessible."[422] Made legible, data assures accuracy through its immediacy. The speed with which information becomes available depicts it as trustworthy "despite their quick reactions."[423] This immediacy "clos[es] the gap between data capture and action"[424] to initiate and maybe even expedite decision-making.

Callisto's many time stamps—bolded on the dashboard, nanosecond stamped in PDF, and literally verbalized as "metadata"—present the user's document *as if* it is immediate and raw, even though the record has been mediated by trauma-informed techniques. As in-depth technical walkthrough of the record form's interface thus far illustrates, the recording form is heavily mediated. It assures, reminds, and comforts the user to facilitate accurate memory retrieval; it invites and encourages iterative memory recollection through saving and editing. All this is done so that her testimonial can be assigned greater credibility through Title IX investigation and adjudication. Yet, the time stamps display the record as an immediate and raw testimonial. Student advocates were privy to this friction. They compared using Callisto to creating a Word document, a practice they encouraged victims to do before Callisto was onboarded on campus:

> The thing is, you can do the same thing with a Word document. You can just save what happened in a word documents and bring that up at a later date.
>
> [The document is] time stamped on Callisto, which, I'm not sure if that would actually make any difference in deciding whether the investigation [is successful].

---

[421] Beer, "The Data Analytics Industry." Beer actually identifies four promises: accuracy, intelligence, predictability, and accessibility. The first, second with modification, and third are relevant in my discussion here. I modified the second item from "intelligence" to "actionability." Beer writes, "The quick analytics enable the decision-making to occur in real-time" (28). To highlight this component of action, I use "actionability" instead. It is also congruent with Title IX policy language that has a threshold of "sufficiently severe, persistent, or pervasive" to classify some complaints as more institutionally actionable than others. Callisto and LiveSafe, as data-driven tools, also play into predictability, and I reserve this discussion for Chapter 5.

[422] Ibid., 29.

[423] Ibid., 28.

[424] Ibid., 29.

The comparison to a Word document is apt. A written record can take the form of a diary entry, text messages to peers, or a Word document. What sets Callisto's record apart, then, is its time stamp (ensures plausibility) and logo (affords trustworthiness). One administrator highlighted how Callisto adds "logistical'"and "evidentiary" benefit in her work as a Title IX investigator:

> From the admin side of processing a case, if you wrote down everything that happened the night it happened, but a year later you're ready to report it, we have that information timestamped. That makes it more credible." This possibility stands in contrast to: "If you come in, between now and hearing, your memory gets changed. Well how can you possibly remember that you went left instead of right one year ago?" but with Callisto, students can say, 'Well actually I wrote it down that night and you know it because it's been encrypted and time stamped and I haven't been able to change it.'

Another shared this sentiment and described Callisto reports as "fresh." Callisto's campus partnership director shared that the time stamp is a feature Title IX Coordinators, university administrators, and safety officials highlight as tremendously useful. She explained their operating assumption as "how do you remember [what happened]?" and said the time stamp "does help in police and Title IX investigations."

Even so, students questioned the extent to which Callisto could disrupt the investigation process. Volunteers who have supported their peers through Title IX investigation and adjudication procedures expressed their concern:

> Usually the report is not enough itself to adhere to the preponderance of evidence standard. You need some sort of corroborating witness…usually as time passes, the strength of witness statements weakens as well…There's so much degradation of soft piece of evidence as time goes on. In campus cases, there's no forensic evidence anyway, so you're just relying on people close to the situation.
>
> Sometimes [Callisto is] misleading: the idea that you can record now and report later when you're ready. Because the outcomes of reporting now and reporting later are usually very different.

Another student advocate noted how Callisto's record form could also be editorialized, despite administrators and safety officials' trust in the time stamp. She compared the record form to the incident form she completes as a residential advisor. A senior and a residential advisor, she has to document all residential incidents in the third person and "say exactly what happened." Her incident form, like parts of Callisto's open responses, is "a giant text box":

> I find it interesting and it's just a giant text box, which doesn't help because…it's so easy for me to tell something wrong or, if I didn't like the person, tell it more extremely. There's such a wiggle room where I can say, "they answered the door *quickly*" (italics added) versus me saying "they answered the door" because, if I say 'they answered the door *quickly*' they were like, attentive [to me].

What this student notes are twofold. First, she remarks on how the two forms, in spite of their shared editability, are subject to divergent reception. The incident form can be edited multiple times, yet it is received as plausible and reliable; the record form, on the other hand, is denied the same reception precisely because of its potential editability. Second, she points to Callisto record form's actual editability, despite the widespread perception of its credibility. Even so, Callisto's intentional deployment of the data imaginary in the form of the time stamp suggests it may be successful in resisting campus rape imaginary's credibility deficit.

Time stamp, edited

Walking through Callisto, this chapter began by situating Callisto's vision, operating model, and governance structure through which the record form emerges as a data-driven strategy to correct what the vendor sees as an epistemic wrong. To remedy the user's credibility deficit, Callisto employs the data imaginary to maintain its internal logic of repeat offender theory and augment her credibility. I have also argued that, amidst this process, the campus rape imaginary remains the primary reference point through which Callisto articulates campus sexual violence as a problematic.

Three years since Callisto's launch, the friction between the campus rape imaginary and the data imaginary continues to shape its use. During my fieldwork, Callisto's campus partnership director expressed her concern regarding safety officials' recent pushback, "They want to be able to see every time of edit." With their increasing data literacy, they began to request a complete metadata of user's edit history. She was frustrated: "Why should it [edit history] be a discrediting thing? Trauma…comes back to you over time and memory is something to be built upon." In the following chapter, I continue to explore the intersection of dis/trust, credibility, and accountability at the tension between the imaginaries of campus rape and data.

5. Sociotechnical reconfiguring of campus safety

The previous two chapters examined the sociotechnical imaginaries of safety encoded in the design of reporting systems LiveSafe and Callisto. Chapter 3 showed how LiveSafe designers forge sociotechnical imaginaries of safety as intuitive and universal during and through the design process. This interpretive framework of safety shapes the team's design objective of removing cognitive barriers to accelerate and simplify the reporting process. In the previous chapter, I illustrated how credibility functions as an interpretive framework in the Callisto product team's understanding of safety. Callisto's product team aims to use the timestamp in a strategic manner to restore credibility to survivor-users.

How, then, do these systems operate on campus grounds as they interact dynamically with the sociotechnical imaginaries of campus administrators and students? In this final chapter, I argue that reporting systems reconfigure the ecosystem of campus safety by mediating the relationship between campus administrators and students. Safety officers working with LiveSafe and Title IX Coordinators using Callisto each imagine their respective reporting tools to improve their relationship with the students. My ethnographic findings, however, suggest that this is a one-sided relationship.

This chapter begins with the finding that reporting systems are almost entirely unknown to the student body. The extent of students' not only non-use, but unfamiliarity with reporting systems available to them provides an important backdrop for analyzing how sociotechnical imaginaries mediate safety officers' experience with reporting systems. The chapter is then divided into two parts. First, I discuss LiveSafe and identify three ways in which sociotechnical imaginaries shape safety offices' understanding of

campus safety: their perception of college students' communication norms, the sociotechnical nature of safety work, and their individualist model of campus safety as personal choice. Through the sociotechnical imaginaries at play, safety officers imagine LiveSafe to enhance not only the quantity of reports, but also the quality of insight generated. The following section concentrates on Callisto. I discuss how Title IX Coordinators and prevention specialists articulate campus safety as a relationship of distrust between the student body and "the administration." Callisto is imagined as a bridge that would rectify this distrust. However, a careful examination of how students engage with Callisto demonstrates that students use the system in order to maintain their distance from interacting with campus administrators. Paying attention to the inner workings of sociotechnical imaginaries in both cases underscore the one-sided nature of reporting systems' impact on campus safety.

Non-use as a data point

Starting this project, I initially envisioned the two systems coming together in this chapter to demonstrate how they are reshaping the campus safety ecosystem. Instead, what I found during my ethnographic study is that there exists very little interaction between the systems and their users. They are each located in different paths within the broad domain of campus safety: LiveSafe resides in campus safety departments and Callisto in Title IX and prevention specialists' offices. While the two offices share the broad remit of campus safety and student life, their visions of what campus safety is and what it ought to be are markedly different. To take that difference seriously, this chapter details how safety authorities' and Title IX Coordinators' respective safety imaginaries articulates campus safety as a problem, and how the respective reporting systems they implement emerge as a tractable solution. The chapter therefore is structured as two stories, each demonstrating the safety imaginaries at work and how those imaginaries mediate safety officers' and Title IX Coordinators' relationships to the students.

Focusing on safety administrators' safety imaginaries as an analytic also offers a useful explanatory framework for making sense of students' non-use. Students rarely used LiveSafe or Callisto; not only that, they were rarely aware that their schools offered such options. Recounting their experience first learning about reporting systems like LiveSafe and Callisto, one student said:

> I was kind of confused. The way [campus safety authorities] went about advertising [LiveSafe and Callisto], a lot of things are just vomited on us, this this this and this. Very often, during orientation, the colleges want to show their best self. But as the year goes on, you realize more the darker side of the lack of resources. I downloaded LiveSafe because of the email that was sent out. Due to the lack of following up and confusion of how to use the app, what the app is even for, I'm sure they explained it but in the way they explained it, they had like all the freshmen, it was mandatory, to go to this auditorium. There would be a one hour talk about, like, whatever…it was an entire talk on safety, LiveSafe and Callisto were a part of that. Instead of having a separate session to teach students, it would've been more useful to have a demonstration in small groups...to educate students on what these apps are and how to use them, that would've been more productive than having a mandated talk in an auditorium. I think I slept through it, to be honest, I just went to the top balcony and took a half-hour nap**.** I got the app and I ended up deleting it because I don't even know what this is for. They [campus safety] never followed up so I just deleted the app.

This student volunteered at the campus LGBTQIA resource center and considered themselves more knowledgeable about campus safety resources. They were surprised to be reminded that their school offered LiveSafe and Callisto. This student was not alone. Most of my initial contacts with student participants resulted in surprise or similar stories of how they quickly forgot about reporting tools. Students' reactions offer a useful data point in making sense of how reporting tools reconfigure campus safety: they are operate as a one-sided tool for campus safety administrators.

But this poses a methodological and conceptual challenge. Methodologically, it was difficult to interview students simply because they were unfamiliar with reporting systems. This problem transpired during the recruitment phase: students were generally responsive to my recruitment efforts, but responded that they were unable to participate because they had never heard of either system. What their reactions did reflect was their attitude towards "the administration" and how they perceived reporting systems in relation to this attitude. In general, students responded in one of two ways. Some responsed with a pleasant surprise and saw reporting systems like LiveSafe and Callisto as a gesture of care from their institution. Others sarcastically remarked that their unawareness was indicative of institutional failure. There are, of course, many behavioral and structural reasons why many students would be unaware of campus safety resources on campus. On one hand, students are unlikely to pay attention to information that they

perceive as irrelevant to them. As research on help-seeking behavior discusses,[425] without prior knowledge or experience that would prime them to pay attention to safety concerns, students are not likely recall safety resources. Another factor speaks to how safety resources are presented to students. Even as colleges and universities seek to amplify their safety resources and diversify their programming, these resources are often communicated during the orientation week where information overload muddies details specific to reporting options and procedures.[426]

But for the question of how reporting systems reconfigure the ecosystem of campus safety, students' unfamiliarity with reporting systems offers an important data point for how sociotechnical imaginaries shape safety administrators' practices. As this chapter will demonstrate, campus administrators' safety imaginaries powerfully frame how they identify problems and imagine solutions and often do so in the name of student safety. However, students' resounding unfamiliarity reflects both the extent of their non-use, and how their help-seeking behavior is absent in informing campus safety policies and practices. Students' unfamiliarity in my data collection indicates just how underutilized reporting systems are. Campus administrators alluded that there is data being kept somewhere on reporting tools' empirical impact on students' reporting behavior, but my follow-up requests for this data was never met in all three of my field sites.

Both the students' unfamiliarity and campus administrators' unawareness of how LiveSafe and Callisto are implemented powerfully speak to the hold safety imaginaries have in mediating how administrators see reporting tools as a tractable solution to the problems they identify. Metrics like download count and use analytics do not reflect how campus administrators make sense of reporting systems' contributions to their safety work. Sociotechnical imaginaries of safety, on the other, offers an illuminating explanatory framework for how reporting systems gain purchase in administrators' visions and practices of campus safety. As Jasanoff and Kim write, sociotechnical imaginaries "are at once products of and instruments of the coproduction,"[427] in this case, of gender, technology, and safety. Neff and Nagy's concept of imagined affordance is

[425] See Elizabeth Englander, Meghan McCoy, and Sherry Sherman, "Sexual Assault Information on University Websites," *Violence and Gender* 3, no. 1 (March 2016): 64–70, https://doi.org/10.1089/vio.2015.0025.

[426] See Nancy Chi Cantalupo, "Institution-Specific Victimization Surveys: Addressing Legal and Practical Disincentives to Gender-Based Violence Reporting on College Campuses," *Trauma, Violence, & Abuse* 15, no. 3 (July 2014): 227–41, https://doi.org/10.1177/1524838014521323.

[427] Sheila Jasanoff and Sang-Hyun Kim, *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power* (University of Chicago Press, 2015), https://doi.org/10.7208/chicago/9780226276663.001.0001.

useful here in magnifying how sociotechnical imaginaries mediate safety administrators' use of reporting tools. Imagine affordance "emerges between users' perceptions, attitudes, and expectations; between the materiality and functionality of technologies; and between the intentions and perceptions of designers."[428] This concept demonstrates how safety officers' and Title IX Coordinators' imaginaries, which are shaped in part by the "intentions and perceptions" of designers as discussed in the two previous chapters, imagine and thus interact with LiveSafe and Callisto as tractable solutions.

Where possible, I recruited students with safety responsibilities to inquire about their experiences. I spoke to students who work as residential advisors or staff student resource centers, volunteer as class representatives, or campaign as survivor advocates. These students' experiences illustrate the gap between the assumptions and aspirations they bring to reporting systems and campus administrators' understanding of student experiences.

LiveSafe: A smart choice

This section examines how safety officers' imaginaries of safety shape their interaction with LiveSafe. I highlight the three ways in which safety authorities' sociotechnical imaginaries mediate their understanding of campus safety and, in turn, shape how they imagine LiveSafe's affordances. First, safety officers' perception of college students and their digitally mediated communication habits as inscrutable and foreign to them informs how they identify LiveSafe as an opportunity to provide a reporting option more accessible to students. Next, I discuss officers' safety practices to demonstrate how LiveSafe is perceived to afford a sense of clarity to officers. Important here is how federal campus safety requirements under the Clery Act and Title IX structure campus safety departments to focus on information collection as an act of compliance. Finally, I examine safety officers' understanding of campus safety as a set of smart choices. I underscore how the logic of intuition, which they share with LiveSafe product developers, individualizes and responsibilizes campus safety. In the concluding discussion, I consider how removed students are from the visions and practices of campus safety that the officers and LiveSafe share.

[428] Peter Nagy and Gina Neff, "Imagined Affordance: Reconstructing a Keyword for Communication Theory," *Social Media + Society* 1, no. 2 (2015): 1–9.

Reaching for college students

Safety officers articulated LiveSafe as an opportunity to reach college students whose communication habits appeared incomprehensible to them. Repeatedly, my participants emphasized that LiveSafe is "an incredibly valuable tool, and has a potential to be an incredibly valuable tool." One of the ways in which they identified this potential value was in how they imagined the reporting tool as a strategy of reaching young people. This section demonstrates how officers' sociotechnical imaginaries inform their perception of young people's technology use and orient them towards LiveSafe as an instrument that grants them access to young people's conversations.

Safety officers, many of them white men in their 50s with law enforcement or military background who had left the intensity of their previous roles to the more pastoral work of campus safety, were confounded by young people's technologically mediated communication habits. One officer's anecdote below captures his confusion and how he takes his confusion to be indicative of the need to change his technology use:

> Now, I have eight kids, including a 10-year-old daughter who thinks it's cool to text me when I'm downstairs just because she can, and I'm thinking, "Really?" But what she is, it's indicative of a more prolific and communicative world out there of people who are a few years older than her, but who have grown up with that as a preferred form of communication. And they get here [on campus]. That's really one of the cornerstone issues of communication: it's not just what you're trying to tell someone else, but more importantly, what they're trying to tell you and make sure you understand it. To have LiveSafe there and have it available so people can tell us about what's going on, I look at it as, and our calls have gone up in the last two and a half years by 21% total. The LiveSafe thing has clearly added a new level of connectivity to those that we serve and that's important.

In this excerpt, the officer implies a disconnect in how students and safety officers communicate. "What they [the students] are trying to tell you [safety officers]" is somehow not making it across to the officers, and he locates this disconnect in the tools of communication. Thus, LiveSafe is perceived as affording "a new level of connectivity."

With a new level of connectivity, my participants observed that LiveSafe reports not only eased the process of reporting for students, but also collected new type of information they would not have been able to access otherwise. According to one officer:

> We brought LS on about two years ago in 2016. It takes about 8-9% of all the calls we get, which is a pretty good number. So people will send us anonymous reports or they'll send us a picture or something, they'll call in using the LiveSafe app, or they'll send in a text. And it will populate on the dashboard on LiveSafe, and it becomes a part of our call origination. So it's good because, I think what it does is, it brings us more in alignment with the preferred communication methods of the majority of college students, even faculty and staff, of today.

The officer identifies LiveSafe as the source of "being more in alignment" with how students communicate. Unlike the traditional modes of reporting, students can now report with pictures or casual text messages. Another officer added, "What's been really fascinating is how much students don't like to use their phone to call the police, but are willing to send in all sorts of tips when they can do it through the app." This quote demonstrates the sociotechnical imaginaries at play. Officers' imaginaries about digital technologies and ideas about young people's technology use co-shape how LiveSafe is imagined to afford "all sorts of tips" previously unavailable to them. Thus, safety officers perceive offering LiveSafe as an outreach strategy that is imagined to improve not only the quantity, but also the quality of reports. LiveSafe enables new insight by offering a reporting channel more aligned with college students' communication practices.

Seeking clarity and delegation

Safety authorities' interpretation of safety work also shapes how they identify and articulate LiveSafe's value. In this section, I examine how safety officers navigate information gathering practices that have been rendered sociotechnical through federal requirements, mainly the Clery Act and Title IX. My aim here is not to assess whether these data-driven practices are apt or effective; they may be, though my ethnographic findings suggests otherwise. Rather, I am pointing to how framing safety as a set of information practices reconfigures the social conditions through which problems and solutions are imagined and acted upon. I highlight two ways in which LiveSafe's functionalities are interpreted as an active contribution to authorities' safety work. First, I discuss how LiveSafe's simplistic and centralized dashboard design affords a sense of clarity to safety officers. I then demonstrate how the tip type screen's information architecture and categorization function perform delegation work for safety officers. These examples illustrate how sociotechnical imaginaries of safety mediate safety

officers' interpretation of campus safety and perception of the app's material arrangements.

The Clery Act and Title IX require federally funded education programs to collect certain kinds of campus safety information and to report those figures in annual transparency reports (see Chapter 2). Campus safety departments align their safety practices accordingly in order to comply with these federal requirements. These laws thus structure the conditions through which information gathering arises as the explicit goal.[429] The Clery Act, which mandates responsible safety authorities to meticulously report, document, and investigate a number of reportable offenses, most directly shapes how campus safety departments structure their information collection practices. Their Clery practices must align with federal Title IX guidance on collecting statistics pertaining to sex-based discrimination. As discussed in Chapter 2, the Clery Act's initial remit was to include sex-based crimes to campus safety department's purview, but as both the Clery Act and Title IX continue to undergo changes in scope and application, the expectations on safety departments have become unruly in my participants' words. Safety officers come to understand compliance as information collection.

One particular exchange with a Clery Coordinator and a safety officer highlights how safety authorities interpret and practice compliance as information gathering. It also reveals how they perceive Clery and Title IX requirements as uncompromising. During this exchange, the Clery Coordinator and an officer recounted trying to collect information about an incident of sexual assault that took place in their institution's study abroad program in Russia:

> *Coordinator:* I collect data from all Title IX personnel, equality and diversity offices, etc. because they are mandatory reporters under Clery. This means they have to report those cases that are not under law enforcement purview because the victim didn't want to report to law enforcement. I include that in the Annual Security Report. It's one source of my data. The other sources of my data are: department of safety reports, local law enforcement reports, and anything else that comes through local law enforcement jurisdiction. This includes our campuses that are abroad.
>
> *Officer:* Victims can go straight to local law enforcement and bypass us if they choose to. We are required by federal law to report all sexual assaults that occur at locations that are defined by Clery as reportable, so

[429] See David Beer, *Metric Power*, 1st ed. 2016 edition (Palgrave Macmillan, 2016); Sarah Brayne, "Big Data Surveillance: The Case of Policing," *American Sociological Review* 82, no. 5 (2017): 977–1008; Sarah Brayne and Angèle Christin, "Technologies of Crime Prediction: The Reception of Algorithms in Policing and Criminal Courts," *Social Problems*, March 5, 2020, spaa004, https://doi.org/10.1093/socpro/spaa004.

we have to get together with local law enforcement every year and reconcile those cases and make sure they're counted properly. It's incredible amount of work. This federal law known as the Clery Act is well-intentioned, but there are demands that are hard to comply with. For instance, [the Coordinator] was tasked with trying to account for Clery reportable crimes at our study abroad programs. It's virtually impossible to do.

Coordinator: The initial intent of that is: There's been some tragic injuries or deaths of students who've gone abroad. They wanted to expand Clery to encompass that, collect crime stats abroad. Well, we do it and we send out the letters and we get responses, we build relationships with the UK, Japan, Greece, and Spain, but the responses we receive for our request for crime stats are: 'Who do you think you are, you have no jurisdictional power over us.' Or they say, 'Your crime definitions are not the same as our crime definitions.' So there's a barrier there, and then there's a language barrier.

Officer: We were recently looking at a letter that was in Russian.

Coordinator: We had to translate it. I provided my email, they emailed me in their language, which is completely normal, you don't expect everyone to speak English. So we asked one of our professors to translate it. What the letter said was: If you want our crime stats, go to our website, which is in Russian, and plug in your address there. We were trying to figure it out, but it became so complicated because how many times can we ask our professors to take on this project and translate these emails?

Officer: Is there a wording in the Clery that says, make a reasonable effort? So, where do you draw the line?

This exchange captures how the federal requirements structure the conditions in which safety authorities see information gathering as compliance. Through this process, the work of campus safety is rendered sociotechnical: collecting information is safety work. It should be noted that the safety authorities' responsibility in relation to the study abroad incident ended with information collection. They did not follow up with the affected student, nor did they have input in safety programming for students enrolled in study abroad programs. The singular emphasis on information collection and the absence of other kinds of work focused on, say, providing remedies or programming safety presentations for study abroad students, demonstrate how safety authorities interpret and practice campus safety.

But not without frustration. Understandably so, safety authorities found the federal requirement to be uncompromising in demanding what they saw as beyond "a reasonable effort." The laborious nature of contacting international institutions in order

to comply with Clery and Title IX requirements illustrate how the sociotechnical work of information collection relies heavily on shared information systems. Safety authorities' information collection efforts are challenged by international institutions' language barriers, different systems of defining and counting crimes, or lack of willingness to share information.

At campus safety departments, the technologies in use give material shape to how the work of maintaining campus safety has been made sociotechnical. Usually located in the outer periphery of the campus, the safety departments are bustling with sounds of paperwork, radio transceivers' buzzes, phone alerts and rings, and the sound of the news. Invisible to me but adding to this messy apparatus of information collection and communication are emails, social media tracking tools, reporting systems like LiveSafe, and emergency notification systems (ENS). Each device is responsible for tracking, collecting, and communicating a particular type of information: the emails, the radio, phones, and LiveSafe each play a different component of the complex apparatus of "gathering intelligence," a law enforcement and military vocabulary that reflects officers' backgrounds.

The sociotechnical imaginaries safety officers have about information technologies mediate how they interpret the quality and value of the information being collected. Explaining the need for having diverse information technologies, one officer said:

> Tech has led to new positions within [the department]. Not just sexual assault, but we now have sergeants and other officers whose full-time job is monitoring social media for intelligence. Sometimes, if you pick up conversations, you see unreported crime as a comment on Facebook or social media. Primarily it's designed to, let's say there's chatroom discussion for a disruptive demonstration on campus. So we're looking for that, or specific threats against university. We selected a software program to look at various social media platforms and pull out [mentions of] our school. These new technologies have created new intelligence gathering sources.

My participant's articulation of new intelligence gathering technologies' purpose and value captures how safety officers' sociotechnical imaginaries mediate the relationship between *what* information is being collected and *how* it is being collected. The excerpt above shows how the officer perceives newly implemented software *as* the source of new intelligence. Woodall and Ringel's (2020) analysis of the mediation between blockchain enterprises and professional communities illuminates how users' trust in the "integrity,

authenticity, and reliability" of stored information is "anchored in the properties of" blockchain applications.[430] In a similar vein, the novelty of information gathering systems is anchored in software's novelty.

So far, I have detailed how federal requirements structure safety work as sociotechnical, and how safety officers' imaginaries mediate how they perceive information technologies as enabling new insight. As one such information technology, LiveSafe arises from these conditions as a desirable solution. In the remaining discussion, I examine how LiveSafe's dashboard and simplistic design affords clarity and tip type architecture affords delegation to safety officers.

Safety officers' data imaginaries mediate how they perceive LiveSafe to afford clarity to the information they collect. More intelligence requires additional work to manage and interpret incoming information. "You get these diverse things. That's been the only challenge, working with all these," explained one officer. Compared to other systems in use, safety officers perceive LiveSafe to be a simple, intuitive, and therefore, accessible system for their information needs. One campus visit highlighted this comparison. At a campus safety department, I was allowed a quick glimpse to the dashboard room where safety officers receive reports and alerts. It was a small room with the light turned off, but the room was lit with a blue tinge from multiple screens. On one side of the wall was a series of monitors that displayed multiple screens, each connected to fifteen security cameras located across the campus. To its right was a television that played the local news. Facing the monitors were two desks, each occupied by a security officer, that had a monitor displaying the LiveSafe dashboard and a phone that would pick up any calls. Ten minutes into the tour of the dashboard room, I was starting to get dizzy from the surrounding devices.

The officer who was showing me around pointed out how useful and usable LiveSafe dashboard was for them, and I could see how the product distinguished itself from other security devices. Against the blurry images of security cameras, monotonous news anchors from the television and radio, and constantly buzzing phones with incomprehensible messages, LiveSafe's dashboard looked sleek and simple in comparison to the constant streams of the radio and the messy Outlook inbox. It ensured that information was collected, formatted, and presented in a legible manner. The

[430] Angela Woodall and Sharon Ringel, "Blockchain Archival Discourse: Trust and the Imaginaries of Digital Preservation," *New Media & Society* 22, no. 12 (December 1, 2020): 2200–2217, https://doi.org/10.1177/1461444819888756. Woodall and Ringe investigate how

dashboard analytics were based on a handful of cases, but the pie charts, tables, and heat maps on display mediated how officers interpret information through LiveSafe as accessible and actionable. As Beer writes of data analytics, presenting information, however small or large, in a digestible manner converts the data points into "a form of analytical insight…from which meaning can be easily and quickly derived from any user."[431] LiveSafe's simplistic design and its analytics dashboard are thus imagined to bring clarity to collected information.

Tasked with information gathering as compliance and charged with numerous technological systems to operate, safety officers encounter a degree of uncertainty in how to make use of the information at hand, and this uncertainty creates a need for delegation. With each incident, safety officers are just one of many responsible authorities; as incidents transpire, it is not immediately clear what role campus safety department should play. As one safety officer explained:

> I won't call it ambiguity, but there's some measure of a lack of certainty about knowing how people are going to handle something when it comes up…It might get into a debate about how and what form of punishment may be pursued or be of interest, and we've seen that with a variety of behaviors. All that is to say, we end up getting caught in the middle: what do you want us to do with her, what do you want us to do with him, what do you want us to do with these people.

The excerpt above highlights the need for delegation. It shows how information gathering is only one step in the larger process of preventing and respond to safety incidents. Incidents involve multiple stakeholders, beyond the students involved and the campus safety offices, who must decide how to appropriately respond to the situation at hand. These details are not necessarily evident at the moment of information collection. This is especially true for sexual assault cases where mandatory reporting obligations[432] and relationships to local law enforcement shape what safety officers can and cannot do. "If we're made aware of a sexual assault and that student comes to us, and just wants to talk

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[431] David Beer, "The Data Analytics Industry and the Promise of Real-Time Knowing: Perpetuating and Deploying a Rationality of Speed," *Journal of Cultural Economy* 10, no. 1 (January 2, 2017): 29.

[432] The impact of mandatory reporting laws for campus safety administrators and authorities is debated. Mancini et al. (2016), for example, found students to harbor generally positive attitude towards mandatory reporting laws. However, others like Brodsky (2018) and Moylan et al. (2018) argue the law may be counterproductive in facilitating students' help-seeking behavior. See Christina Mancini et al., "Mandatory Reporting (MR) in Higher Education: College Students' Perceptions of Laws Designed to Reduce Campus Sexual Assault," *Criminal Justice Review* 41, no. 2 (June 2016): 219–35, https://doi.org/10.1177/0734016816634787; Alexandra Brodsky, "Against Taking Rape 'Seriously': The Case Against Mandatory Referral Laws for Campus Gender Violence," *Harvard Civil Rights-Civil Liberties Law Review* 53 (2018): 131–66; Carrie A. Moylan and McKenzie Javorka, "Widening the Lens: An Ecological Review of Campus Sexual Assault," *Trauma, Violence, & Abuse* (February 6, 2018) https://doi.org/10.1177/1524838018756121. See also Chapter 2.

to us because we're campus safety, we cannot conduct the investigation even if they want us to. We must defer to the local law enforcement."[433]

This need for clarity shapes how safety authorities imagine LiveSafe to perform a clarifying role by managing the delegation work. Unlike reports received through email and phone, LiveSafe tips are automatically delegated to responsible offices and delivered in preferred formats. One officer explained how LiveSafe simplifies their work by comparing it to other intelligence gathering systems. "It's not like the coordinator has to check five different reports. If it goes to LiveSafe and students want to report, it will get turned into an incident report and an email will be sent. We're still very email-driven here." Here, the officer locates LiveSafe's affordance in its ability to generate and directly send an email to the responsible authority; LiveSafe is delegating. LiveSafe does this through its tip type screen. Requiring users to pre-assign a category to the incident being reported allows the system to deliver the tips to relevant authorities. For example, officers regularly stated that they were happy to have facilities-related concerns directed to the facilities officer so that they do not have to re-route those complaints. As discussed in Chapter 3, the vendor's decision to maintain a tip type screen, rather than the user testing subjects' preference for a severity scoring interface, reflects how the vendor prioritized safety officers' information work. The app's information and technological architecture that triages complaints to ensure that officers receive only relevant safety concerns thus mediates how officers imagine LiveSafe as a solution against being "caught in the middle" of various protocols, jurisdictions, and needs.

Making smart choices

To safety officers, campus safety is a set of smart choices. In this section, I detail how campus rape imaginaries shape the ways in which safety officers individualize and responsibilize campus safety. In this process, safety is articulated as an intuitive object that is universally shared and known. One conversation with a chief safety officer powerfully captures the logic of intuition at play in shaping his understanding of campus safety:

[433] Interestingly, the safety officers at this institution are currently in the process of obtaining peace officer authority, which grants greater authority to safety officers who undergo training. This would change the terms of their memorandum of understanding (MOU) with local law enforcement, as safety officers can issue warrants at most. Pursuant to peace officer authority, this institution authored AB-2361 in 2016. See: http://www.leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160AB2361.

> The bottom line is, and I always conclude my safety presentation with this: the most important factor in student staying safe, in my opinion and based on my experience, is smart choices. Making smart choices. It's the same in every universities, my colleagues in campus law enforcement, students need to make smart choices and be in partnership with public safety. I will give you an example as it relates to sexual assault. I'm always careful to not blame the victim, but students, if they make poor choices, can place them in a situation and become vulnerable. What I'm talking about is that campus life across America involves alcohol. There are many, many events where alcohol is consumed. Quite often a freshman living on their own doesn't realize the impact of alcohol on, let's say, 3-4 shots of alcohol in their typical, campus party red plastic cup on a young woman who maybe weighs only about 110 pounds. It can lead to them becoming vulnerable.

The safety officer here, and others that I spoke to, chose their words carefully, alluding to their recognition of the social implication of blaming the victim. However, a closereading of how they identify and locate choice, vulnerability, and danger, illuminates a certain understanding of safety through which LiveSafe emerges as a solution.

In the scenario, the danger is the sexual assault, and the act of taking more shots than a 110-pound body can handle is the poor choice. The vulnerability, however, is more difficult to locate. A number of factors can be a vulnerability here: taking the shorts, being at a party, being a woman who weighs only about 110 pounds, or being "placed in a situation" of sexual assault. The lack of specificity in what the officer identifies as the source of vulnerability has the effect of obfuscating the context altogether. In the scenario this officer provides, there exists no additional context that, in real life, would be important to consider, such as the relationship between the woman and her assailant, the location of the party, presence or absence of friends, and so on. Also absent here is any descriptor about the assailant. Amidst these absences, the woman, and her poor choices, stands out as the subject in this scenario. Had she made different choices, she could have avoided becoming vulnerable.

The chief officer's vision of safety emerges from this counterfactual. As he explains, "making smart choices" is the constant across colleges and universities that ensures a safe campus. In doing so, he universalizes smart choices as intuitive and self-evident; we all know what we have to do to stay safe. By universalizing smart choices, he individualizes and responsibilizes campus safety. If making smart choices is an option available to all, those who make poor choices are willingly engaging in an act that will make them vulnerable. Understanding safety officers' paradigm of campus safety as a

set of smart choices illuminates how the logic of intuition mediates the individualization and responsibilization of campus safety. This paradigm undergirds how officers conduct safety work, much of which has been quantified and datafied by the requirements under the Clery Act and Title IX.

Safety officers' understanding of campus safety shapes how they come to see LiveSafe as a tractable solution for sexual assault. Officers touted the SafeWalk feature as LiveSafe's unique contribution to the problem of campus sexual assault. The excerpt below poignantly demonstrates how the campus rape imaginary, officers' individualist understanding of campus safety, and perceptions of LiveSafe co-produce how the app becomes known and materialized as a solution:

> We liked the SafeWalk feature, you can ask your roommate. [LiveSafe has] become really important, like that case in Texas where a student is walking alone in the dark from the campus and somebody kidnapped her and killer her, somebody living in the woods. So, we offer these things, and whether people use them or not, that's a personal choice whether they participate or not in their own safety. But we do put this on the website and advocate people to download it.

The officer articulates the SafeWalk feature's value through the story of Haruka Weiser's death in 2016. Last seen leaving her drama building on Saturday evening, Weiser, a first-year student at the University of Texas, was found brutally assaulted and murdered in a nearby creek a few days later.[434] This campus rape imaginary structures how the officer understands campus safety as a problem of stranger danger, and seeks a solution in LiveSafe. Weiser's death is tragic, but the circumstances of her death are exceptional; in fact, the police never stated that she was sexually assaulted. The issues at the heart of campus sexual assault survivors' accounts and ongoing campaigns about campus gender-based violence concern shared spaces. Beyond the fact that most sexual assaults are committed by individuals known and often trusted by the victims,[435] survivors accounts emphasize how sexual violence and its downstream effects interrupt students' access to education, and that these effects are exacerbated by institutional responses that atomize the survivors seeking help. Based on a survey of over 100 students who have reported sexual violence to their institutions, Know Your IX found that 27 percent of students

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[434] Jason Silverstein, "University of Texas Freshman Haruka Weiser Identified as Victim of 'brutal Murder,' Person of Interest Sought," NY Daily News, April 7, 2016, https://www.nydailynews.com/news/national/u-texas-freshman-haruka-weiser-identified-victim-article-1.2592013.

[435] See "Perpetrators of Sexual Violence: Statistics," RAINN, accessed April 17, 2021, https://www.rainn.org/statistics/perpetrators-sexual-violence.

who reported took a leave of absence, 20 percent transferred schools, and nearly 10 percent dropped out entirely. As the report highlights, "these educational interruptions occur not because of sexual violence alone, but because of sexual violence exacerbated by schools' inadequate or otherwise harmful responses to reports of violence."[436] These concerns, however, are entirely absent in this officer's understanding of campus safety.

Instead, Weiser's death serves a justification for why reporting instruments like LiveSafe can become a solution. Reflecting safety officer's safety imaginary, solution is also expressed as a personal choice. "We offer these things [like LiveSafe] and whether people use them or not, that's a personal choice whether they participate or not in their own safety." Safety is thus rendered participatory; individuals choose safety. To this safety officer, offering LiveSafe is extending that choice to students so that those who value safety can take ownership of their protection.

CONCLUSION

This section detailed three ways in which sociotechnical imaginaries mediate safety authorities imagined uses of LiveSafe. First, it showed how safety authorities' imaginaries about young people's technology use inform their perception of LiveSafe as a reporting channel more aligned with college students' behavior. I then described the political backdrop via the Clery Act and Title IX that expresses campus safety as a set of information practices. As such, information gathering becomes safety officers' central objective that informs officers' perception of LiveSafe's dashboard analytics and tip categorization as an efficient and manageable instrument that affords clarity and delegation. Finally, I discussed safety authorities' individualist model of campus safety as a set of smart choices to illustrate how LiveSafe arises as a solution (albeit a voluntary one) for campus safety. These examples demonstrate how ideas about campus sexual assault and technology co-create the social conditions through which LiveSafe is imagined as a tractable solution. However, the extent of students' unfamiliarity with LiveSafe represents how LiveSafe's reach is contained to campus safety authorities.

[436] Sarah Nesbitt and Sage Carson, "The Cost of Reporting: Perpetrator Retaliation, Institutional Betrayal, and Student Survivor Pushout" (Know Your IX, March 2021), https://www.knowyourix.org/thecostofreporting/.

Callisto: A one-sided bridge

In this section, I demonstrate how safety administrators' safety imaginaries shape their perception of Callisto as a bridge to mitigate students' institutional distrust. Safety administrators, mainly the Title IX Coordinators and sexual violence prevention specialists, understand campus safety as a relationship of trust between students and the institution. Well-aware of the extent of students' distrust towards "the administration" amidst the current political climate of student protests across the country, they aim to mitigate students' distrust and Callisto emerges as an opportunity to do so. Callisto's anonymous and iterative reporting interface is imagined to afford a sense of control to student-users. Campus administrators aspire for the system to operate as a gesture of care that would build a bridge to restore students' distrust towards the administration. This, however, is one-sided. Students perceive Callisto as an entity independent from their institution and thus use the reporting instrument as a way of maintaining their distance from the administration. Moreover, my interviews with student advocates reveal that the advocates interpret Callisto's technical problems and the administration's shortcomings with implementing it as yet another iteration of their institution's lack of care, which reifies their institutional distrust.

To fully understand the relationship between campus administrators and students, this section begins with a discussion of how campus administrators articulate the campus climate as "a hot environment," fraught with stories of institutional mishandling, student protests, and a political climate of severe distrust towards institutions. It is in this environment that campus administrators look to Callisto as a bridge. In contrast to traditional reporting options, Callisto's anonymity and the interface's iterative and open-form structure are imagined to afford a sense of control, and campus administrators aspire that this affordance can facilitate a relationship of trust with students. I then examine how students make sense of their experiences using the system to argue that, for students, Callisto is a strategy of maintaining their distance from the administration.

"A hot environment": The students vs. the administration

To safety administrators, the current campus climate, especially around issues of sexual assault, is hostile. In order to illustrate how the campus has been experienced as

“a hot environment” for safety administrators, I first detail what the Title IX path of campus safety ecosystem looks like. In response to the public scrutiny of higher education institutions’ mishandling of campus sexual assault, campuses with means have dedicated personnel and resources specific to sex-based discrimination. On the campuses I visited, Callisto resides at or in between the Title IX office and sexual violence prevention specialist’s office that collaborates with residential deans, student affairs administrators, including equity, diversity, and inclusion offices, and student government representatives and survivor advocacy groups to program events and resources where information about Callisto is dissemination.

The location and design of Title IX offices and sexual assault resource centers on campus offer a glimpse not only into the nature of their relationship, but also how the institution expresses its due diligence to addressing sexual violence on campus. In all the campuses I visited, Title IX offices are located in the outer periphery of the campus, at times clustered together with other student affairs-related offices, though not always. For the most part, Title IX offices are located in mid-sized buildings that stand alone and apart from the heart of student life, like lecture halls and dormitories. These student affairs buildings exude a sense of formality: a fresh coat of paint, clean carpets, scented hallways, and the shine on furniture reveal just how recent this building is and parallels the recent and ongoing timeline of institutionalizing student affairs. In comparison to the constant notification sounds of safety departments, the student affairs buildings are relatively quiet, though not disquietingly so. There is something inviting, yet sanitized, about the atmosphere that I attribute to the combination of policy brochures about Title IX and Title VII, transparent jars filled with contraceptives, stickers with catchphrases like, "consent is sexy," and the Callisto logo that decorate the building. Some of the doors are invitingly open, and I see different administrators, predominantly women in semi-casual attire, popping in and out of each other’s offices. On the other hand, the Title IX office at a large private institution resembles a big law firm. The building houses a number of other offices responsible for day-to-day operation of a large university, such as the finance and accounting offices. The elevator to the floor where Title IX office is located leads me to a small reception area in the middle of a stuffy hallway composed of dark carpet, dark furniture, and dim lighting. It is not immediately visible that there is a door behind the receptionist, and it is this door that leads to the Title IX office. The door opened to a brightly lit and bustling view of an office floor with glass walls and doors that displayed suited administrators busily typing away or walking past each other. The

Title IX Coordinator's office is a corner office, and the view of the city, made more expansive by the glass walls and windows, creates a sense of something between openness and exposure.

The formality of Title IX offices is nowhere to be found in services for sexual assault prevention and response. The location and structure of these services vary widely across different campuses: in one small suburban campus, the resource center was a freestanding cottage specializing in sexual assault and intimate partner violence issues while, in a larger school, the services were located under health services. Whatever the structure, they are generally located in some distance from the center of the campus, though in accessible proximity. They have a much more inviting and cozier atmosphere, from the bean bags freely sprawled on the floor, to pictures of student advocates and volunteers on the wall, and handmade flyers and cards evocative of feminist zine aesthetics. The reception area offers a number of attention-grabbing objects, including brochures about confidentiality and non-judgmental support, resource cards listing various phone numbers and websites, including Callisto's, and a colorful array of fidget toys. The objective here is clear: the space wants you to feel at ease.

The concerted effort both offices make to create an inviting and comfortable experience follows the intense distrust, even hostility, between students and university administration in recent years. My participants in student life described the campus climate in recent years as a "hot environment" caught in a "moment of pain and lack of trust." One Title IX Coordinator recalled the early days of her role as a Title IX Coordinator on a campus where students organized a demonstration challenging the mishandling of a sexual assault case. "When I would say, 'There are some harms that need to be healed,' everybody would nod." The harms are not just relegated to the campus. Especially during the 2016 Presidential election, the administrators found the campus become an ardent, if at times, hostile, hub for sexual politics. The constant stream of national headlines about institutional mishandling, changing federal guidelines about Title IX compliance, and student voices in local papers created "a time of remarkable distrust," a narrative of "us versus them." In fact, the colleges and universities I visited had, at some point, been subjected to national scrutiny for their mishandling of sexual assault. Many follow a similar pattern: survivors publicly share an account of their experience, usually through personal social media accounts or through the school newspaper, and the stories become a mobilizing force for sympathetic students to call for institutional change, including an implementation of the affirmative consent standard and

mandatory trauma-informed training for safety authorities and campus administrators. A student at a suburban liberal arts college recalled a recent incident that led to student demonstrations:

> We had a student from who was assaulted. Basically, the assaulter was asked to leave campus but for some reason they were brought back due to, god-knows-what reason. I learn about all of this from Snapchat, finding out what's going on campus. Also, through newsletters people send out. There were number of incidents where the victim was confronted in public areas by the assaulter. The victim was supposed to have campus security escort them, but that didn't end up happening. The victim had to leave campus for their own safety because, of course, they don't feel comfortable being here when the campus wasn't going to restrain the assaulter from being in the same space, or the school in general. They shouldn't have been here to begin with. With all of that, there was a demonstration earlier during first semester with a lot of students voicing their frustration with the school. It was also motivated by the #MeToo campaign. The demonstration was calling out the administration for not handling this well.

Countless stories like this populate students' experiences, which then shape how they make sense of their place on campus. Students' growing awareness of their civil rights under Title IX,[437] combined with the political moment of the Trump Administration's attacks on basic civil rights and higher education amidst ongoing #MeToo revelations, Black Lives Matter demonstrations, and protests to protect Deferred Action for Childhood Arrivals (DACA) immigrants, creates an incredibly charged, if not hostile, environment on campus.

Campus administrators are more than understanding of students' anger. They see it as a reflection of young people learning to articulate their agency, but also admit, albeit cautiously, that it is difficult to work with. Referring to the same case discussed above, an associate dean confided, "Frankly, some of the investigations, they dropped the ball or they took way too long," and acknowledged students' call for a survivor-centered approach in Title IX investigation and adjudication as a legitimate demand. When I ask what this would look like, she admits:

> I don't know. On my cynical days, I envision that [students] they walk in, they say something bad happened and we expel the student. And we don't give that due process rights, like innocent until proven guilty. They [students] just want them gone. And I get why they want that. If I were in

[437] Celene Reynolds, "The Mobilization of Title IX across U.S. Colleges and Universities, 1994-2014," *Social Problems* 66, no. 2 (May 1, 2019): 245–73, https://doi.org/10.1093/socpro/spy005.

their shoes, I would want that too. But from the admin perspective, we just can't do that, we have to have the process. We can put the contact orders in place until we do our process, but it's not perfect.

Another echoed similar sentiment:

> Students have really found their voices and it's been really cool to see, but I think they also just wanna be mad about it. They don't care that the college has a legal obligation to provide the same due process to respondents as they do to survivors. And they just want the survivor to be believed and the respondent to be kicked off campus. Legally, we can't do that. And that's awful for the survivor, but we can't. it's tricky.

Title IX Coordinators, prevention specialists, and other administrators see an inherent tension in their role. Working closely with students, including survivors, they see firsthand how the students may be inadequately served by the grievance procedures in place. At the same time, as administrators bound by federal requirements and a commitment to fair process, they understand that there are protocols and standards in place that prevent them from simply acting out of sympathy.

Unfortunately, students are not always aware of these dynamics. At times, I heard campus administrators use expressions like "activist culture" and "very critical" to describe students, choices that reverberated with a sense of frustration. With nervous chuckles, a prevention specialist explained how she tries to contextualize students' anger towards administration, both for her own stake and to support student development:

> It's interesting to observe these [reactions] from the perspective of student development. How they're able to compartmentalize interactions with me or my team, and then in the same breadth, say, "the administration sucks." You do realize that we are in the administration?! [laughs] There's definitely some young adult development happening in student relationship to civil right, the existing of IX on campus, the ways in which how they do or don't respond, the rumor mill about any case, etc. So a lot of stuff going on. […] We have to appreciate that as administration and as staff. So just trying to do some, place-ourselves-in-time-and-space, let's recognize that we were just given the Dear Colleague Letters in 2011 and then in 2014, all of these things happened but only in the past six years. But I get that, as I am aging out as someone seen as potential college student, that time moves much more quickly than for students. So it's all of us needing to do some perspective technique in that way.

This specialist's thoughts on student response echoes safety authorities' exasperation with the rapidly changing regulatory landscape and its impact on their safety work and relationship with students. Her statement also points out how students conglomerate

various campus administrators as "the administration" without necessarily understanding how its branches are enabled and constrained by different standards, expectations, and resources. As understanding as safety administrators can be, what I heard consistently from my interlocutors is a deep sense of exasperation from empathizing with students, who are, at times, unforgiving, while trying to adjust their daily practices to the changes at federal level.

Considering their exasperation, it was unsurprising that many harbored dissatisfactions with "the university," referring to senior-level administrators. Safety administrators' hearts may be aligned with the students, but they were constrained primarily by restricted actionability and lack of resources that they interpreted as a sign of "not being a priority." As one Title IX Coordinate put it, "When you talk about money, we are not a priority. When it does, it's when something really bad happens." Recalling their experience trying to get Callisto off the ground, many of my participants expressed a shared concern that the issue of campus sexual assault was rarely a priority: it was easy to utter a general word of support that sexual harassment in higher education ought to be addressed, but when it came to allocating resources, making timelines, setting up meetings with the vendor, and discussing implementation plans, Callisto was simply not a priority.

Callisto as a bridge

The previous section examined the relationship between safety administrators and students through the administrators' perspective. Sympathetic to students, Title IX Coordinators and prevention specialists balance the difficult line of observing the challenges students face in navigating the bureaucracy of Title IX complaints and managing those bureaucratic procedures. In this section, I draw from my interviews and observations to demonstrate how their safety imaginaries mediate their perception of Callisto as a bridge to rectify institutional distrust.

Cognizant of how institutional distrust shapes students' help-seeking and reporting behavior, campus administrators believed Callisto could repair the relationship. "They [students] don't like to report, they don't trust the process, they don't trust the process at all," explained one residential dean. To her, Callisto was an attempt to encourage students to consider the process. A Title IX Coordinator on the same campus

explained how she saw Callisto's role "as a facilitator": "it's hard to walk through that door in person, but Callisto is in a format that's easier, less in your face."

That "format" is integral to how safety administrators perceive and project onto Callisto—the ability to choose how to report, privacy through encryption, and the ability to deliberate, which affords students a sense of control. These features embody designers' intentions as discussed in Chapter 4. Applied to the environment of expected use on campus, these features and safety administrators' safety imaginaries shape how they imagine Callisto's affordances for students. Safety officers imagined Callisto's digital format as agency-enhancing by nature. Comparing Callisto to traditional reporting channels, one participant explained: "It gives options. Students who want to start the process but can't come in person, they can use these apps." To this participant, reports ultimately ended at the same place in the same format: as an email to the Title IX Coordinator. The fact that students can now send that email directly through Callisto rather than booking an appointment with a staff they had never talked to before was understood as an empowering alternative. A prevention specialist added, "The possibility of writing your narrative and experience and sending that to the IX office at your own volition, having had the chance to get it all on paper, not really on paper ha, in your own time, feels good from what I've heard from students."

Participants emphasized how Callisto's encryption feature affords confidentiality to student-users. As one ombudsperson said, "Only the technology knows." Here, the ombudsperson's anthropomorphization of technology serves to distinguish "the technology" from human subjects. Only it knows and no one else. This echoed the obfuscation of anonymity and confidentiality that arose during my conversations with safety administrators. They observed how much students' decision to report dwelled on their equation of anonymity and confidentiality, even though the two, especially in the legal context of undergoing a Title IX process, are distinct in important ways. Anonymity removes identifiable information; confidentiality places restrictions on how certain information travels. Neither fully captures students' expectation of privacy when they first begin the reporting process: something akin to complete privacy. Aware of this expectation, safety administrators imagined Callisto's encryption to afford a sense of actual privacy to students. As one administrator described it, "Students can have that digital, password-protected encrypted file that is separate from the college, it's not on any college database. But it can be sent to the college at any time, with a date stamped, time stamped [if they choose to escalate to reporting]." She locates students' sense of

control in the user's ability to determine when the date and time stamps can be applied from the encrypted report.

Finally, participants saw Callisto as a survivor-centered alternative that created a space for students to process their experiences. Some participants raised concerns about due process implications of the matching feature (see Chapter 4), but they agreed that Callisto was distinct from traditional options for enabling deliberation. Here, Callisto's origin story about the founder Jess Ladd and how the vendor aligned with survivors in the market for reporting systems bolstered administrators' perception of the system as a trauma-informed and survivor friendly option. A prevention specialist explained, "The overall mission of the tool, of Callisto, being able to provide survivors with agency, with choice, the time and space they need and want and deserve, that is very much aligned with what I believe in, and how we do our work, so it seemed like a natural fit for me."

Through safety administrators' perception of Callisto's core functionalities, the reporting system emerges as not only a reporting instrument, but also an opportunity to mitigate institutional distrust through its digital, private, and deliberative reporting experience. As one Title IX Coordinator explained, "It is look good, not just a feel good because [it] symbolizes that the university cares." She added that the empirical impact of Callisto is "almost secondary" because its ability to bridge institutional distrust is "unquantifiable." This Title IX Coordinators' words capture how safety administrators perceive Callisto's bridging work, informed by its functionalities, as its foremost contribution to their campus.

A remote possibility

Callisto did facilitate reporting experiences, but a closer examination of how students made use of the system illuminates how students imagined using Callisto as a distancing act from the institution. In this section, I detail the Callisto success stories campus administrators shared to underscore how students interacted with the system in order to maintain a degree of separation from the administration. Students leveraged their understanding of Callisto's matching feature to submit reports, while maintaining their anonymity; they want to bring the offender to Title IX Coordinator's attention without exposing their identities or undergoing the grievance procedure.

During one conversation with an ombudsperson, she recounted how students initially responded with skepticism to Callisto, "a 'yeah, right' with an eyeroll." It was

the stories she shared of founder Jess Ladd's own experience of campus sexual assault that changed their minds to begin to see the system as "a remote possibility." My participant describes how Callisto has made the possibility of reporting "remote" in contrast to complete rejection before. But the word "remote" is also illustrative of how students approach reporting: Callisto is an instrument through which they can share information with safety administrators without undergoing the reporting procedure themselves.

The stories campus administrators shared followed a similar plot. Students, including some with express interest of undergoing the Title IX complaint procedure and others who are intent on remaining anonymous, worked together to file a Callisto report. Students desiring anonymity would share their accounts with students seeking a formal procedure to ultimately generate a collective report. The objective was clear: hold the repeat offender responsible and ensure that only those seeking a formal process share their identities. This way, students desiring anonymity remained "remote" even as they shared their stories to bolster their peers' complaints against repeat offenders.

In one case, students from different campuses worked together to file a report. The complicating factor here was jurisdiction: a group of institutions operate as a consortium in which campus borders are porous and resources are shared. Yet, only the Title IX Coordinator's institution offered Callisto and more robust Title IX support services. Students from various campuses spent months of toiling over reporting before finally reaching out to student advocates, who then consulted the Title IX Coordinator. The students shared a single objective of informing the administration of the repeat offender. With the Title IX Coordinator's support, the students filed several formal reports with Callisto, including some where several students generated one report to share their stories. In order to navigate the particular institutional arrangement of this campus, students, advocates, and the Title IX Coordinator strategized together to maximize Callisto's matching feature. These stories demonstrate how students' perception of Callisto's anonymity and matching algorithm enabled them to report in a manner that identified repeat offenders, bolstered complainant's case, and maintained supporting students' anonymity.

Why would some students want to remain remote?In my conversation with a student who played a pivotal role in implementing Callisto on campus, she echoes campus administrators in identifying key features. The ability to report at your own pace and do so iteratively, in particular, are important to her. She explains:

> I think having the ability to go online and write down your thoughts and write down whatever you want to about your assault is very empowering in that it gives you all of the control in a time when you don't have much control over other things in your life. Then also the fact that, by the virtue of being online, it's available 24/7. And that's not something we necessarily have with police reporting or with the Title IX office. Specifically, if you want to report directly to Title IX office, Callisto goes directly goes to Title IX office, you can't really do that like at Saturday at midnight whereas you can do that with C. So that was definitely an advantage and a gap that existed with [my school's] reporting systems.

The student's use of in/direct metaphor[438] is important to note, as it is echoed by others. If going to the Title IX office and speaking to a Title IX Coordinator is "reporting directly," Callisto offers "an indirect way," "a bridge." In other words, Callisto does the work of bridging instead of the user; the user can remain in their place while Callisto carries the complaint to the Title IX office. As a result, the user can maintain her distance from the Title IX office. Campus administrators shared a number of hypotheses about how and why students actively seek to distance themselves from the reporting process. One explanation is that the deep shame associated with sexual assault disincentivizes survivors from disclosing their experience to anyone. In this regard, human contact, however sympathetic they may be, operates as a barrier to disclosure.

Seeing sexual assault as an affront to selfhood explains how and why students would see human contact as a source of judgement irrespective of the human agent's competence or sympathies as a confidant. While my ethnographic findings would not go as far as to suggest that Callisto operates as a communicative agent, students' perception of Callisto as a non-human source, if not, site of disclosure is crucial. For purposes to extending this analysis, turning to human-computer interaction (HCI) scholarship on social interactions between human and technological agents is helpful. Emerging research on human-technology interaction supports this idea that humans see technological communicators as "distinct social actors"[439] with which humans make meaning,[440] and how this capacity for distinct communicative interaction[441] may contribute to demystifying and facilitating sexual harassment reports, at least for

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[438] George Lakoff, *Metaphors We Live By* (Chicago, Ill. ; London: University of Chicago Press, 2003).

[439] Andrea L. Guzman and Seth C. Lewis, "Artificial Intelligence and Communication: A Human–Machine Communication Research Agenda," *New Media & Society*, July 4, 2019, 1–17, https://doi.org/10.1177/1461444819858691.

[440] Gina Neff and Peter Nagy, "Talking to Bots: Symbiotic Agency and the Case of Tay," *International Journal of Communication* 10 (2016): 17.

[441] Henriette Cramer et al., "'Give Me a Hug': The Effects of Touch and Autonomy on People's Responses to Embodied Social Agents," *Computer Animation and Virtual Worlds* 20, no. 2–3 (2009): 437–45, https://doi.org/10.1002/cav.317.

witnesses.[442] Callisto is not a communicative agent, but it is perceived as an alternative that is a distinctly non-human, non-Title IX Coordinator. This perception crucially guides how users experience a sense of distancing when reporting through the system, rather than walking through a Title IX Coordinator's door.

Callisto thus affords a sense of distancing, but not without repercussions. My interlocutors expressed serious concern that reporting through the system, more so than other reporting channels, creates and exacerbates misleading expectations towards reporting outcomes. "It creates an expectation," said one Title IX Coordinator, exasperated. The expectation is generally two-fold: the expectation that (1) the complainant's participation is no longer necessary; and (2) the process will yield prompt and favorable outcomes. As others explained, "There is an element of, 'Okay, I did my part. If I write these two paragraphs, then I don't have to be involved.'" The distancing afforded by Callisto created a sense of alleviation and maybe even freedom from the reporting process, because users saw the submit button as "sending it off" to the Title IX Office." The Coordinators acknowledge that, "When they report, the ball's in my court," but the Title IX process, as one succinctly put it, remains "a process, not an outcome." It's a process that requires direct engagement from the complainants in order for lengthy investigations and even more laborious adjudication to continue and reach some form of redress. This direct engagement is also essential for ensuring that the process is "fair to both parties."

Beyond informing complainants about the reality of Title IX process and managing their expectations, the users' expectations present a number of procedural difficulties for Title IX Coordinators. One Title IX Coordinator summarized the two issues at stake. First, students develop an expectation that there is no need for face-to-face communication. Callisto's deliberative reporting interface is what students and campus administrators almost unanimously identified as the single most valuable part of the system. Having an uninterrupted and nonjudgmental space to freely write down what happened is a crucial part of remembering and maybe even recovering. From

[442] Julia Shaw, Camilla Elphick, and Rashid Minhas, "Witnessing Workplace Harassment and Discrimination: Overcoming the 'Social Contagion' of Toxic Work Culture," White paper (Spot, 2019), https://talktospot.com/downloads/Spot_Whitepaper.pdf.

psychology[443] to philosophy,[444] scholarship on memory and healing examines "how saying something about the memory does something to it,"[445] as philosopher Susan Brison writes in her reflections on testimonials of trauma. But the deliberative benefits of documenting on Callisto does not exist in a vacuum, and it is followed by multiple bureaucratic faces and steps that require the complainant's time and attention. Writing down what happened is, regrettably, only the beginning of the Title IX process. Queer theorist Jennifer Doyle's observation that "Victims report because they need help; the campus receives reports because it is bound by law to do so. This asymmetry warps their interaction," poignantly captures how the deliberative user experience of Callisto and its role in the wider Title IX process may be at odds. This is perhaps why complainants seek to maintain distance and anonymity in their interaction with the Title IX office. The administrators are not unaware of this, but as they explain, reporting, investigating, and adjudicating are "so complex and nuanced, to do that without face-to-face or even a phone call and only communicate in writing?" It's incredibly difficult.

Relatedly, Callisto's emphasis on its anonymous reporting option mischaracterizes anonymous reports as actionable reports. There is an expectation that anonymous submissions would lead to full investigations, and this expectation is not unique to Callisto. Campus administrators repeatedly voiced exasperation with how students misunderstand anonymity in reporting. While anonymous complaints make important contributions in gauging campus climate and informing broader policy and cultural changes on campus, if complainants desire specific redress, there comes a point where anonymity hinders the Title IX process. Without knowing the parties involved, the investigation cannot progress. This confusion is widespread, and it marks students' help-seeking experiences from the start. A sexual violence prevention specialist explained how her university created a confidential support team as a one-stop shop in order to mitigate the confusion around anonymity in the reporting process.

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[443] Courtney E. Ahrens, Janna Stansell, and Amy Jennings, "To Tell or Not to Tell: The Impact of Disclosure on Sexual Assault Survivors' Recovery," *Violence and Victims* 25, no. 5 (October 2010): 631–48, https://doi.org/10.1891/0886-6708.25.5.631; Bessel A. Van der Kolk, *The Body Keeps the Score: Brian, Mind, and Body in the Healing of Trauma* (New York: Penguin Books, 2015); Jim Hopper, "How Reliable Are the Memories of Sexual Assault Victims?," Scientific American Blog Network, accessed February 5, 2019, https://blogs.scientificamerican.com/observations/how-reliable-are-the-memories-of-sexual-assault-victims/.

[444] Nancy A. Naples, "Deconstructing and Locating Survivor Discourse: Dynamics of Narrative, Empowerment, and Resistance for Survivors of Childhood Sexual Abuse," *Signs: Journal of Women in Culture and Society* 28, no. 4 (June 2003): 1151–85, https://doi.org/10.1086/368323.

[445] Susan J. Brison, *Aftermath: Violence and the Remaking of a Self* (Princeton, N.J.: Princeton University Press, 2003).

> We've made efforts to name the confidential support team as the one-stop shop. We are in agreement across the offices that we always encourage the confidential support team as the first stop. Then they have all options without the possibility of mandatory reporting, and the small possibility of institution having to move forward without student support. So that's the language we're still using to encourage folks to access resources if people are overwhelmed. If you end up at any offices and you want to end up elsewhere, we just take you there. We recently moved to one building so all our options are in one building. But we all have the agreement that we take students where they want to go, we'll literally walk them to the right office.

Having the different types of resources available in one building appears to have greatly helped this specialist direct students to appropriate resources. But for students who do not make it to the building and only access information through Callisto, the system's promise of anonymity (see Chapter 4) further confounds students' expectation of what is to come. "Being able to communicate the limitations that exist in taking action for anonymous reports" remains, as a Title IX Coordinator said, one of the biggest difficulties of guiding students through the Title IX process.

Lost reports

However much Callisto is contributing to the increase in reporting, it remains, like LiveSafe, mostly unknown and underutilized. Conversations with student advocates further revealed that there were serious technical glitches, which they attributed to their institution's lack of care. The general unfamiliarity and student advocates' growing skepticism represent the one-sided nature of what campus administrators see as Callisto's bridging affordance. "Right now, we're having issues with our reports not making it to Title IX office," said one student advocate, explaininghow they "are noticing reports that go missing." Usually, the advocates file a Title IX complaint with a student and then follow up with a Title IX Coordinator to ensure that the submission is received; lately, however, this has not always been the case. They have also observed cases where, in spite of clicking the submit button, reports were not sent. "So, very key aspects are not working," one advocate noted, "We have no idea how many reports have been lost." They contacted the vendor, who did not identify any errors. With the vendor eliminated as the potential source of missing reports, student advocates hypothesized that the Title IX office might not be up-to-date on their Callisto use. "Just in our meeting today, we

said that it's possible that the Title IX Coordinator is just not checking her spam folder…so, the issue is on the human error side." As another advocate put it:

> It's super worrying. It's concerning especially because I've gone and told people about Callisto, it's a great way to report if you want to write down yourself. Now I'm not sure, if people are just out there waiting for Title IX to take action on their cases thinking they have their report, but just being ignored by the IX Coordinator and the college when there's been some sort of error in the system. And they're waiting for something that's never going to happen. It's worrying. We're not quite sure what to do about informing the college population in general.
>
> What's really worrying for me are the people who don't work with us and just do it on their own. No one's going to tell them that it's not working. The "save" thing is really concerning because Callisto really highlight[s] that, "you can write it at any point." And going back and seeing that everything you've written has been lost. It's bad.

The advocates really wanted Callisto to work, but discovering a number of technical problems made them cautious of how they promote the system. They showed me how they made a post on their Facebook page to share these concerns about Callistoas a way to inform the wider student body. The post was made over a month ago and had only nine likes.

CONCLUSION

This section detailed the various sociotechnical imaginaries that mediate how campus administrators imagined Callisto's function on campus. It showed how campus administrators imagined Callisto as a bridge to rectify students' institutional distrust. However, the ethnographic accounts presented here demonstrate how students utilized Callisto precisely because of their perception of its independence from their institutions. These perceptions in tension exemplify how campus administrators and students' respective perceptions about the system's features and functionalities were mediated by their relationship to their institutions.

6. Conclusion

This dissertation began with the question of how data-driven and algorithmic reporting systems reconfigure the ecosystem of campus safety in US higher education in spite of being primarily unknown and unused. It located these emerging reporting technologies in the raced and gendered history and politics of sexual violence, including more recent impulses to bureaucratize and codify sexual misconduct in higher education. The ensuing two chapters took a deep dive into the technological and aesthetic apparatus of reporting systems to examine how ideas about gender, safety, and technology are co-produced through design. For LiveSafe, its sociotechnical logic of intuition lowers the threshold of reporting by legitimating bodily impulses in response to raced and gendered imageries of threat. For Callisto, its singular focus on sexual assault creates a vision of progress in which the sociotechnical imaginaries of campus rape and data are linked to proffer reporting as a desirable intervention. In my final chapter, I situated the reporting technologies in their use-environments to demonstrate how students, safety authorities, and campus administrators' experience and safety practices are shaped by sociotechnical imaginaries.

Since I first began researching reporting technologies nearly five years ago, the market for reporting technologies has continued to grow. Today, LiveSafe is on its way to becoming Vector Solutions:[446] the vendor's name and brand change indicates its expansion in its verticals and services, including an "AI powered" chatbot[447] for submitting tips and WorkSafe for managing COVID-19 related health and safety concerns.[448] The re-branding is even more sleek, minimalist, and, most crucially,

[446] LiveSafe, "LiveSafe is Becoming Vector Solutions," accessed January 23, 2021, https://www.vectorsolutions.com/about-us/acquisitions-livesafe/?__hstc=15861417.a0b445a74e3143e2bd207dfa00dbe46e.1609447293661.1609870635036.1611518638669.3&__hssc=15861417.5.1611518638669&__hsfp=1755193105.

[447] Ibid., "Chatbot Tip Submit," accessed January 23, 2021, https://www.livesafemobile.com/.

[448] Ibid., "WorkSafe," accessed January 23, 2021, https://www.livesafemobile.com/worksafe/.

generalized, reflecting the vendor's decision to frame safety as universally known and experienced. Callisto has undergone a rebranding as well.[449] The non-profit had placed a temporary pause on their higher education expansion to focus on developing an enterprise clientele. Following a period of organizational and leadership changes, the vendor has returned to its higher education roots with a re-design that positions itself as a one-stop shop for student-survivors seeking help. Callisto appears to have made a decision to de-emphasize reporting as indicated through a more robust and higher education-specific set of guidelines and resources about remedies beyond reporting.

The changes at LiveSafe and Callisto are reflective of the shifting digital landscape of how institutions govern safety. The sociotechnical imaginaries through which LiveSafe and Callisto gained purchase are present in the growing reach of reporting technologies beyond the campus. Online reporting systems are now commonplace as employers digitize and automate how they organize and manage internal affairs. Alphabet Inc., for example, responded to the 2018 Google sexual harassment walkout by creating an "Alphabet helpline" centered around a case management system developed by a third-party vendor called Ethics Point.[450] A chatbot-driven case management system called Spot is integrated into the human resources (HR) departments of companies like Monzo, Highsnobiety, and Slack.[451] Vault Platform, a reporting system with a matching algorithm feature similar to Callisto, includes a clientele ranging from Airbnb to Change.org.[452] Both Spot and Vault Platform share an origin story like Callisto about the founders' own experiences with sexual harassment that legitimates data-driven replacement of the reporting process as novel, progressive, and desirable. I have even learned recently that my high school adopted an online anonymous helpline for reporting workplace misconduct and other compliance-related concerns called Lighthouse after allegations of sexual misconduct.[453]

The examples above, in companionship with LiveSafe and Callisto, indicate the ways in which technologies increasingly facilitate, manage, and govern appropriate conduct in public, private, and intimate spheres, and do so through gendered sociotechnical imaginaries about intuition, credibility, and trust. Elsewhere, I termed

[449] Callisto, accessed January 23, 2021, https://mycallisto.org/.

[450] Alphabet Inc., "Alphabet Helpline," accessed January 23, 2021, https://secure.ethicspoint.com/domain/media/en/gui/53831/index.html.

[451] See https://talktospot.com/index.

[452] See https://vaultplatform.com/.

[453] See https://www.lighthouse-services.com/.

these systems "technologies of sexual governance"[454] to capture how data-driven and automated technologies are increasingly utilized by institutions to mediate the formal and informal surveillance, management, and arbitration of sexual affairs. As technologies evolve, the familiar critique against technological solutionism is an inadequate framework that flattens whose concerns are being mitigated through technological deployment and obfuscates how and why different stakeholders see and gain value from technological solutions. A key contention of this dissertation is that broadening the scope of analysis beyond immediate use offers a more nuanced and precise assessment of the social impact of technological solutions. I demonstrated how sociotechnical imaginaries and gendered social relations co-produce ideas about safety that lend legitimacy and establish trustworthiness to reporting technologies. A triangulation of ethnographically informed methods used in this project exhibits how a systematic walk-through of interface design, in tandem with an inquiry into how participants make sense of their interactions with reporting systems, can offer an insight into how different stakeholders make meaning with and through reporting systems. In doing so, I aimed to demonstrate how critical inquiry of technological solutions needs to shift away from a narrow focus on whether they solve social problems or not, and towards a more expansive analysis of the conditions through which technologies emerge as a viable and desirable solution.

In this concluding chapter, I draw from my ethnographic findings and analyses thus far to identify areas for future research and make recommendations for technologists, practitioners, and policymakers. For researchers at the intersection of human-computer interaction (HCI) and gender and sexuality studies, I point to two areas for further inquiry. The first area invites mixed-method studies that explore the evolving role of reporting technologies as communicative agents that facilitate and mediate the disclosure of sensitive and socially stigmatized information. Next, I discuss how the concept of sociotechnical imaginaries and the critical study of gender and sexuality as social categories can offer an analytical scaffold for a more nuanced critique of technology. My recommendations that follow focus on the campus context to provide concrete examples of how my recommendations can be operationalized and implemented, but they can be implemented in other contexts, such as the workplace or interest groups, where a group of people shares social spaces. I begin with a set of paradigmatic shifts for both technologists and policymakers, and then provide concrete

[454] Kate Sim, "Respond and Resolve: Technologies of Sexual Governance," *Global Perspectives*, Forthcoming in 2021.

suggestions for each. The chapter concludes with final thoughts on a politics of sexual justice.

Directions for future research

I discuss this dissertation's scholarly contributions to its conversant fields. I first discuss how an analytical approach that examines sexual politics and technology as co-constitutive enriches critical technology scholarship. Next, Isociotechnical imaginaries as a concept enriches theorizations about the relationship between gender and technology. The ethnographic approach of this research calls for more empirical applications of the concept that is grounded in particular sites. Finally, I discuss how digitally mediated reporting systems ought to be taken more seriously as a communicative agent, which invites further scholarly inquiry.

Co-shaping of technology and sexual politics

This dissertation's key contribution rests in its empirically grounded demonstration of gender and technology's co-shaping. Through a triangulation of ethnographically informed methods, it illustrates how ideas about gender, particularly the imaginaries about sexual violence, and technology mutually shape the conditions through which safety is imagined and technologies are built and used. In doing so, this dissertation contributes to critical scholarship on technology by complicating and nuancing theorizations about the mutually constitutive relation of sexual politics and technology.

While there is a growing body of literature on safety technologies, including reporting systems, it focuses largely on how gendered assumptions about sex and power are encoded in the design of emerging technological systems. In doing so, it implies a position of bifurcation: there exist a more "feminist" thinking about sex and power that is being mischaracterized, if not, appropriated, by and through technology. The implicit position of bifurcation here delineates matters of sexual politics from technology. This framing figures technology as a blunt instrument and its makers as clueless men. Instead, this dissertation turns to critical scholars who take race, gender, sexuality, and technology as powerful institutions that shape shared social conditions. Noble's interrogation of how

search algorithms classify and stabilize discriminatory racial categories,[455] Nakamura's examination of Navajo women's gendered and racialized labor underpinning early electronic manufacture,[456] and McKinney's exploration of lesbian feminists' print and digital archiving practices as information activism[457] are just a few examples of how ideas about race, gender, sexuality, and technology intertwine to create conditions through which emerging technologies take form.

By taking reporting technology seriously as a cultural object, this thesis makes a case for an analytical framework attuned to the mutually constitutive nature of sexual politics and technology. As the earlier chapters shows the story of reporting technologies is a complicated one. Chapter 5, for example, I demonstrate how, even as campus authorities publicly denounce victim-blaming mentality, their attachment to sociotechnical imaginaries reflects an underpinning ideology that is unduly critical of sexual violence claims' credibility. Technology is not being done onto sexual politics, nor will encoding certain ideas about sex and power to technology will make technologies "better." Instead, this dissertation contends that an analytical precision about the mutually constitutive relation of sexual politics and technology enables critical scholars and interlocutors to ask different kinds of questions. Taking reporting technologies seriously as a cultural object enables this project to investigate how particular ideas about sexual violence gain purchase through technological instantiation. It is through this analytical focus on the co-constitutive relationship of sex, power, and technology that this dissertation is able to illustrate how sociotechnical imaginaries mediate different stakeholders' attachment to reporting systems. Rather than assessing the merits of reporting systems, this dissertation asks *how* particular ideologies about sex and power gain purchase through technological forms and logics.

This analytical inquiry also complicates the gendering of technology production and use. An important empirical contribution of this thesis is that reporting technologies gain institutional purchase through the vendors' origin stories. In both cases, as detailed in Chapters 3 and 4, the founders' stories about their personal traumas are integral in how the products are created, implemented, and legitimated. Conceptualizing the sex-technology relation as mutually constitutive offers a nuanced analytical framework

[455] Safiya Umoja Noble, *Algorithms of Oppression: How Search Engines Reinforce Racism* (New York: University Press, 2018).

[456] Lisa Nakamura, "Indigenous Circuits: Navajo Women and the Racialization of Early Electronic Manufacture," *American Quarterly* 66, no. 4 (2014): 919–41, https://doi.org/10.1353/aq.2014.0070.

[457] Cait McKinney, *Information Activism: A Queer History of Lesbian Media Technologies* (Durham: Duke University Press, 2020).

through which the researcher can follow the gendering work encoded in each system. Technology remains a masculinized institution, but this project's analytical approaches complicate and nuance this critique by illustrating how shared imaginaries of safety bring unlikely partnerships together. In this case, students and survivor advocates otherwise critical of law enforcement, safety authorities, and designers are brought together through their shared sociotechnical imaginaries of safety. Theorizing sexual politics and technology as co-constitutive thus enables a more precise analysis.

Applications of sociotechnical imaginaries

This dissertation argues that imaginaries about safety, specifically through the spectacle of sexual violence, and technology co-create the conditions through which the problems and solutions of campus safety are articulated. It applies the concept of sociotechnical imaginaries to detail the gendering of campus safety and digitization of higher education institutions' particular visions of safety. In doing so, it aims to enrich interdisciplinary scholarship on the intersection of safety and technology. I identify two areas for further inquiry: (1) the intersection of sexual violence and technology; (2) theorization of safety; and (3) empirical applications of sociotechnical imaginaries.

Sociotechnical imaginaries as a concept provides a lens for interrogating gendered power relations. In this regard, it challenges gender and sexuality scholarship on sexual violence to take technical systems seriously as analytical objects. Scholarship on sexual violence from gender and sexuality studies that helpfully framed this dissertation's theorization of rape imaginaries still assumes technology to be a simple discursive tool. Technical systems are an instrument through which legal and political institutions enact power over sexual governance. However, technologies not only mediate what is known about sexual violence, but, as reporting systems gain traction, they increasingly govern what is to be done about sexual violence. This dissertation's empirical study of LiveSafe and Callisto demonstrates what socially situated actors *do* with and through reporting technologies. Reporting technologies do not simply perpetuate rape myths; rather, they mediate how sexual violence and, by extension, safety become known and experienced. This raises a warrant for sexual violence scholarship to take technological systems seriously as an analytical object, and sociotechnical imaginaries offers a useful framework to do that.

Secondly, by making a case for a sociotechnical understanding of safety, this research calls for more robust theorization of safety. As discussed in Chapter 1, conceptualizations of safety in gender and sexuality studies define it through its objects of fear. In doing so, they make the implicit assumption that safety is intuitive and essential. This dissertation, however, suggests that safety—as a feeling, principle, or imagination—warrants its own academic inquiry. The sociotechnical shaping of campus safety detailed in this research demonstrates how particular ideas about what is safe and what safety ought to be, rather than ideas about what to police or prevent, gain purchase. The growing body of work on "trust and safety" in platform governance scholarship may offer one direction of extending the sociotechnical theorization of safety. As technology companies increasingly articulate safety as a unique principle, ethos, and practice, this framing warrants critical inquiry of the sociotechnical construction of safety.

Lastly, this dissertation's use of sociotechnical imaginaries makes a case for empirical methods. In spite of Jasanoff and Kim's outline for operationalizing sociotechnical imaginaries, applications of the concept largely employ historical and discursive methods. One of the main contributions of this research is that it demonstrates, through ethnographically informed methods, how sociotechnical imaginaries operate on the ground. The triangulated methods used in this dissertation capture how sociotechnical imaginaries emerge from and unfold within particular situated contexts of campus safety. It demonstrates an empirical case for the concept, bolstering its efficacy as an analytical framework. As safety technologies continue to branch outside the campus walls into workplaces and the streets, my thesis offers a cautionary tale about not only the inefficacy of these technologies in actually preventing or mitigating harm, but also how they attempt to bridge users' relationships to institutions of power.

Reporting systems as communicative agents

Much of the public and academic discussions about reporting technologies designed for sexual harassment and other misconducts center around whether reporting technologies should exist. This research makes the case that digitally mediated reporting facilitates and potentially creates a reporting experience that in-person reporting does not and perhaps cannot offer. My ethnographic findings thus support the hypothesis that digitally mediated disclosure of sensitive and socially stigmatized information (i.e., sexual assault) can be more effective than, or preferred over, in-person disclosure. Recall

how, for both LiveSafe and Callisto, the opportunity to report independently and privately afforded a sense of autonomy. Some ethnographic accounts also suggest that the non-humanness of digitally reporting is what may incentivize some users to disclose and do so sooner and in more detail, which may facilitate a better help-seeking experience.

The HCI research community is uniquely positioned to investigate the communicative potential of reporting technologies. Emerging research on human-technology interaction supports this idea that humans see technological communicators as "distinct social actors"[458] with which humans make meaning,[459] and how this capacity for distinct communicative interaction[460] may contribute to demystifying and facilitating sexual harassment reports, at least for witnesses.[461] Reporting applications like LiveSafe and Callisto are perceived as an alternative that is distinctly not institutionally affiliated and non-human. This perception crucially guides how users experience a sense of distancing when reporting through the system, rather than walking through an administrator's door. Taking reporting systems seriously as communicative agents invites HCI research communities to examine the affective and social dimensions of disclosing sensitive information to digital agents. HCI literature on affective computing[462] in particular offers a useful analytical scaffold for conceptualizing the sociocultural factors that inform how non-human agents mediate users' interaction with sociotechnical systems.

Another reason why the HCI research community is particularly well-disposed to investigate the reporting systems as communicative agents is how the field straddlesacademia and industry. Should users prefer disclosing sensitive information to technological systems, there is potential for practical application in campuses, workplaces, and, especially, in social work.

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[458] Andrea L Guzman and Seth C Lewis, "Artificial Intelligence and Communication: A Human–Machine Communication Research Agenda," *New Media & Society*, July 4, 2019, 1–17, https://doi.org/10.1177/1461444819858691.

[459] Gina Neff and Peter Nagy, "Talking to Bots: Symbiotic Agency and the Case of Tay," *International Journal of Communication* 10 (2016): 17.

[460] Henriette Cramer et al., "'Give Me a Hug': The Effects of Touch and Autonomy on People's Responses to Embodied Social Agents," *Computer Animation and Virtual Worlds* 20, no. 2–3 (2009): 437–45, https://doi.org/10.1002/cav.317.

[461] Julia Shaw, Camilla Elphick, and Rashid Minhas, "Witnessing Workplace Harassment and Discrimination: Overcoming the 'Social Contagion' of Toxic Work Culture," White paper (Spot, 2019), https://talktospot.com/downloads/Spot_Whitepaper.pdf.

[462] Luke Stark, "Affect and Emotion in digitalSTS," in Janet Vertesi and David Ribes, eds., *DigitalSTS: A Field Guide for Science & Technology Studies* (Princeton, NJ: Princeton University Press, 2019); Rosalind W. Picard, *Affective Computing* (Cambridge, Mass. ; London: MIT Press, 1997).

Designing reporting technologies

One of the more practical contributions of this dissertation is a demonstration of how particular design choices can enhance survivor-users' reporting experience. Below, I share a number of recommendations for technologists that that draw from my ethnographic findings. By "technologists," I am addressing anyone involved in the process of developing and implementing reporting systems, included but not limited to, engineers, user and user experience researchers, product managers, and members of the general counsel, among others. For purposes of this section, I use "technologists," "vendors," and "designers" interchangeably. When recommendations pertain to specific positions, I specify their title (i.e., user experience [UX] researchers).

Technologists have a real opportunity to create accessible, inclusive, and purposeful systems for reporting and help-seeking. To do this, it is integral that technologists understand how and why users seek out digitally-mediated reporting channels as a desirable alternative to speaking to authorities directly. In my previous chapters, I have demonstrated how the insidious imaginaries of campus sexual assault have a real, lived impact on survivors who actively seek out data-driven and automated alternatives to in-person appointments. The takeaway for designers here is that reporting and help-seeking technologies that have users' best interest must minimize reproducing such imaginaries in not only how the systems are designed, but also how they are presented to users.

Comparing and contrasting LiveSafe and Callisto at work makes clear how reporting brings together the different incentives, needs, and constraints of students and administrators. Designing a reporting system is thus a balancing act of negotiating between the universality of safety with the specificity of particular safety issues, like sexual assault. LiveSafe affords clarity and confidence to safety authorities, but its flattening of various safety concerns as "tips" obfuscates its perceived purpose to the point of drastic non-use by students. On the other hand, Callisto employs some novel design choices for a trauma-informed reporting experience, but its focus on reporting's evidentiary function reveals a bias towards exceptionally violent forms of sexual assault and a mission to incentivize reporting that leads to user disappointments. These design shortcomings are indicative of how neither administrators and authorities nor students are adequately served by the reporting systems.

The core issue at stake here is each vendors' desire to maintain its role as an intermediary. Callisto and LiveSafe each position their product as an information carrier, delivering a report from one end to another. However, as my ethnographic findings demonstrate, their role extends beyond that of a courier. They place an active role in facilitating users' help-seeking experience and administrators' interpretation of reports. Especially as reporting technologies, through machine learning and matching algorithms, take on a more communicative role, vendors must accept and take ownership of their place as mediating agents in the complex ecosystem of community safety.

This is not to suggest that vendors must align with one set of actors and reject the other. Vendors' independence from the client institution has certain benefits. As discussed in Chapter 5, vendors' position as external to the university affords it much-needed reliability and trust that enable the authorities, administrators, and students to use reporting tools. Rather, vendors have a responsibility to take their role seriously as a guide to help-seeking. This requires changes in vendors' business and operating models so that the customization they offer to clients is more targeted, rather than a simple copying and pasting of client names and resources.

Before my recommendations begin, it is worth pointing out that some may be untenable. I am well aware that some of my recommendations are more actionable than others; some are legally untenable, if not somewhat preposterous. My aim in making these recommendations is to be bold in envisioning the place for technology design in service of a more equitable and just politics and practice of sexual justice. This means revisiting ideas like "survivor-centered" discussed throughout this dissertation to speculate the many shapes and forms reporting systems can take. Where relevant, I acknowledge the particular limitations, such as costs and legality, and set them aside to focus singularly, perhaps even gratuitously, on what survivor-centered technologies of reporting could look like.

SEPARATE REPORTING FROM HELP-SEEKING

Reporting technologies already act as a one-stop shop that offers comprehensive and digestible information about help-seeking. However, as I demonstrated in previous chapters, vendors provide help-seeking information insofar as it is in service of nudging users to report. For example, LiveSafe offers little to no information about what happens after tip reporting (see Chapter 3). The concerted efforts Callisto makes to simplify the matching feature with infographics and symbols are nowhere to be found in text-heavy

sections of the interface that explain what happens after reporting (see Chapter 4). The discrepancy in available information and disproportionate efforts made to make that information accessible and digestible indicate how vendors isolate reporting from the broader help-seeking process.

This is a disservice to users who are at various stages of their help-seeking journeys. Besides not providing a full picture of the available resources and options, it obfuscates reporting *as* help-seeking. Reporting can be rewarding for some users, but as I mentioned throughout this thesis, it is only one of many remedies survivors can pursue and one that can be laborious, costly, alienating, and traumatizing.

Reporting technology vendors separate reporting from help-seeking so that users can both access comprehensive information about the resources and recourses available to them and undergo a trauma-informed reporting process. To do this, vendors need to embrace providing accessible and digestible information as a key feature. Software design's penchant for delivering complex information into digestible bits through simple and accessible symbols and infographics can be a real boon that helps users under duress understand and navigate their options. That way, for those who choose to undergo reporting can start their process with a clear understanding and reasonable expectation of what is to come.

This can be done during the user experience (UX) research phase. Based on my findings, vendors' current focus on reporting behaviors, as detailed in LiveSafe's card sorting exercises (Chapter 3) and Callisto's reporting interface design (Chapter 4). During UX research, research scientists can conduct information architecture studies to investigate how students navigate the university's resources. Currently, vendors copy and paste non-reporting information from university websites, which not only nudges students towards reporting, but also reproduces the gaps in knowledge. This means making sure that help-seeking information is accurate, accessible, and up-to-date, rather than copying and pasting information from client's websites.

MANAGE EXPECTATIONS

Another consequence of equating reporting with help-seeking is that it creates a false expectation that reporting through the system will lead to desirable outcomes. By the time users realize that reporting technologies have only begun the process, the disappointments not only lead to user drop-offs, but also have the potential to demotivate

users' future help-seeking experience. Situating reporting as just one possibility of an iterative process that is help-seeking is crucial.

One way to operationalize this is by managing user expectations. The strategies LiveSafe and Callisto use to assure users about data privacy can be applied. At the time of my study, neither LiveSafe nor Callisto provided comprehensive and digestible information about what can happen after users click "submit." All the efforts are concentrated on explaining the before and during phases of reporting, reflecting the vendors' underpinning worldview that they simply operate as couriers that deliver complaints from one end to another. My ethnographic findings, however, suggest that users develop a reliance on reporting technologies through their interaction with the reporting interface. As reporting interfaces become more deliberative and reporting systems take on a greater communicative role, this reliance will likely intensify. Moreover, the information vendors provide to encourage use creates the misleading expectation that using the system will lead to desirable outcomes.

To minimize, if not, prevent, disappointment, designers must manage expectations. There are multiple obvious points in the user flow at which to do this. Vendors can provide digestible information about the lifecycle of a report, who has access to the report, and the timeline so that users can understand their interaction with the interface as a first step in starting the reporting process. While users interact with the interface, questionnaires can be complemented with assurances and reminders about what happens to the report once submitted. After submission, the system can once again share information about reporting.

EXPAND DELIBERATION

My ethnographic findings make the case that reporting's function is not only evidentiary, but also restorative. In Brison's words, "The communicative act of bearing witness to traumatic events not only transforms traumatic memories into narratives that can be integrated into the survivor's sense of self and view of the world, but also reintegrates the survivor into a community, re-establishing bonds of trust and faith in others."[463] The opportunity to write down what happened is thus an integral component of users' healing process. Reporting technologies that fixate solely on their evidentiary function foreclose an important restorative opportunity for users. This is why having

[463] Susan J. Brison, *Aftermath: Violence and the Remaking of a Self* (Princeton, N.J.: Princeton University Press, 2003), x-xi.

prefigured categories that may be convenient for authorities are not conducive for users' needs because those categories do not align with users' expectations of safety and violence.[464]

The reporting interface should be designed in ways that facilitate how users can make sense of what happened to them. There are multiple ways to do this and they can be done concurrently. One approach is to really expand the deliberative components of the reporting interface. This means drawing out the reporting interface so that users can remember and reflect on what happened in order to arrive at what they need and desire moving forward. The aim is not to collect essential evidentiary details in preparation for a formal report, but rather, to help users make sense of what happened and how they would like to move forward. Callisto's existing design practices, including a trauma-informed questionnaire and built-in assurances, offer a useful template, but they are still in service of the interface's goal to incentivize a formal report. This means amplifying the sensemaking component of writing down what happened; instructions for evidence gathering and timeline construction can happen after. This structure should be communicated through baked-in reminders and progress bars, so that users understand the transition from writing down to preparing a report. A trauma-informed questionnaire can follow Callisto's existing practice of combining open-ended responses that invites users to capture the sensory and affective parts of their experience with multiple choice responses that enable users to ground those details with known facts and details.

My second recommendation addresses the question that is largely absent in reporting technologies: why do users want to report? Digitally mediated reporting interfaces can help users engage with this question in a thoughtful manner. Hirsch and Khan's adoption of "lifecourse perspective" to making sense of college students' decision-making, sexual and otherwise, is helpful here.[465] Hirsch and Khan insist that people's decisions are informed by their past experiences and future aspirations; reporting, then, is one such decision that is best understood in the context of the reporting individual's past experiences and who they want to be in the future. Yet, in reporting interfaces, questions that help users figure out why they want to report are missing. The same techniques Callisto uses can be employed to create a reporting interface that guides users in thinking through the kinds of remedies they need and desire. What

[464] Geoffrey C. Bowker and Susan Leigh Star, *Sorting Things Out: Classification and Its Consequences* ((Cambridge, Mass.: MIT Press, 2000), 27.

[465] Jennifer S. Hirsch and Shamus Khan, *Sexual Citizens: A Landmark Study of Sex, Power, and Assault on Campus* (New York, NY: WWNorton & Company, 2020), xvi.

accommodations do student-users need to complete their education? What resources have they already accessed? This "what do you want to get out of reporting?" portion can be added at the end of the questionnaire, but before submission, so that users have an opportunity to reflect on their needs and aims.

BROADEN THE PARADIGM OF OFFENSE

The theories underpinning Callisto (see Chapter 4)—the repeat offender model of sexual assault and first mover disadvantage in information escrow—are useful frameworks, but Callisto's technical operationalization misdiagnoses the core issues at stake. In this and the following recommendation, I identify two misdiagnoses and recommend how the matching algorithm function can be redesigned to enable collective complaints.

In Callisto's interpretation of the repeat offender theory, the unit of offense is the perpetrating individual. As a result, that matching algorithm seeks to identify and expose the repeat offender as a model for change. In my reading of the repeat offender theory, the repeating nature of offense is rooted not in the individual, but in the environment. What the stories about multiple sexual assaults in Greek life and athletic teams caution about is that those specific social spaces created an environment in which gendered scripts and norms permitted and facilitated violence. The focus is on the social environment, rather than the individual. This ecological framing of repeat offense can "outline different and overlapping social systems that form the environmental context for an individual, suggesting that individual experiences are shaped by these broader contexts."[466]

Broadening the unit of offense from the offender to the environment also invites a broader interpretation of what constitutes an offense. A truly survivor-centered reporting alternative would not only recognize the weight of burden placed on individual reporters, but also facilitate a move from individual grievance to collective action. It would theorize misconduct, offenses, and assaults as acts that operate in a continuum that is gender-based violence. It would bring together all those affected in this continuum—victims, survivors, employees, students, colleagues—to determine the appropriate course of action. It would move from an intake form to collective intervention. It would codify sexual harassment as a system, not a data point.

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[466] Carrie A. Moylan and McKenzie Javorka, "Widening the Lens: An Ecological Review of Campus Sexual Assault," *Trauma, Violence, & Abuse* (February 6, 2018): 2, https://doi.org/10.1177/1524838018756121.

Earlier in Chapter 4, my analysis of Callisto's reporting interface explained how the system's assumptions about sexual assault—that a report equals one discrete incident and that a report will involve a violation of consent—restricts other use-scenarios. Because this shift investigates how a particular social space created an environment ripe of sexual harm, the reporting interface can now capture the continuum of sexual violence. This means doing away with the assumption that a report equals an incident and questions that imply a narrow definition of sexual assault as a violation of consent. Instead, reporting questionnaires can use open-ended responses and a broader list of categories so that users can input a wide range of incidents. Categories of misconduct should be used strategically. They should appear *after* users have had the chance to write down what happened. When they appear, they should be accompanied by brief definitions. They should be delivered in a multiple-choice format so that users can click all those that apply to their situation. This allows administrators to get a sense of what happened without binding users to label what happened to them. Users can still input individual-specific information, if they seek to make a complaint to seek specific redress. For the complainants who want to see institutional changes, this shift in units of an offense can better collect relevant information for administrators.

Shifting the paradigm of offense from the offender to the environment offers creative opportunities to operationalize the matching feature. Instead of the offender's social media URL, the matching algorithm's object can include names of specific social spaces, such as course title or campus organization name. This will involve some experimentation on the engineers' part to codify these names into machine-legible input. The outcome will be a reporting technology that compiles documentation of how particular social spaces in a university created an environment prone to harmful dynamics, which will add precision to how administrators make sense of the scope of sexual violence on campus. This precision will better inform both individual complainant's redress and long-term policies and practices for creating a more democratic and safe campus culture.

ENABLE COLLECTIVE REPORTS

The second misdiagnosis Callisto makes about the first mover disadvantage theory is that the movers (complainants, in this case) are informed of a match *after* the documentation has already taken place. The system informs users independently after

the use that they share an offender. Callisto's operationalization of the matching feature assumes that this knowledge is sufficient to incentivize users to report.

My contention is that the knowledge alone is insufficient. Moreover, the knowledge becomes known only if more than one person decides to use the system. What survivors, frontline workers, and scholars who study sexual violence have long argued for, and what the #MeToo revelations have make clear, is that the ability to bring collective complaints makes a huge difference. The ability to bring a report together from the start, rather than *after* individual reports have been submitted, affords a number of advantages. It not only removes first mover burden, but also improves the quality of reports. The current design requires Title IX Coordinators to do the work of piecing together reports, but as discussed in Chapter 5, students who share information about harassment through the whisper network and bring complaints together are much more intentional about the process.

A truly survivor-centered reporting technology is one that facilitates end-users to make a connection with each other. For example, when a match is identified, reporting technologies can offer the option to connect the user to another who shares the match. This should be done in an anonymized and fully encrypted manner, similar to how dating applications match users until willing users decide to exchange personal information and migrate to messaging platforms to continue their interaction.[467]

When I proposed this as a possibility, my interlocutors from vendors and campus administration voiced their concerns about the possibility of getting subpoenaed and cautioned against potential misuses. The first concern amplifies my earlier point in this section that reporting technology vendors' position as an intermediary is a strategic one that allows them to deflect liability. However, as reporting technologies use more advanced communicative technologies to mediate users' help-seeking experiences, their role evolves to something beyond an intermediary.

The second concern rests on the possibility that reporting technologies can be used to give strength to faulty claims.[468] This is certainly a possibility, but it is unlikely that this likelihood will be augmented in any substantive way by reporting technologies.

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[467] Sarah Murray and Megan Sapnar Ankerson, "Lez Takes Time: Designing Lesbian Contact in Geosocial Networking Apps," *Critical Studies in Media Communication* 33, no. 1 (January 2016): 53–69, https://doi.org/10.1080/15295036.2015.1133921.

[468] This is a concern critics of reporting technologies have also voiced. See Saul Levmore and Martha C Nussbaum, "Unreported Sexual Assault," *Nebraska Law Review* 97, no. 607 (2018): 22; Heidi Liu, "When Whispers Enter the Cloud: Evaluating Technology To Prevent and Report Sexual Assault," *Harvard Journal of Law & Technology* 31, no. 2 (2018): 939–63.

It is the claim investigator’s responsibility to evaluate facts and determine whether a violation of misconduct policy has taken place. For purposes of designers, foreclosing collective complaints because of this concern is a missed opportunity to equip users with a system that can remove barriers to reporting, improve the quality of reports, and amplify the credibility of claims.

BUILD LASTING RELATIONSHIP WITH CLIENTS

Reporting technologies’ underutilization is rooted in the lack of meaningful partnership between the vendors and higher education clients. Chapter 5 illustrated how the lack of engagement between the vendors and clients following the initial roll-out created gaps in knowledge about what reporting systems do that contributed to lack of confidence and ownership about the systems’ role on campus. Vendors’ and clients’ engagement must extend beyond the initial roll-out stage, re-negotiation of the contract, or intermittent IT support.

One way to build a sustainable relationship is by creating more participatory onboarding and roll-out programs. This includes co-designing a checklist with administrators on what onboarding and roll-out involve; training administrators on how to use the systems and integrate them into safety presentations; and educating administrators on how to interpret digitally mediated reports. This last recommendation is important. My ethnographic findings about LiveSafe and Callisto exhibit how sociotechnical imaginaries associated with the timestamp create the illusion of a more credible report that reproduce troubling biases about credibility. De-mystifying such features during the onboarding phase helps administrators gain greater clarity and ownership of how they interpret and make use of digitally mediated reports.

Conclusion

Creating a safer and more just space is a collective endeavor. No single piece of technology or a change in national standard will solve a problem as horrifically mundane and insidiously persistent as sexual violence; nor will continuing to define campus safety through the spectacle of campus rape. A main lesson in this thesis is that safety is far from intuitive, universal, or fixed. Denaturalizing safety reveals how imaginaries about sexual violence and technology co-produce the conditions through which problems and solutions, like reporting technologies, are articulated and legitimated. This thesis has demonstrated that the particular vision of safety encoded in reporting technologies is

failing to reach students, their targeted audience. What visions of safety can we imagine instead?

Bibliography

"Former Secretary of State Hillary Clinton, Transcript of Remarks at DNC Women's Leadership Forum," September 19, 2014. http://www.p2016.org/clinton/clinton091914spt.html.

"Innovating in Sexual Health: An Interview with Jessica Ladd." *Rock Health.* Accessed February 17, 2019. https://rockhealth.com/using-tech-to-close-gaps-in-reproductive-health-services-an-interview-with-jessica-ladd/.

"Jessica Ladd: The Reporting System That Sexual Assault Survivors Want | TED Talk." Accessed February 17, 2019. https://www.ted.com/talks/jessica_ladd_the_reporting_system_that_sexual_assault_survivors_want?language=en.

Ahmed, Sara. "Against Students." *The New Inquiry* (blog), June 29, 2015. https://thenewinquiry.com/against-students/.

———. *The Cultural Politics of Emotion*. 2nd Revised edition edition. Edinburgh University Press, 2014.

———. "Killing Joy: Feminism and the History of Happiness." *Signs: Journal of Women in Culture and Society* 35, no. 3 (March 2010): 571–94. https://doi.org/10.1086/648513.

———. *Queer Phenomenology: Orientations, Objects, Others.* Durham: Duke University Press, 2006. http://www.loc.gov/catdir/toc/ecip0612/2006012768.html.

Ahrens, Courtney E., Janna Stansell, and Amy Jennings. "To Tell or Not to Tell: The Impact of Disclosure on Sexual Assault Survivors' Recovery." *Violence and Victims* 25, no. 5 (October 2010): 631–48. https://doi.org/10.1891/0886-6708.25.5.631.

Akrich, Madeline. "The De-Scription of Technical Objects." In *Shaping Technology/Building Society: Studies in Sociotechnical Change*, edited by Wiebe E. Bijker and John Law, 205–24. Inside Technology. Cambridge, MA: MIT Press, 1992.

Alper, Meryl. "Inclusive Sensory Ethnography: Studying New Media and Neurodiversity in Everyday Life." *New Media & Society* 20, no. 10 (October 2018): 3560–79. https://doi.org/10.1177/1461444818755394.

Anderson, Michelle J. "Campus Sexual Assault Adjudication and Resistance to Reform." *Yale Law Journal* 125 (2015): 19402005.

Argyris, Chris. "Actionable Knowledge: Design Causality in the Service of Consequential Theory." *Journal of Applied Behavioral Science* 32, no. 4 (December 1996): 309–406.

Ash, James, Ben Anderson, Rachel Gordon, and Paul Langley. "Digital Interface Design and Power: Friction, Threshold, Transition." *Environment and Planning: Society and Space*, April 13, 2018, 026377581876742. https://doi.org/10.1177/0263775818767426.

———. "Unit, Vibration, Tone: A Post-Phenomenological Method for Researching Digital Interfaces." *Cultural Geographies* 25, no. 1 (January 2018): 165–81. https://doi.org/10.1177/1474474017726556.

Ayres, Ian, and Cait Unkovic. "Information Escrows." *Mich. L. Rev.* 111 (2012): 145.

Baker, Katie J. M. "23 Students File Federal Complaints Against Columbia University For Mishandling Sexual Assault." *BuzzFeed News*. Accessed

February 22, 2019. https://www.buzzfeednews.com/article/katiejmbaker/23-students-file-federal-complaints-against-columbia-univers.
———. "Domestic Violence On Campus Is The Next Big College Controversy." *BuzzFeed News*. Accessed February 17, 2019. https://www.buzzfeednews.com/article/katiejmbaker/domestic-violence-is-the-next-big-college-civil-rights-battl.
Balsamo, Anne. *Designing Culture: The Technological Imagination at Work.* Durham: Duke University Press, 2011.
Banet-Weiser, Sarah. *Empowered: Popular Feminism and Popular Misogyny*. Durham: Duke University Press, 2018. www.dukeupress.edu/empowered.
Barad, Karen. "Posthumanist Performativity: Toward an Understanding of How Matter Comes to Matter." *Signs: Journal of Women in Culture and Society* 28, no. 3 (March 2003): 801–31. https://doi.org/10.1086/345321.
Bardzell, Shaowen, and Jeffrey Bardzell. "Towards a Feminist HCI Methodology: Social Science, Feminism, and HCI." In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, 675–84. ACM, 2011. http://dl.acm.org/citation.cfm?id=1979041.
———. "Feminist HCI: Taking Stock and Outlining an Agenda for Design." In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems,* 1301–10. ACM, 2010. http://dl.acm.org/citation.cfm?id=1753521.
Beaton, Brian. "Safety as Net Work*." MediaTropes* V, no. 1 (2015): 105–24.
Beer, David. "How Should We Do the History of Big Data?" Big Data & Society 3, no. 1 (May 4, 2016). https://doi.org/10.1177/2053951716646135.
———. *Metric Power*. 1st ed. 2016 edition. Palgrave Macmillan, 2016.
———. "The Data Analytics Industry and the Promises of Real-Time Knowing: Perpetuating and Deploying a Rationality of Speed." *Journal of Cultural Economy* 10, no. 1 (January 2, 2017): 21–33. https://doi.org/10.1080/17530350.2016.1230771.
Benjamin, Ruha. *Race after Technology: Abolitionist Tools for the New Jim Code.* Medford, MA: Polity, 2019.
Berlant, Lauren. *Cruel Optimism*. Durham: Duke University Press, 2011.
Bernstein, Robin. *Racial Innocence: Performing American Childhood from Slavery to Civil Rights.* New York: NYU Press, 2011.
Beyette, Beverly. "Campus Crime Crusade: Howard and Connie Clery Lost Their Daughter to a Crazed Thief; Now They're Angry and Fighting Back," August 10, 1989. http://articles.latimes.com/1989-08-10/news/vw-301_1_campus-crime-statistics.
Bivens, Rena, and Amy Adele Hasinoff. "Rape: Is There an App for That? An Empirical Analysis of the Features of Anti-Rape Apps*." Information, Communication & Society,* April 11, 2017, 1–18. https://doi.org/10.1080/1369118X.2017.1309444.
Bivens, Rena, and Anna Shah Hoque. "Programming Sex, Gender, and Sexuality: Infrastructural Failures in the 'Feminist' Dating App Bumble." *Canadian Journal of Communication* 43 (2018): 441–59.
Blee, Kathleen M. *Women of the Klan: Racism and Gender in the 1920s*. New ed. Berkeley, CA ; London: University of California Press, 2009.
Bowker, Geoffrey C and Susan L. Star. *Sorting Things Out: Classification and Its Consequences.* New Ed edition. Cambridge, Mass.: MIT Press, 2000.

Bray, Francesca. “Gender and Technology.” *Annual Review of Anthropology* 36, no. 1 (September 2007): 37–53. https://doi.org/10.1146/annurev.anthro.36.081406.094328.
Brayne, Sarah, and Angèle Christin. “Technologies of Crime Prediction: The Reception of Algorithms in Policing and Criminal Courts.” *Social Problems*, March 5, 2020, spaa004. https://doi.org/10.1093/socpro/spaa004.
Brayne, Sarah. “Big Data Surveillance: The Case of Policing.” *American Sociological Review* 82, no. 5 (2017): 977–1008.
Breunlin, Erica. “University of Tennessee Debuts New Campus Safety App.” *KnoxNews,* December 16, 2019. https://www.knoxnews.com/story/news/education/2018/11/06/utk-safety-app-livesafe-campus-security/1892130002/.
Brison, Susan J. *Aftermath: Violence and the Remaking of a Self.* Princeton, N.J.: Princeton University Press, 2003.
Brodsky, Alexandra. “Against Taking Rape ‘Seriously’: The Case Against Mandatory Referral Laws for Campus Gender Violence.” *Harvard Civil Rights* 53 (2018): 131–66.
Brownmiller, Susan. *Against Our Will: Men, Women, and Rape.* London: Secker & Warburg, 1975.
Bucher, Taina, and Anne Helmond. “The Affordances of Social Media Platforms.” Edited by J. Burgess, T. Poell, and A. Marwick. *SAGE Handbook of Social Media.* London: Sage, 2017. http://www.annehelmond.nl/wordpress/wp-content/uploads/2016/07/BucherHelmond_SocialMediaAffordances-preprint.pdf.
Bucher, Taina. *If...Then: Algorithmic Power and Politics*. Oxford Studies in Digital Politics. New York: Oxford University Press, 2018.
Bumiller, Kristin. *In an Abusive State: How Neoliberalism Appropriated the Feminist Movement against Sexual Violence.* Durham: Duke University Press, 2008.
Buscatto, Marie. “Doing Ethnography: Ways and Reasons.” In *The SAGE Handbook of Qualitative Data Collection*, edited by Uwe Flick, 327–43. 1 Oliver’s Yard, 55 City Road London EC1Y 1SP: SAGE Publications Ltd, 2018. https://doi.org/10.4135/9781526416070.
Byrne, David, and Charles C. Ragin. *The SAGE Handbook of Case-Based Methods*. SAGE Publications, 2009.
Callisto. “Privacy Policy.” Accessed February 17, 2019. https://pomona.callistocampus.org/about/our-policies/#privacy-policy.
Cantalupo, Nancy Chi. “For the Title IX Civil Rights Movement: Congratulations and Cautions.” Accessed February 13, 2019. https://www.yalelawjournal.org/forum/for-the-title-ix-civil-rights-movement-congratulations-and-cautions.
———. “Institution-Specific Victimization Surveys: Addressing Legal and Practical Disincentives to Gender-Based Violence Reporting on College Campuses.” *Trauma, Violence, & Abuse* 15, no. 3 (July 2014): 227–41. https://doi.org/10.1177/1524838014521323.
Caplan-Bricker, Nora. “How Title IX Became Our Best Tool Against Sexual Harassment.” *The New Republic*, June 22, 2012. https://newrepublic.com/article/104237/how-title-ix-became-our-best-tool-against-sexual-harassment.

Celis, William. “Date Rape And a List At Brown.” *The New York Times*, November 18, 1990. http://www.nytimes.com/1990/11/18/us/date-rape-and-a-list-at-brown.html.

Cheney-Lippold, John. *We Are Data: Algorithms and the Making of Our Digital Selves.* New York, NY: New York University Press, 2017.

Chicago Tribune. “Northwestern Student Sues Prof. Laura Kipnis,” May 17, 2017. https://www.chicagotribune.com/news/local/breaking/ct-northwestern-student-sues-professor-book-20170517-story.html.

Chouliaraki, Lilie, and Norman Fairclough. “Critical Discourse Analysis in Organizational Studies: Towards an Integrationist Methodology: Critical Discourse Analysis in Organizational Studies.” *Journal of Management Studies* 47, no. 6 (September 2010): 1213–18. https://doi.org/10.1111/j.1467-6486.2009.00883.x.

Christin, Angèle. “What Data Can Do: A Typology of Mechanisms.” *International Journal of Communication* 14 (2020): 1115–34.

Clark, Annie E. “Why I Am Filing an Office for Civil Rights Complaint and Clery Act Complaint Against UNC-Chapel Hill.” *Huffington Post* (blog), January 16, 2013. https://www.huffingtonpost.com/annie-e-clark/why-i-am-filing-an-office_b_2489641.html.

Clifford, James, George E. Marcus, and School of American Research. *Writing Culture: The Poetics and Politics of Ethnography.* School of American Research Advanced Seminar Series. Berkeley ; London: University of California Press, 1986.

Cockburn, Cynthia, and Susan Ormrod. *Gender and Technology in the Making.* SAGE Publications Ltd, 1993.

Coombs, Joseph. “LiveSafe: Meet the Company Working to Bring Public Safety to Your Smartphone.” *Washington Business Journal*, September 25, 2017. https://www.bizjournals.com/washington/news/2017/09/25/livesafe-meet-the-company-working-to-bring-public.html.

Cottom, Tressie McMillan. *Thick: And Other Essays.* New York: The New Press, 2019.

Craft, Wendy. “Safety Resources at Your Fingertips with New ASU LiveSafe App.” *ASU Now,* August 20, 2014. https://asunow.asu.edu/content/safety-resources-your-fingertips-new-asu-livesafe-app.

Cramer, Henriette, Nicander Kemper, Alia Amin, Bob Wielinga, and Vanessa Evers. “‘Give Me a Hug’: The Effects of Touch and Autonomy on People’s Responses to Embodied Social Agents.” *Computer Animation and Virtual Worlds* 20, no. 2–3 (2009): 437–45. https://doi.org/10.1002/cav.317.

Culp-Ressler, Tara. “Profit And Peril In The Anti-Rape Industry.” *ThinkProgress,* September 10, 2014. https://thinkprogress.org/profit-and-peril-in-the-anti-rape-industry-e497c017b0ec/.

Cumiskey, Kathleen M., and Kendra Brewster. “Mobile Phones or Pepper Spray?: Imagined Mobile Intimacy as a Weapon of Self-Defense for Women.” *Feminist Media Studies* 12, no. 4 (December 2012): 590–99. https://doi.org/10.1080/14680777.2012.741893.

Dane, Erik, and Michael G. Pratt. “Conceptualizing and Measuring Intuition: A Review of Recent Trends.” In *International Review of Industrial and Organizational Psychology,* edited by Gerard P. Hodgkinson and J. Kevin Ford, 1–40. Chichester, West Sussex, UK: John Wiley & Sons, Ltd, 2012. https://doi.org/10.1002/9780470745267.ch1.

Davis, Angela Y. *Women, Race & Class*. 1st Vintage Books edition. New York: Vintage Books, 1983.
Davis, Jenny L. *How Artifacts Afford: The Power and Politics of Everyday Things.* MIT Press, 2020. https://mitpress.mit.edu/books/how-artifacts-afford.
Denzin, Norman K., and Yvonna S. Lincoln. *The Landscape of Qualitative Research: Theories and Issues.* Thousand Oaks, Calif. ; London: Sage Publications, 1998.
Department of Education. "Federal Register, Volume 79 Issue 202 (Monday, October 20, 2014)." Accessed February 23, 2019. https://www.govinfo.gov/content/pkg/FR-2014-10-20/html/2014-24284.htm.
———. "Dear Colleague Letter." Policy Guidance, April 4, 2011. https://www2.ed.gov/about/offices/list/ocr/letters/colleague-201104.html.
Diaz Ruiz, Carlos, and Maria Holmlund. "Actionable Marketing Knowledge: A Close Reading of Representation, Knowledge, and Action in Market Research." *Industrial Marketing Management* 66 (October 2017): 172–80. https://doi.org/10.1016/j.indmarman.2017.08.005.
Dinner, Deborah. "A Firebrand Flickers." *Legal Affairs*, April 2006. http://www.legalaffairs.org/issues/March-April-2006/review_Dinner_marapr06.msp.
Donegan, Moira. "I Started the Media Men List." The Cut, January 10, 2018. https://www.thecut.com/2018/01/moira-donegan-i-started-the-media-men-list.html.
Doyle, Jennifer. *Campus Sex, Campus Security*. South Pasadena, CA: MIT Press, 2015.
Drucker, Johanna. *Graphesis: Visual Forms of Knowledge Production*. Cambridge MA: Harvard University Press, 2014.
Dworkin, Andrea. "I Want a Twenty-Four-Hour Truce During Which There Is No Rape." *No Status Quo,* 1984. http://www.nostatusquo.com/ACLU/dworkin/WarZoneChaptIIIE.html.
Ed Act Now. "Official Asks to the Department of Education." Tumblr. Accessed February 22, 2019. http://edactnow.tumblr.com/post/56350266714/official-asks-to-the-department-of-education.
Education Dive. "10 Mobile Apps Making Campuses Safer." Accessed February 25, 2019. https://www.educationdive.com/news/10-mobile-apps-making-campuses-safer/241575/.
Ellcessor, Elizabeth. "Blue-Light Emergency Phones on Campus: Media Infrastructures of Feeling*." International Journal of Cultural Studies* 22, no. 4 (July 2019): 499–518. https://doi.org/10.1177/1367877918820336.
Emerson, Robert M. *Writing Ethnographic Fieldnotes*. 2nd ed. Chicago Guides to Writing, Editing, and Publishing. Chicago; London : University of Chicago Press, 2011.
Englander, Elizabeth, Meghan McCoy, and Sherry Sherman. "Sexual Assault Information on University Websites." *Violence and Gender* 3, no. 1 (March 2016): 64–70. https://doi.org/10.1089/vio.2015.0025.
Ensmenger, Nathan. "Is Chess the Drosophila of Artificial Intelligence? A Social History of an Algorithm." *Social Studies of Science* 42, no. 1 (February 2012): 5–30. https://doi.org/10.1177/0306312711424596.
Epifano, Angie. "An Account of Sexual Assault at Amherst College." *The Amherst Student,* October 17, 2012.

https://amherststudent.amherst.edu/article/2012/10/17/account-sexual-assault-amherst-college.html.
Erdely, Sabrina Rubin. "A Rape on Campus: A Brutal Assault and Struggle for Justice at UVA | …." *Rolling Stone,* November 19, 2014. http://archive.is/2I04n.
Espeland, Wendy Nelson, and Mitchell L. Stevens. "A Sociology of Quantification." *European Journal of Sociology* 49, no. 3 (December 2008): 401–36. https://doi.org/10.1017/S0003975609000150.
Eubanks, Virginia. *Automating Inequality: How High-Tech Tools Profile, Police, and Punish the Poor.* St. Martin's Press, 2018.
Fairclough, Norman. *Critical Discourse Analysis: The Critical Study of Language.* Second edition. Ebook Central. New York: Routledge, 2013.
Fanon, Frantz. *Black Skin, White Masks.*. London: Pluto, 2008.
Fantz, Ashley. "Outrage Over Six-Month Sentence in Stanford Rape Case." *CNN.* Accessed February 22, 2019. https://www.cnn.com/2016/06/06/us/sexual-assault-brock-turner-stanford/index.html.
Faste, Haakon. "Intuition in Design: Reflections on the Iterative Aesthetics of Form." In Proceedings of the 2017 *CHI Conference on Human Factors in Computing Systems,* 3403–13. Denver Colorado USA: ACM, 2017. https://doi.org/10.1145/3025453.3025534.
Fernandez, Lisa, and Nanette Miranda. "Ex-Stanford Swimmer Pleads Not Guilty in Rape Case." *NBC Bay Area*. Accessed February 22, 2019. http://www.nbcbayarea.com/news/local/Ex-Stanford-Swimmer-Brock-Turner-Makes-1st-Court-Appearance-in-Rape-Case-290528481.html.
Fischel, Joseph J. *Sex and Harm in the Age of Consent.* Minneapolis: University of Minnesota Press, 2016.
———. *Screw Consent: A Better Politics of Sexual Justice.* University of California Press, 2019.
Fisher, Bonnie S, Francis T Cullen, and Michael G Turner. "The Sexual Victimization of College Women." US Department of Justice, Office of Justice Programs, National Institute of Justice, December 2000. https://www.ncjrs.gov/pdffiles1/nij/182369.pdf.
Flick, Uwe. "Triangulation in Data Collection." In *The SAGE Handbook of Qualitative Data Collection*, edited by Uwe Flick, 527–44. London: SAGE Publications Ltd, 2018. https://doi.org/10.4135/9781526416070.
Flyvbjerg, Bent. "Five Misunderstandings About Case-Study Research." *Qualitative Inquiry* 12, no. 2 (April 2006): 219–45. https://doi.org/10.1177/1077800405284363.
Freedman, Estelle B. *Redefining Rape*. Harvard University Press, 2013.
Freeman, Jo. "How Sex Got into Title VII: Persistent Opportunism as a Maker of Public Policy." *Law and Inequality:* A Journal of Theory and Practice 9 (1991 1990): 163.
Fricker, Miranda. *Epistemic Injustice: Power and the Ethics of Knowing*. Oxford University Press, 2007. https://doi.org/10.1093/acprof:oso/9780198237907.001.0001.
Gattuso, Reina. "Seven Reasons Consent Apps Are A Terrible Idea." *Feministing,* May 15, 2018. http://feministing.com/2018/05/16/six-reasons-consent-apps-are-a-terrible-idea/.

Gersen, Jeannie Suk. "The Trouble with Teaching Rape Law," *The New Yorker,* December 15, 2014. https://www.newyorker.com/news/news-desk/trouble-teaching-rape-law.
Gordon, Claire. "Title IX Complaint Against Yale Has a Case." *Huffington Post*, April 1, 2011. https://www.huffingtonpost.com/claire-gordon/yale-sexual-harassment-title-ix_b_843273.html.
Grigoriadis, Vanessa. "The Revolution Against Campus Sexual Assault." *The Cut,* September 21, 2014. https://www.thecut.com/2014/09/emma-sulkowicz-campus-sexual-assault-activism.html.
———. *Blurred Lines: Rethinking Sex, Power, and Consent on Campus*. Houghton Mifflin Harcourt, 2017.
Guzman, Andrea L, and Seth C Lewis. "Artificial Intelligence and Communication: A Human–Machine Communication Research Agenda." *New Media & Society*, July 4, 2019, 1–17. https://doi.org/10.1177/1461444819858691.
Hacking, Ian. *The Social Construction of What?* Cambridge, MA; London: Harvard University Press, 1999.
Hanhardt, Christina. *Safe Space: Gay Neighborhood History and the Politics of Violene*. Durham: Duke University Press, 2013.
Haraway, Donna. "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective." *Feminist Studies* 14, no. 3 (1988): 575. https://doi.org/10.2307/3178066.
Harris, Jessica C., and Chris Linder. *Intersections of Identity and Sexual Violence on Campus: Centering Minoritized Students' Experiences*. Stylus Publishing, LLC, 2017.
Hartman, Saidiya. "Venus in Two Acts." *Small Axe* 26, no. June 2008 (2008): 1–14.
Hechinger, John. "Amherst Overhauls Sex-Assault Reporting After Outcry." *Bloomberg,* October 25, 2012. https://www.bloomberg.com/news/articles/2012-10-25/amherts-overhauls-sex-assault-reporting-after-outcry.
Henry, Diane. "Yale Faculty Members Charged With Sexual Harassment in Suit." *The New York Times*, August 22, 1977, sec. Archives. https://www.nytimes.com/1977/08/22/archives/yale-faculty-members-charged-with-sexual-harassment-in-suit.html.
Herman, Judith Lewis. *Trauma and Recovery: The Aftermath of Violence--From Domestic Abuse to Political Terror.* New York: Basic Books, 1992.
Hess, Amanda. "This New Consent App Is Even Scarier Than Talking About Sex." *Slate Magazine*, September 29, 2014. https://slate.com/human-interest/2014/09/good2go-a-new-app-for-consenting-to-sex.html.
Hicks, Marie. "Hacking the Cis-Tem." *IEEE Annals of the History of Computing* 41, no. 1 (January 1, 2019): 20–33. https://doi.org/10.1109/MAHC.2019.2897667.
———. *Programmed Inequality: How Britain Discarded Women Technologists and Lost Its Edge in Computing.* MIT Press, 2017.
Hirsch, Jennifer S., and Shamus Khan. *Sexual Citizens: A Landmark Study of Sex, Power, and Assault on Campus*. New York: WW Norton & Company, 2020.
Hochschild, Arlie Russell. *The Managed Heart: Commercialization of Human Feeling*. Berkeley, CA: University of California Press, 2012. http://ebookcentral.proquest.com/lib/oxford/detail.action?docID=870020.

Holmes, Aaron. “Columbia Settles Nungesser’s Title IX Lawsuit.” *Columbia Daily Spectator*, July 13, 2017. columbiaspectator.com/main/2017/07/13/columbia-settles-nungesser-title-ix-lawsuit/.

Hopper, Jim. “How Reliable Are the Memories of Sexual Assault Victims?” *Scientific American Blog Network*. Accessed February 5, 2019. https://blogs.scientificamerican.com/observations/how-reliable-are-the-memories-of-sexual-assault-victims/.

Huffington, Christina. “Yale Students File Title IX Suit Against University.” *The Yale Herald,* April 3, 2011. https://web.archive.org/web/20110403015738/https://yaleherald.com/topstory/breaking-news-yale-students-file-title-ix-suit-against-school/.

Ingram, Amy, Xiaoyu Wang, and William Ribarsky. “Towards the Establishment of a Framework for Intuitive Multi-Touch Interaction Design.” In *Proceedings of the International Working Conference on Advanced Visual Interfaces* - AVI ’12, 66. Capri Island, Italy: ACM Press, 2012. https://doi.org/10.1145/2254556.2254571.

Introna, Lucas D. “Towards a Post-Human Intra-Actional Account of Sociomaterial Agency (and Morality).” In *The Moral Status of Technical Artefacts*, 31–53. Springer, 2014.

Irani, Lilly. *Chasing Innovation: Making Entrepreneurial Citizens in Modern India. Princeton University Press*, 2019.

Israel, Johann H., Jorn Hurtienne, Anna E. Pohlmeyer, Carsten Mohs, Martin C. Kindsmuller, and Anja Naumann. “On Intuitive Use, Physicality and Tangible User Interfaces.” *International Journal of Arts and Technology* 2, no. 4 (2009): 348. https://doi.org/10.1504/IJART.2009.029240.

Jackson, Stevi. “Women’s Studies, Gender Studies and Feminism.” *Discover Society,* March 1, 2016. https://discoversociety.org/2016/03/01/womens-studies-gender-studies-and-feminism/.

Jasanoff, Sheila, and Sang-Hyun Kim. *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power.* University of Chicago Press, 2015. https://doi.org/10.7208/chicago/9780226276663.001.0001.

Johnson, Khari. “Botler.Ai Launches Sexual Harassment Detection Bot for U.S. and Canada.” *VentureBeat* (blog), December 6, 2017. https://venturebeat.com/2017/12/06/botler-ai-launches-sexual-harassment-detection-bot-for-u-s-and-canada/.

Johnson, Rebecca. “Campus Sexual Assault: Annie E. Clark and Andrea Pino Are Fighting Back—And Shaping the National Debate.” *Vogue*. Accessed February 22, 2019. https://www.vogue.com/article/college-sexual-assault-harassment-annie-e-clark-andrea-pino.

Jones, Jaleesa. “4 Free Apps to Help College Women Feel Safer.” *USA Today.* Accessed February 17, 2019. http://www.usatoday.com/story/college/2014/06/01/4-free-apps-to-help-college-women-feel-safer/37391545/.

Jones, Karen. “The Politics of Credibility.” In *A Mind of One’s Own: Feminist Essays on Reason and Objectivity,* 2nd edition., 154–76, 2002.

Joseph, George, and Jon Swaine. “Behind Columbia’s ‘Rape Lists’: ‘When Existing Systems Fail, What Then?’” *The Guardian,* June 26, 2014, sec. Education. https://www.theguardian.com/education/2014/jun/26/columbia-university-students-rape-list-mishandle-sexual-assault.

Justia Law. "Alexander v. Yale University, 459 F. Supp. 1 (D. Conn. 1977)." Accessed February 23, 2019. https://law.justia.com/cases/federal/district-courts/FSupp/459/1/1392608/.

Kaminer, Ariel. "Accusers and the Accused, Crossing Paths at Columbia University." *The New York Times*, January 10, 2018, sec. New York. https://www.nytimes.com/2014/12/22/nyregion/accusers-and-the-accused-crossing-paths-at-columbia.html.

Katz, Marshall & Banks, LLP. "KMB Clients File Title IX Complaint Against University of Mary Washington," May 7, 2015. https://www.kmblegal.com/news/kmb-clients-file-title-ix-complaint-against-university-mary-washington.

Kelly, Liz. *Surviving Sexual Violence. Feminist Perspectives*. Cambridge: Polity, 1988.

Khan, Shamus, Jennifer Hirsch, Alexander Wamboldt, and Claude Mellins. "'I Didn't Want To Be "That Girl"': The Social Risks of Labeling, Telling, and Reporting Sexual Assault." *Sociological Science* 5 (2018): 432–60. https://doi.org/10.15195/v5.a19.

Kingkade, Tyler. "1-Day Suspension For Yale Sex Assault Attempt*." Huffington Post*, August 23, 2013. https://www.huffingtonpost.com/2013/08/23/yale-sexual-assault-punishment_n_3786885.html.

———. "Complaint Alleges UC-Berkeley Allowed Serial Rapists To Stay On Campus." *Huffington Post,* February 26, 2014. https://www.huffingtonpost.com/2014/02/26/uc-berkeley-rape-students-complaint_n_4855816.html.

———. "Harvard Faces Federal Investigation For Mishandling Sexual Assault." *Huffington Post,* April 28, 2014. https://www.huffingtonpost.com/2014/04/28/harvard-investigation-sexual-assault_n_5225901.html.

———. "The Woman Behind #SurvivorPrivilege Was Kicked Out Of School After Being Raped." *Huffington Post,* June 12, 2014. https://www.huffingtonpost.com/2014/06/12/survivor-privilege-wagatwe-wanjuki_n_5489170.html.

Kipnis, Laura. "Eyewitness to a Title IX Witch Trial." *The Chronicle of Higher Education,* April 2, 2017. https://www.chronicle.com/article/Eyewitness-to-a-Title-IX-Witch/239634.

Kline, Ronald, and Trevor Pinch. "Users as Agents of Technological Change: The Social Construction of the Automobile in the Rural United States." *Technology and Culture* 37, no. 4 (October 1996): 763. https://doi.org/10.2307/3107097.

Koss, Mary, Christine Gidycz, and Nadine Wisniewski. "The Scope of Rape: Incidence and Prevalence of Sexual Aggression and Victimization in a National Sample of Higher Education Students." Journal of Consulting and Clinical Psychology 55, no. 2 (1987): 162.

Krebs, Christopher, Christine Lindquist, Marcus Berzofsky, Bonnie Shook-Sa, Kimberly Peterson, Michael Planty, Lynn Langton, and Jessica Stroop. "Campus Climate Survey Validation Study Final Technical Report," n.d., 218.

Krebs, Christopher, Christine Lindquist, Tara Warner, Bonnie Fisher, and Sandra Martin. "Campus Sexual Assault (CSA) Study, Final Report," October 2007. https://www.ncjrs.gov/App/Publications/abstract.aspx?ID=243011.

Kutner, Max. “Accused Student in Mattress Protest Sues Columbia.” *Newsweek,* April 28, 2015. https://www.newsweek.com/anti-mattress-protest-paul-nungessers-lawsuit-against-columbia-university-326319.

Kvale, Steinar. *InterViews: An Introduction to Qualitative Research Interviewing.* Thousand Oaks ; London: Sage, 1996.

Ladd, Jessica. The Reporting System That Sexual Assault Survivors Want. Accessed February 3, 2019. https://www.ted.com/talks/jessica_ladd_the_reporting_system_that_sexual_assault_survivors_want?language=en.

Lakoff, George. *Metaphors We Live By.* Chicago; London: University of Chicago Press, 2003.

Lamb, Katherine. “U. Mishandled Sexual Assault Case, Victim Says.” *Brown Daily Herald,* April 23, 2014. http://www.browndailyherald.com/2014/04/23/u-mishandled-sexual-assault-case-victim-says/.

Latour, Bruno. “On Technical Mediation.” *Common Knowledge* 3, no. 2 (1994): 29–64.

Levine, Judith, and Erica Meiners. *The Feminist and The Sex Offender: Confronting Sexual Harm, Ending State Violence*. New York: Verso, 2020.

Levmore, Saul, and Martha C Nussbaum. “Unreported Sexual Assault.” *Nebraska Law Review* 97, no. 607 (2018): 22.

Lichterman, Paul, and Kushan Dasgupta. “From Culture to Claimsmaking.” *Sociological Theory* 38, no. 3 (September 2020): 236–62. https://doi.org/10.1177/0735275120947133.

Lierman, Kyle. “It’s On Us, a Growing Movement to End Campus Sexual Assault.” whitehouse.gov, September 24, 2014. https://obamawhitehouse.archives.gov/blog/2014/09/24/its-us-growing-movement-end-campus-sexual-assault.

Light, Ben, Jean Burgess, and Stefanie Duguay. “The Walkthrough Method: An Approach to the Study of Apps.” *New Media & Society* (2016), 1–20. https://doi.org/10.1177/1461444816675438.

Lindtner, Silvia, Shaowen Bardzell, and Jeffrey Bardzell. “Reconstituting the Utopian Vision of Making: HCI After Technosolutionism.” *In Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems*, 1390–1402. San Jose California USA: ACM, 2016. https://doi.org/10.1145/2858036.2858506.

Liu, Heidi. “When Whispers Enter the Cloud: Evaluating Technology To Prevent and Report Sexual Assault.” *Harvard Journal of Law & Technology* 31, no. 2 (2018): 939–63.

LiveSafe. “Back to School: More than 100 Colleges and Universities Use LiveSafe,” Jaunary 2017. https://www.livesafemobile.com/safetalk/back-to-school-2017/.

Lorber, Judith. *Paradoxes of Gender*. New Haven; London: Yale University Press, 1994.

Lorde, Audre. *Sister Outsider: Essays and Speeches*. Crossing Press Feminist Series. Freedom, CA: Crossing Press, 1984.

MacKinnon, Catharine *A. Sexual Harassment of Working Women: A Case of Sex Discrimination.* New Haven ; London: Yale University Press, 1979.

Markham, Annette. “Fabrication as Ethical Practice: Qualitative Inquiry in Ambiguous Internet Contexts.*” Information, Communication & Society* 15, no. 3 (April 2012): 334–53. https://doi.org/10.1080/1369118X.2011.641993.

Massumi, Brian. *The Power at the End of the Economy*. Durham: Duke University Press, 2015.
Matthews, Natalie. "This Jewelry Comes With a Panic Button to Get You Out of Bad Dates." *ELLE,* May 5, 2014. https://www.elle.com/news/culture/guardian-angel-app-jewelry.
McKinney, Cait. *Information Activism: A Queer History of Lesbian Media Technologies*. Durham: Duke University Press, 2020.
Merry, Sally Engle. *The Seductions of Quantification: Measuring Human Rights, Gender Violence, and Sex Trafficking.* Chicago Series in Law and Society. Chicago: The University of Chicago Press, 2016.
Messener, Michael. "Reviewed Work. Review of A Place on the Team: The Triumph and Tragey of Title IX by Welch Suggs." *Academe,* 92, no. 1, January 2006. https://ezproxy-prd.bodleian.ox.ac.uk:4228/stable/40252898.
Miller, Michael. "All-American Swimmer Found Guilty of Sexually Assaulting Unconscious Woman on Stanford Campus." The Washington Post. Accessed February 22, 2019. https://www.washingtonpost.com/news/morning-mix/wp/2016/03/31/all-american-swimmer-found-guilty-of-sexually-assaulting-unconscious-woman-on-stanford-campus/?utm_term=.b824749ce574.
Mills, Albert, Gabrielle Durepos, and Elden Wiebe. "Critical Sensemaking." In *Encyclopedia of Case Study Research*. 2455 Teller Road, Thousand Oaks California 91320 United States: SAGE Publications, Inc., 2010. https://doi.org/10.4135/9781412957397.
Mol, Annemarie. *The Logic of Care: Health and the Problem of Patient Choice*. London ; New York: Routledge, 2008.
Morris, Jeremy Wade, and Sarah Murray, eds. *Appified: Culture in the Age of Apps.* Ann Arbor, MI: University of Michigan Press, 2018.
Moylan, Carrie A., and McKenzie Javorka. "Widening the Lens: An Ecological Review of Campus Sexual Assault." *Trauma, Violence, & Abuse*, February 6, 2018, 1–14. https://doi.org/10.1177/1524838018756121.
Muhammad, Khalil Gibran. *The Condemnation of Blackness: Race, Crime, and the Making of Modern Urban America.* Cambridge, MA; London: Harvard University Press, 2010.
Murphy, Katy. "San Jose Colleges Under Federal Investigation for Campus Sexual Assault Response." *The Mercury News* (blog), December 19, 2014. https://www.mercurynews.com/2014/12/19/san-jose-colleges-under-federal-investigation-for-campus-sexual-assault-response/.
Murray, Sarah, and Megan Sapnar Ankerson. "Lez Takes Time: Designing Lesbian Contact in Geosocial Networking Apps." *Critical Studies in Media Communication* 33, no. 1 (January 2016): 53–69. https://doi.org/10.1080/15295036.2015.1133921.
Nagy, Peter, and Gina Neff. "Imagined Affordance: Reconstructing a Keyword for Communication Theory." *Social Media + Society* 1, no. 2 (2015): 1–9.
Nakamura, Lisa. "Indigenous Circuits: Navajo Women and the Racialization of Early Electronic Manufacture." *American Quarterly* 66, no. 4 (2014): 919–41. https://doi.org/10.1353/aq.2014.0070.
Naples, Nancy A. "Deconstructing and Locating Survivor Discourse: Dynamics of Narrative, Empowerment, and Resistance for Survivors of Childhood Sexual Abuse." *Signs: Journal of Women in Culture and Society* 28, no. 4 (June 2003): 1151–85. https://doi.org/10.1086/368323.

Neff, Gina, and Peter Nagy. "Talking to Bots: Symbiotic Agency and the Case of Tay." *International Journal of Communication* 10 (2016): 17.
Nesbitt, Sarah, and Sage Carson. "The Cost of Reporting: Perpetrator Retaliation, Institutional Betrayal, and Student Survivor Pushout." *Know Your IX*, March 2021. https://www.knowyourix.org/thecostofreporting/.
New, Jake. "Pressure on Colleges to Deal with Sexual Assault Leads to Growing Cottage Industry." *Inside Higher Ed*, August 27, 2014. https://www.insidehighered.com/news/2014/08/27/pressure-colleges-deal-sexual-assault-leads-growing-cottage-industry.
Nissenbaum, Helen. "Privacy as Contextual Integrity." *Washington Law Review* 79 (2004): 119–58.
Noble, Safiya Umoja. *Algorithms of Oppression: How Search Engines Reinforce Racism.* New York: University Press, 2018.
Norman, Donald A. "Affordance, Conventions, and Design." *Interactions*, June 1999.
Nuttall, Sarah. "Girl Bodies." *Social Text* 22, no. 1 (2004): 17–33.
Obermeyer, Ziad, Brian Powers, Christine Vogeli, and Sendhil Mullainathan. "Dissecting Racial Bias in an Algorithm Used to Manage the Health of Populations." *Science* 366, no. 6464 (October 25, 2019): 447–53. https://doi.org/10.1126/science.aax2342.
Office of Civil Rights, Department of Education. "Sexual Harassment Guidance 1997." Policy Guidance, September 26, 2018. https://www2.ed.gov/about/offices/list/ocr/docs/sexhar01.html.
Olivarius, Anne. "Title IX: Taking Yale to Court." *The New Journal,* April 18, 2011. http://www.thenewjournalatyale.com/2011/04/title-ix-taking-yale-to-court/.
Olson, Parmy. "This Chatbot Is Helping People Track Harassment At Work." Forbes. Accessed February 25, 2019. https://www.forbes.com/sites/parmyolson/2018/03/02/chatbot-spot-sexual-harassment-ai/.
Orem, Sarah, and Neil Simpkins. "Weepy Rhetoric, Trigger Warnings, and the Work of Making Mental Illness Visible in the Writing Classroom | Enculturation." *Enculturation,* December 16, 2015. http://enculturation.net/weepy-rhetoric.
Perrin, Liese M. "Resisting Reproduction: Reconsidering Slave Contraception in the Old South." *Journal of American Studies* 35, no. 02 (August 2001). https://doi.org/10.1017/S0021875801006612.
Picard, Rosalind W. *Affective Computing*. Cambridge, Mass. ; London: MIT Press, 1997.
Plotnick, Rachel. "Force, Flatness, and Touch Without Feeling: Thinking Historically About Haptics and Buttons." *New Media & Society* 19, no. 10 (October 2017): 1632–52. https://doi.org/10.1177/1461444817717510.
Porter, Theodore M. *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life*. Princeton University Press, 1995.
Press, Associated. "'Jackie' Testifies: Rolling Stone Story Was 'What I Believed to Be True at the Time.'" *The Guardian*, October 24, 2016, sec. Media. https://www.theguardian.com/media/2016/oct/24/rolling-stone-defamation-trial-uva-jackie-testifies.
Quinlan, Andrea. "The Rape Kit's Promise: Techno-Optimism in the Fight Against the Backlog." *Science as Culture*, November 21, 2020, 1–25. https://doi.org/10.1080/09505431.2020.1846696.

Raskin, Jef. “Viewpoint: Intuitive Equals Familiar.” *Communications of the ACM*, September 1994.

Ravindranath, Mohana. “Reporting Crime to the Nearest Police Department, from a Smartphone App.” *Washington Post*, September 28, 2012. https://www.washingtonpost.com/business/on-small-business/reporting-crime-though-a-smartphone-app/2012/09/27/4285f2ee-07fc-11e2-858a-5311df86ab04_story.html.

Rees, Gethin, and Deborah White. “Vindictive but Vulnerable: Paradoxical Representations of Women as Demonstrated in Internet Discourse Surrounding an Anti-Rape Technology.” *Women’s Studies International Forum* 35, no. 6 (November 2012): 426–31. https://doi.org/10.1016/j.wsif.2012.09.004.

Reynolds, Celene. “The Mobilization of Title IX across U.S. Colleges and Universities, 1994-2014.” *Social Problems* 66, no. 2 (May 1, 2019): 245–73. https://doi.org/10.1093/socpro/spy005.

Ribes, David, Andrew S Hoffman, Steven C Slota, and Geoffrey C Bowker. “The Logic of Domains.” *Social Studies of Science* 49, no. 3 (June 2019): 281–309. https://doi.org/10.1177/0306312719849709.

Richer, Alanna Durkin. “‘Jackie’ Says She Felt Pressure to Be in Rolling Stone Story.*” AP News*, October 24, 2016. https://apnews.com/3aef3379326341c3a8d029f304e51f36.

Rode, Jennifer A. “A Theoretical Agenda for Feminist HCI.” *Interacting with Computers* 23, no. 5 (September 2011): 393–400. https://doi.org/10.1016/j.intcom.2011.04.005.

Rose, Gillian. “Posthuman Agency in the Digitally Mediated City: Exteriorization, Individuation, Reinvention.” *Annals of the American Association of Geographers* 107, no. 4 (July 4, 2017): 779–93. https://doi.org/10.1080/24694452.2016.1270195.

———— .“Rethinking the Geographies of Cultural ‘Objects’ through Digital Technologies: Interface, Network and Friction.” *Progress in Human Geography* 40, no. 3 (June 2016): 334–51. https://doi.org/10.1177/0309132515580493.

Rosenthal, Lynn, and Vivian Graubard. “Protecting Students from Sexual Assault: Building Tools to Keep Students Safe and Informed.” whitehouse.gov, April 18, 2014. https://obamawhitehouse.archives.gov/blog/2014/04/18/protecting-students-sexual-assault-building-tools-keep-students-safe-and-informed-0.

Roy, Jessica. “Posters Around Columbia Campus Call Emma Sulkowicz a ‘Pretty Little Liar.’” *The Cut.* Accessed February 24, 2019. https://www.thecut.com/2015/05/posters-around-columbia-emma-sulkowicz-lied.html.

Rutherford, Alexandra, and Mary Koss. “What Surveys Dating Back Decades Reveal About Date Rape.” *The Atlantic*, September 26, 2018. https://www.theatlantic.com/ideas/archive/2018/09/what-surveys-dating-back-decades-reveal-about-date-rape/571330/.

Saenz, Arlette. “College Student Details His Sexual Assault for Senate Committee.” *ABC News*, March 21, 2015. https://web.archive.org/web/20150321155812/http://abcnews.go.com/blogs/politics/2014/06/college-student-details-his-sexual-assault-for-senate-committee/.

Saldaña, Johnny. *The Coding Manual for Qualitative Researchers*. 2nd ed. Los Angeles: SAGE, 2013.
Samuels, Alexandra. "Father of Student Convicted of Rape: Steep Price for '20 Minutes of Action.'" *USA Today.* Accessed February 22, 2019. https://www.usatoday.com/story/news/nation-now/2016/06/06/father-student-convicted-rape-steep-price-20-minutes-action/85492660/.
Sayej, Nadja. "Personal Safety Wearables: A Helping Hand in Risky Situations." *Wareable,* March 26, 2018. https://www.wareable.com/wearable-tech/best-personal-safety-wearables.
Seaver, Nick. "Algorithms as Culture: Some Tactics for the Ethnography of Algorithmic Systems." *Big Data & Society* 4, no. 2 (December 2017): 1–12. https://doi.org/10.1177/2053951717738104.
Semenzin, Silvia, and Lucia Bainotti. "The Use of Telegram for Non-Consensual Dissemination of Intimate Images: Gendered Affordances and the Construction of Masculinities." *Social Media + Society* 6, no. 4 (October 1, 2020): 2056305120984453. https://doi.org/10.1177/2056305120984453.
Shaw, Julia, Camilla Elphick, and Rashid Minhas. "Witnessing Workplace Harassment and Discrimination: Overcoming the 'Social Contagion' of Toxic Work Culture." White paper. Spot, 2019. https://talktospot.com/downloads/Spot_Whitepaper.pdf.
Silverstein, Jason. "University of Texas Freshman Haruka Weiser Identified as Victim of 'brutal Murder,' Person of Interest Sought." *NY Daily News*, April 7, 2016. https://www.nydailynews.com/news/national/u-texas-freshman-haruka-weiser-identified-victim-article-1.2592013.
Sim, Kate, and Margie Cheesman. "What's the Harm in Categorisation? Reflections on the Categorisation Work of Tech 4 Good." *Big Data & Society* (blog), March 23, 2020. https://bigdatasoc.blogspot.com/2020/03/whats-harm-in-categorisation.html.
Sim, Kate, and Nahema Marshal. "Safeguarding Digital Rights Amidst COVID-19 Through Strategic Litigation on AI." Digital Freedom Fund, December 2020.
Simon, Anne. "Alexander v. Yale University: An Informal History." In *Directions in Sexual Harassment Law,* edited by Catharine A. MacKinnon and Reva Siegel. New Haven: Yale University Press, 2003.
Simon, Cari. "On Top of Everything Else, Sexual Assault Hurts the Survivors' Grades." *Washington Post.* Accessed February 17, 2019. https://www.washingtonpost.com/posteverything/wp/2014/08/06/after-a-sexual-assault-survivors-gpas-plummet-this-is-a-bigger-problem-than-you-think/.
Smith, Carly Parnitzke, and Jennifer J. Freyd. "Dangerous Safe Havens: Institutional Betrayal Exacerbates Sexual Trauma: Institutional Betrayal Exacerbates Sexual Trauma." *Journal of Traumatic Stress* 26, no. 1 (February 2013): 119–24. https://doi.org/10.1002/jts.21778.
Smith, Carly Parnitzke. "Institutional Betrayal." *American Psychologist* 69, no. 6 (2014): 575–87. https://doi.org/10.1037/a0037564.
Song, Jason, and Richard Winton. ""U.S. Investigates Handling of Alleged Sex Assaults at USC"." *Los Angeles Times*, July 23, 2013. http://articles.latimes.com/2013/jul/22/local/la-me-usc-sexual-harassment-20130723.
Srinivasan, Amia. "The Aptness of Anger." *Journal of Political Philosophy*, July 9, 2017. https://doi.org/10.1111/jopp.12130.

Star, Susan Leigh. “The Ethnography of Infrastructure.” *American Behavioral Scientist* 43, no. 3 (December 1999): 377–91.

Stark, Luke. “The Emotional Context of Information Privacy.” *The Information Society* 32, no. 1 (January 2016): 14–27. https://doi.org/10.1080/01972243.2015.1107167.

Strand, Russell W. “The Forensic Experiential Trauma Interview (FETI),” n.d., 7.

Suchman, Lucy. “Located Accountabilities in Technology Production.” Scandinavian *Journal of Information Systems* 14, no. 2 (2002): 7.

Suri, Jane Fulton. “Design Research for Radical Innovation.” *Rotman Magazine*, Winter 2008.

Taylor, Charles. *A Secular Age.* Cambridge, MA: Harvard University Press, 2007.

———. *Modern Social Imaginaries*. Durham: Duke University Press, 2004.

The Chronicle of Higher Education. “Campus Sexual Assault Under Investigation at Southwest Tennessee Community College.” Accessed February 17, 2019. http://projects.chronicle.com/titleix/campus/Southwest Tennessee Community College.

The White House Office of the Press Secretary. “Memorandum: Establishing a White House Task Force to Protect Students from Sexual Assault.” whitehouse.gov, January 22, 2014. https://obamawhitehouse.archives.gov/the-press-office/2014/01/22/memorandum-establishing-white-house-task-force-protect-students-sexual-a.

The White House. “Apps Against Abuse,” 2011. https://obamawhitehouse.archives.gov/node/70363.

U.S. Department of Education Press Office. “U.S. Department of Education Releases List of Higher Education Institutions with Open Title IX Sexual Violence Investigations | U.S. Department of Education.” Accessed February 22, 2019. https://www.ed.gov/news/press-releases/us-department-education-releases-list-higher-education-institutions-open-title-ix-sexual-violence-investigations.

Ullman, Sarah E., and Leanne R. Brecklin. “Sexual Assault History, PTSD, and Mental Health Service Seeking in a National Sample of Women.” *Journal of Community Psychology* 30, no. 3 (May 2002): 261–79. https://doi.org/10.1002/jcop.10008.

US Senate Committee on Health, Education, Labor & Pensions. “Reauthorizing HEA: Addressing Campus Sexual Assault and Ensuring Student Safety and Rights | The U.S. Senate Committee on Health, Education, Labor & Pensions,” April 2, 2019. https://www.help.senate.gov/hearings/reauthorizing-hea-addressing-campus-sexual-assault-and-ensuring-student-safety-and-rights.

USA Today. “Alleged Assault Victim Sues UNC for Expulsion Threat,” March 25, 2013. https://eu.usatoday.com/story/news/nation/2013/03/25/victim-sues-unc-expulsion/2018261/.

Valentine, Gill “The Geography of Women’s Fear.” *Area* 21, no. 4 (December 1989): 385–90.

Valentine, Gill. “Images of Danger: Women’s Sources of Information about the Spatial Distribution of Male Violence.” *Area* 24, no. 1 (March 1992): 22–29.

Van der Kolk, Bessel A. *The Body Keeps the Score: Brian, Mind, and Body in the Healing of Trauma.* New York: Penguin Books, 2015.

Vats, Anjali. *The Color of Creatorship: Intellectual Property, Race, and the Making of Americans*. Stanford, CA.: Stanford University Press, 2020.

Vera-Gray, F. *Men's Intrusion, Women's Embodiment: A Critical Analysis of Street Harassment*. Routledge Research in Gender and Society. London: Routledge, 2016.

Vertesi, Janet, and David Ribes, eds. *DigitalSTS: A Field Guide for Science & Technology Studies*. Princeton, NJ: Princeton University Press, 2019.

Wajcman, Judy. *Pressed for Time: The Acceleration of Life in Digital Capitalism.* Chicago: The University of Chicago Press, 2015.

Wajcman, Judy. *TechnoFeminism.* 1 edition. Cambridge, MA; Malden, MA: Polity, 2004.

Wajunki, Wagatwe. "Dear Tufts Administrators Who Expelled Me After My Sexual Assaults." Accessed February 17, 2019. https://medium.com/the-establishment/dear-tufts-administrators-who-expelled-me-after-my-sexual-assaults-25d109c464f6.

Weick, Karl E. "Organized Sensemaking: A Commentary on Processes of Interpretive Work." *Human Relations* 65, no. 1 (January 2012): 141–53. https://doi.org/10.1177/0018726711424235.

White House Task Force to Protect Students from Sexual Assault. "Preventing and Addressing Campus Sexual Misconduct: A Guide for University and College Presidents, Chancellors, and Senior Administrators," January 2017. https://www.whitehouse.gov/sites/whitehouse.gov/files/images/Documents/1.4.17.VAW%20Event.Guide%20for%20College%20Presidents.PDF.

———. "Remarks by the President and Vice President at an Event for the Council on Women and Girls." whitehouse.gov, January 22, 2014. https://obamawhitehouse.archives.gov/the-press-office/2014/01/22/remarks-president-and-vice-president-event-council-women-and-girls.

White, Deborah, and Gethin Rees. "Self-Defense or Undermining the Self? Exploring the Possibilities and Limitations of a Novel Anti-Rape Technology." *Violence Against Women* 20, no. 3 (2014): 360–68.

White, Deborah, and Lesley McMillan. "Innovating the Problem Away? A Critical Study of Anti-Rape Technologies." *Violence Against Women* 26, no. 10 (August 2020): 1120–40. https://doi.org/10.1177/1077801219856115.

Wiegman, Robyn. *Object Lessons.* Durham: Duke University Press, 2012.

Winner, Langdon. "Do Artifacts Have Politics?" Daedalus 109, no. 1 (Winter 1980): 121–36.

Wirman, Hanna E., and Ida K. H. Jørgensen. "Designing for Intuitive Use for Non-Human Users." In *Proceedings of the 12th International Conference on Advances in Computer Entertainment Technology* - ACE '15, 1–8. Iskandar, Malaysia: ACM Press, 2015. https://doi.org/10.1145/2832932.2837008.

Wong, Yenli. "But I Was Lucky: It Wasn't Rape." *Huffington Post* (blog), May 15, 2015. https://www.huffingtonpost.com/yenli-wong-/but-i-was-lucky-it-wasnt-_b_7276252.html.

Woodall, Angela, and Sharon Ringel. "Blockchain Archival Discourse: Trust and the Imaginaries of Digital Preservation." *New Media & Society* 22, no. 12 (December 1, 2020): 2200–2217. https://doi.org/10.1177/1461444819888756.

Yap, Audrey S. "Credibility Excess and the Social Imaginary in Cases of Sexual Assault." *Feminist Philosophy Quarterly* 3, no. 4 (2017): 1–24. https://doi.org/10.5206/fpq/2017.4.1.

Yin, Robert K. *Case Study Research: Design and Methods.* Applied Social Research Methods Series ; v. 5. Thousand Oaks, CA: Sage, 1984.

Zuberi, Tukufu, and Eduardo Bonilla-Silva. *White Logic, White Methods: Racism and Methodology.* Lanham, Maryland: Rowman & Littlefield Publishers, Inc, 2008.