BEYOND AIRSPACE SAFETY:
FEMINIST PERSPECTIVES ON DRONE REGULATION AND PRIVACY IN PUBLIC

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Presented at We Robot, 2017
Working Paper
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INTRODUCTION

In recent years, the impact of drones on women, and in particular, women's privacy, has sometimes gained sensational attention in popular discussions, from spying on sunbathing women, to delivering abortion pills to women who otherwise lack access. Nevertheless, the ways in which drone technology can enhance or undermine women's privacy, and more specifically, the role the law might play in influencing this dynamic, has not yet received significant academic attention. This paper proposes to do just that. It takes a step back from sensationalized media stories to consider drone privacy issues through a gendered lens, permitting further analysis of the current North American approach to drone regulation. This feminist perspective is relevant to the drone regulation debate particularly in light of the (sometimes granular) ways in which the drone's gendered impact has already come under scrutiny in popular discussions; by providing a new and critical lens through which to analyze the difficult challenges of drone privacy regulation; and by affirming some of the ways in which drone technology can perpetuate both positive and negative social values, at a time when laws guiding the permissible use and design of the technology (or the absence of such law) continue to influence the trajectory of innovation.

For instance, drone technology might embody and entrench aspects of the male gaze that are un- or under-protected by law; perpetuate or alter forms of street harassment, creating unequal access to and enjoyment of public space; collect information that can be used to make decisions that may be detrimental individual or groups of women, meanwhile lending anonymity and opacity to the drone owner by virtue of the drone's capacity to be discreet and fly at a distance from the pilot, without conveying information about the purpose of the operation or what is being collected. This informational imbalance further amplifies inequitable outcomes of drone use. At the same time, drone technology might facilitate access to information, supplies, and transportation/delivery that would otherwise be denied to women facing certain disadvantages, potentially enhancing women’s privacy in the form of bodily autonomy and decisional privacy.

The first section of the paper will consider some specific features and uses of drone technology that challenge privacy, through reference to feminist conceptions of privacy. In particular, the section considers notions of women’s modesty that underscore popular narratives regarding drone use and women’s privacy, and how these notions might undermine women’s privacy

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2 Activists have used drones to deliver abortion pills to women in both Poland and Northern Ireland. See e.g. http://www.cbc.ca/news/trending/abortion-drone-delivers-medication-to-women-in-poland-1.3132284

in public space – a space where women already face gendered intrusions upon their privacy, some of which might be further entrenched in key features of drone technology.

Drawing from feminist theories of technoscience, the paper goes on to argue that the current approach of U.S. and Canadian regulatory agencies, which focus primarily on physical safety concerns associated with drone use largely to the exclusion of a nuanced approach to privacy, incorrectly treat the technology as though it is value-neutral. The current regulatory approach does exactly what feminist technology critics caution against – it focuses on the artefact (the physical drone), while overlooking the broader cultural and social practices associated with drone technology, and the social context into which it is introduced. This narrow focus obfuscates the ways in which drone technology can reproduce, enhance, alter, or ameliorate existing social inequalities through, among other things, its impact on privacy.

Finally, recognizing that regulatory agencies like the Federal Aviation Administration and Transport Canada are mandated to focus on safety, the paper draws from the aforementioned critiques to identify several key regulatory responses that can be adopted within existing regulatory frameworks. Nevertheless, the paper also reflects on the weaknesses of these legal frameworks, and how failing to address these weaknesses might inadvertently perpetuate inequity, or— contrastingly—might prevent empowering uses of drone technology.

SECTION I: DRONE PRIVACY ISSUES THROUGH A FEMINIST LENS

An immense literature has emerged analyzing the privacy implications of drone technology in the United States and Canada, as well as potential responses of or gaps in the current law. This paper seeks to contribute to that growing literature by approaching the question - ‘what are the privacy implications of drone technology’ - through reference not to the existing privacy jurisprudence, but rather, to feminist conceptions and critiques of privacy. Feminist writings on privacy have long sought to reveal the gendered, and often patriarchal, assumptions underlying the doctrine, and have also identified privacy invasions that are commonly experienced by women yet continue to go largely unprotected in law (e.g. street harassment). This section will consider whether

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4 See e.g., Judy Wajcman, “Feminist Theories of Technology” (2010) 34 Cambridge Journal of Economics 143-152.
5 See e.g., Linda Layne, Feminist Technology (UI Press, 2010).
and how drone technology might either amplify, or help to eliminate, some of these privacy concerns, particularly with reference to the technology’s unique combination of attributes.\textsuperscript{7}

Drones have several features that combine to present fairly unique privacy challenges. For instance, two of the most significant physical features of the drone that challenge privacy are also two of its most fundamental features - the fact that drones fly, and that they do so remotely, without a human on-board. The aerial nature of drone technology permits an operator to access potentially unexpected vantage points of the ground below in private or public spaces, compared to ground-based or stationary tools for observation (such as CCTV and cell phone video). Since there is no human on board, the drone can be smaller than a manned aircraft. A drone can also be operated in areas that are too dangerous or difficult for a manned craft to access. This unmanned aerial nature also makes the technology well suited for longer-term monitoring and tracking. Furthermore, since drones can be relatively cheaply sold, and are widely accessible on the consumer market, they can be put to wide-scale use by a variety of actors.\textsuperscript{8} These features and capabilities, among others, can combine to cause a ‘panoptic’ chilling effect on individuals on the ground below.\textsuperscript{9} The technology not only can collect enormous amounts of information from the ground below, it also feels invasive.\textsuperscript{10}

It is of course possible that over time people will become so accustomed to drones in the sky that this panoptic effect cases. However, another legally important feature of drones – the fact that they operate detached from a human pilot – raises further challenges for privacy and accountability. An individual may feel that a drone has invaded her privacy, but if she cannot identify the operator – because the pilot was located at a distance – then she may not know whom to pursue, or through which legal mechanism.\textsuperscript{11} Furthermore, an individual might not know what information a drone is collecting or for what purpose, which makes it difficult to know which legal remedy, if any, is available. This uncertainty may also serve to compound the panoptic implications discussed above.\textsuperscript{12} The drone’s detachment from the pilot therefore disempowers the observed; she has no immediate way to gain more information about the drone’s operation or operator.\textsuperscript{13}

\textsuperscript{7} A small but interesting literature has developed assessing the military use of drones through a feminist lens, in particular looking at the implications of the drone’s capacity for remote operation on the masculinization of the military. See e.g. Anna Feignbau, “From Cyborg Feminism to Drone Feminism: Remembering Women’s Anti-Nuclear Activisms” (2015) 16 Feminist Theory 265-288; Lorraine Bayard de Volo, “Unmanned? Gender Recalibration and the Rise of Drone Warfare” (2016) 12 Politics & Gender 50-77.


\textsuperscript{9} Roger Clarke, “Understanding the Drone Epidemic” (2014) 30 Computer Law & Security Review at 230-246. As Professor Roger Clarke explains, “drones actually bring back the sense of physical superiority of the observation-point over ground-dwelling individuals.” Echoing this sentiment, Professor Ryan Calo has described drones as representing “the cold, technological embodiment of observation.” Ryan Calo, “The Drone as Privacy Catalyst” 64 Stan L. Rev Online 29 at 34.

\textsuperscript{10} As perhaps exemplified by the breadth of recent news stories involving individuals shooting at drones, or otherwise seeking to disable them.

\textsuperscript{11} See e.g. Froomkin and Colangelo, “Self-Defense Against Robots and Drones”, supra.

\textsuperscript{12} Ibid. Uncertainty about a drone’s mission and owner played a significant role in an encounter leading to one of the first U.S. criminal cases involving a drone (see e.g. http://www.slate.com/blogs/future_tense/2015/10/28/case_against_william_merideth_for_shooting_down_a_drone_is_dismissed.html).

\textsuperscript{13} This could also result in individuals taking dangerous self-help measures in response to drones. As Froomkin and Colangelo, supra explain at p. 33: “the less the victim knows about the robot spy, or suspected spy, the more that its surveillance is likely to seem a threat. And the more that the surveillance seems a threat, the more that the victim will seek not just a judicial remedy – uncertain, likely time-consuming and costly, and probably much too late to undo the harm – the more that the victim will seek a self-help remedy.”
Drawing from the features identified above, and from feminist scholarship on privacy and surveillance, the next sub-section of this paper sets out some examples of the more imminent ways in which drone technology could impact women’s privacy. The below section does not reflect (nor could it) an exhaustive list of the ways in which drone technology might have differential impact on different demographics of women, particularly at the intersecting axes of race, colonialism, sexuality, disability, class, age, and/or gender identity. It is meant instead to raise considerations about how the broader deployment of drones in society will impact the privacy of some groups differently than others, in this case, at the intersection with gender. In the subsequent sections, I consider whether and how these concerns might be addressed within current North American approaches to drone regulation, as well as flagging the weaknesses with the current approach to drone regulation.

i. Challenging the ‘Drone as Offender of a Woman’s Modesty’ Narrative

Stories about drones spying on “naked”, “topless” or “sunbathing” women make headlines regularly, as do drones peering into women’s homes, apartments, backyards, or over swimming pools. Anecdotally, it can be difficult to avoid these stories when following popular discussions about drones. On the other hand, similar stories about drones spying on men – particularly in a state of undress – are nearly unheard of.

In her timely post on Slate, law professor Margot Kaminski challenges the media and academic focus on this trope, which she labels the “sunbathing teenager” narrative. Kaminski considers why this narrative is so popular, referring to the old tale of Lady Godiva, who rode naked through the streets of England to protest her husband’s taxation policy. Out of respect for her modesty, the city folk averted their eyes. All but one man, the Peeping Tom, who is then punished for his offence of undermining the noble woman’s honour. Kaminski goes on to explain the contemporary drone connection with the age-old Lady Godiva tale:

The sunbather disrupted by drones is a Lady Godiva story, of sorts, without the tax policy. A young woman expresses liberation by wearing a bikini in her backyard or on the beach. Everyone generally follows social norms and refrains from staring for too long, or taking photos or video. But the hovering drone breaks that agreement and must be punished, just like Tom. Often it’s dad who does the punishing, but sometimes it’s just a Good Samaritan. Law isn’t very helpful.

14 E.g. http://dailycaller.com/2014/06/24/pervy-nerds-get-their-hands-on-a-drone-and-use-it-just-how-youd-expect/; http://www.mirror.co.uk/news/uk-news/peeping-toms-using-drones-spy-7642394; http://globalnews.ca/video/2167054/drone-caught-spying-on-vancouver-woman-sunbathing-topless. Many online reports of these stories are also, disconcertingly, choose to post the video; I have not cited to these. The posting of this voyeuristic footage to the Internet raises even broader concerns and challenges for women’s privacy, and connect drone privacy challenges to discussions about, for instance, revenge porn (see e.g. Danielle Keats Citron and Mary Anne Franks, “Criminalizing Revenge Porn” (2014) 49 Wake Forest Law Review 345)


16 A Google search for “drone spies on man” (from Canada at the time of writing) reveals one story from Utah about a couple who spied on a series of people including one man in his bathroom; and then a number of stories about husbands spying on their cheating wives. Meanwhile, the same search with “woman” reveals multiple pages of applicable search results. http://www.huffingtonpost.com/entry/peeping-tom-drone_us_58a6847fe4b045cd34ec03e56

Kaminski highlights how this gendered trope is a distraction—“it provides a woefully incomplete account of the kinds of privacy concerns that drones raise”, ignoring for instance, the significant impact drones might have on informational privacy; the implications of facial recognition drone payloads for anonymity; risks relating to cybersecurity and hacking; and so on. While Kaminski, I think rightly, encourages us to move on from focusing on ‘women in bikinis’ when we debate the privacy problems associated with drones, there is a further lesson that can be drawn from this sunbather narrative, which does not present itself explicitly in the Lady Godiva analogy.

Interrogating this ‘sunbathing’ narrative from the standpoint of feminist privacy scholarship reveals another layer to this popular trope—it is predicated on an outmoded theory of privacy that considers women’s modesty at the core of her legal protection. And, Lady Godiva’s ride through city streets aside, this modesty theory of women’s privacy (which implicitly underlies the ‘sunbather’ narrative in popular drone discussions) is grounded upon her confinement and seclusion within the home. Under this traditional approach, a woman’s modesty and virtue could be called into question once she leaves the ‘protection’ of the (traditionally male-dominated) home, and enters into public life or the workplace. Feminine modesty was a kind of “obligatory, social disappearing act that shield[ed] a woman in the mantle of privacy”. And, while these strict gendered modesty norms of the 19th century may be seen as antiquated today, these norms played a significant role in the development of key aspects of our current privacy jurisprudence.

For example, Professor Anita Allen has exposed the centrality of norms of female modesty and virtue in the development of the American privacy tort, which has also provided the foundation for the development of the Canadian tort. Through an examination of early developments of a privacy tort, as well as Samuel Warren and Louis Brandeis’ famous paper “The Right to Privacy”, Allen identifies “outmoded normative assumptions about female modesty and seclusion” at the core of the tort’s emergence. For instance, in laying the groundwork for a man’s right to a “private home” and “family life” – the “right to be let alone” – Warren and Brandeis cite a line of cases in which parents and husbands have rights of recovery against male seducers of their daughters and wives or where the shame and dishonour caused by a daughter’s seduction must be remedied. She concludes that “women appear in Warren and Brandeis’ article as seduced wives and daughters”, while the implications of a “private home” and “family life” for women, and particularly women’s privacy, go completely overlooked.

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18 “Traditional forms of female modesty in American culture required that women, much more than men, exhibit speech, dress, and behaviour calculated to deflect attention from their bodies, views, or desires.” Anita Allen and Erin Mack, “How Privacy Got its Gender” (1991) 10 Northern Illinois University Law Review 441 at 444.

19 Let us not forget that Lady Godiva was a British noblewoman with considerable class and race privilege to protect her.

20 Historically, “women’s privacy” brought to mind notion of peaceful seclusion within the domestic sphere. See also Anita Allen, Uneasy Access: Privacy for Women in a Free Society (Rowman & Littlefield, 1988) at preface.

21 Allen, “How Privacy Got its Gender” at 453. This is not to mention if a woman lives in public or makes her living in public, as in the case of homeless women and street sex workers.

22 Allen, Uneasy Access at 20


24 As a reflection of the principle of non-interference with a man’s family relations. Allen and Mack at 458.

25 As proof of a historical regard for human emotion in law. Allen and Mack at 458.

26 Allen and Mack at 459 and 466: Warren and Brandeis were “not critical of the ways in which homelife […] and norms of female modesty contributed to women’s lacking autonomous decisionmaking and meaningful forms of individual privacy.” To underscore this point, Allen directs us to their contemporary, Charlotte Perkins Gilman, who emphasized that the appeal to the ‘privacy of the home’ overlooked (or took for granted) that someone therefore needed to maintain that home, and that women had been relegated to that role; that there was not actually much privacy in the home for
Allen further refers to numerous tort cases where the courts went remarkably far to compensate a female plaintiff for a privacy loss, where it was predicated on her modesty. The basis on which the male judges rationalized the remedy was a “paternalistic, patriarchal concern for feminine modesty and virtuous seclusion.” The problem with this theory underlying tort protection is that it does little or nothing to protect women’s privacy beyond modesty, nor would it protect a woman perceived by traditional norms to be immodest.

Women’s modesty and seclusion in the home has also factored into the development of constitutional privacy protections. For instance, Jeannie Suk exposes the central role of women’s modesty in several Fourth Amendment precedents. In *Kyllo v United States*, which involved the use of a Forward Looking Infra Red device by police to examine the amount of heat emanating from a home, Justice Scalia centres his concerns on the now potential visibility of the “lady of the house taking her bath and sauna.” Suk elaborates that this focus on the lady in her sauna (which appears nowhere in the facts of the case), “evokes the privacy interest of the man [of the house] entitled to see the lady of the house naked and his interest in shielding her body from prying eyes. Privacy is figured as a woman, an object of the male gaze.” Suk explains how the ‘lady in the bath’ evokes concerns about prying eyes lusting after a man’s wife; the threat to the woman’s virtue by the suggestion of sexual infidelity in the eyes of the voyeur. Anxiety about an intrusion into the man’s home “can be expressed as anxiety about female sexual virtue. A meaning of a man’s home as his castle that emerges here is the need to shield his wife’s body from other men’s desire.”

Accordingly, when it comes to addressing gendered privacy concerns raised by drones, the ‘sunbather’ narrative also hints at a potential weakness in privacy protection – namely that a woman’s privacy vis-à-vis a drone invasion could be premised upon an implied reliance on her modesty. This would suggest that, regardless of her interest in not being disturbed or harassed by an invasive drone, in public spaces (particularly in contexts of immodesty) she may have no legal recourse, while, within feminist conceptions of privacy, she should. This is not to mention that a deeper consideration of not only the gendered, but also the class, race and heteronormative

women, between children, other family members, servants, etc; and that because of male authority over the home domain women confined to that home lacked decisional privacy over marriage, sex and reproduction. “Women's lack of meaningful opportunities for individual privacy is tied to their economic role. To have real privacy, women would have to be freed from their limited role in the economy as mere housekeepers and mothers”: Allen and Mack, summarizing Gilman, at 468.

27 “Typical judges were likely to be strongly influenced by pervasive notions of a need to take special care to preserve women’s modesty as among their chief virtues.” Allen and Mack at 462.

28 Allen and Mack at 464.

29 Allen and Mack at 477. This problem is notably still prevalent in sexual assault trials in Canada and the U.S. See e.g. http://www.cbc.ca/news/politics/justice-robin-camp-judicial-council-1.4017233


31 533 US 27 (2001)

32 Suk at 488: highlights other examples from the United States Supreme Court.

33 “Kyllo’s lady in the bath draws on a complex of cultural associations that emanate from this canonical story: the prying eyes of legal elders who violate the private boundary of a home and lust after a man’s wife; the predicament of well-ordered domesticity on the woman’s virtue, gravely threatened by the suggestion of sexual infidelity, even rape, enacted in the voyeurs’ observation of her naked body; the restoration of domestic order qua legal order by punishment of the gaze.” Suk at 490.

34 “If in the adage [a man’s home is his castle] the home is envisioned as a barrier against intrusion, we have seen that anxiety about intrusion can be expressed as anxiety about female sexual virtue. A meaning of a man’s home as his castle that emerges here is the need to shield his wife’s body from other men’s desire. To neglect or decline to do so is to prove himself unworthy to be the man of the castle, unworthy of that domain of privacy to which a man in his home is entitled.” Suk at 491. See also I. Bennett Capers, “Unsexing the Fourth Amendment” (2014-2015) 48 U.C. Davis Law Review 855.

35 See Sub-Section II.
assumptions underlying the modesty theory of privacy, would reveal a hierarchy in ‘who’ has traditionally been deemed modest and therefore deserving of privacy protection.\textsuperscript{36} The above analysis largely essentializes the concept of ‘women’s modesty’ (as though it applies to all ‘women’ equally), but in reality this theory of privacy originated to protect a particular group of women, and still bears that legacy.\textsuperscript{37}

The modesty theory of women’s privacy may in fact serve to reconcile the different legal outcomes in a number of popular drone privacy stories. On the one hand, aggressive measures taken to disarm a drone that is flying over private property and purportedly exposing women (particularly young women) to the gaze of a stranger have been deemed legally if not socially acceptable, while little or no protection was offered to a woman who felt a similar sense of intrusion on a public beach – her aggressive response was met with criminal charges.\textsuperscript{38} Similarly, the privacy concerns of a sex-worker who was filmed with a john by a vigilante with a drone were not raised in reports about the incident – even when the vigilante posted the video online; meanwhile she was sentenced to a year in prison based on the drone footage.\textsuperscript{39} Not only is the popular narrative around drone privacy focused on the \textit{wrong} theory of privacy, but also, any judicial reliance this theory (even implicitly) threatens to undermine legal recourse for privacy invasions occurring in public space, which can also be highly gendered. The section below considers how drones might impact one category of privacy invasion that affects a preponderance of women, with largely no legal recourse.

\section*{ii. Drones and Gendered Invasions of Privacy in Public}

One central implication of the traditional modesty theory of women’s privacy (which is rooted in seclusion within the home) is that in public space, women enjoy considerably less, or no, privacy. Feminist privacy scholarship has expounded upon this implication for women, particularly with respect to harassment on public streets. This sub-section first describes the value of and challenges to women’s privacy in public, as implicated by various forms of harassment. It also highlights the current social context in which such invasions are prolific. The section then considers whether and how this situation might be implicated by drone technology.

In her book \textit{Uneasy Access}, Anita Allen demonstrated ways in which women experience too much of the wrong kinds of privacy, and not enough of the right kinds of privacy. The above sub-section has touched on some of the \textit{wrong} kinds of women’s privacy - gendered standards of modesty that stem, at least in part, from seclusion within the home. The wrong privacy has also included the ways in which privacy doctrine has historically shielded domestic abusers from legal accountability, by protecting the ‘sanctity of the home’ at the expense of women seeking state assistance or protection from their (predominantly male) domestic abusers.\textsuperscript{40}

Meanwhile, women continue to lack what Allen refers to as the right kinds of privacy – decisional autonomy, particularly over marriage, reproduction and sex, (which were traditionally seen as part of “family life”, over which men had decision-making authority), as well as the ability to seek

\textsuperscript{36} Allen and Mack, “How Privacy Got its Gender”

\textsuperscript{37} \textit{Kyllo} rhetorically protects a woman with a house, a husband, and even, a sauna – presumably, a wealthy perhaps white, cis, heterosexual woman.


\textsuperscript{39} \texttt{http://www.independent.co.uk/news/world/americas/prostitute-caught-on-drone-camera-having-sex-with-elderly-man-pleads-guilty-a6960946.html}

replenishing solitude outside the confines of the home. In other words, women in particular lack privacy in public, due especially to the disruptions caused by sexual harassment in public spaces and the workplace.

Allen defined “privacy in public” as the “inaccessibility of persons, their mental states, and information about them to the senses and surveillance devices of others.” Access to and the importance of this realm of privacy has been, and continues to be, gendered. The public realm, as Allen describes, can be a place of private tasks, where women can alleviate or escape the stresses of home or employment. Street harassment can “break the flow of thought and distract a woman’s attention, utterly without purpose, from her own concerns.” Private tasks and repose are replaced with experiences of leering, insulting, prying and offensive touching. These unwanted intrusions have the effect (if not the intention) of silencing, intimidating and objectifying women when they enter public space, and often leave women with little legal or normative recourse, fearing a dangerous altercation, the desire to avoid embarrassment, or a lack of time, money or unlikelihood of success in seeking police or legal intervention. Viewed individually, these privacy invasions can seem de minimis, and perhaps for this reason receive little or no legal protection. But when their frequency is considered, the impact of this privacy invasion has a cumulative effect.

Ultimately, street harassment leads to disproportionate disparities for and amongst women seeking to enjoy the solitude and repose that can be found leaving the domestic and employment spheres. Canadian and U.S. statistics show that the experience of street harassment is widespread – near universal by some estimates. Furthermore, public harassment is experienced significantly differently amongst women. For example, in the United States, African American women not only experience quantitatively more street harassment, but it is qualitatively different, rooted in histories of slavery and sexism. Furthermore, verbal or physical harassment can escalate into more intrusive,

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41 “Seclusion, achieved through physical distancing, and anonymity, achieved through limited attention paid, are the forms of inaccessibility that significantly constitute privacy in public” Allen, Uneasy Access at 123-24.  
42 Allen, Uneasy Access at 128.  
43 Allen, Uneasy Access at 128. This does not include such encounters as striking up a conversation or flirtation: “The privacy-diminishing intrusions that are to be condemned as morally disrespectful and harmful have little to do with genuine personal interest in the women who are victimized” Allen, Uneasy Access at 133. Precisely the kind of encounter that could not (likely) be mediated by an anonymizing technology.  
44 Allen, Uneasy Access 131: Women do not enjoy the same privacy in public as men do.  
45 “Regardless of the consequences of the intrusions, we feel we can do little as individuals even about the egregious intrusions suffered in public places. We fear dangerous altercation, we wish to avoid embarrassment, and we haven’t the time or money to seek police or legal protection.”  
48 Allen, Uneasy Access at 129.  
49 E.g. A study by Cornell University found that 85% of women in the United States experience street harassment before the age of 17. The study also indicated that 50% of women under 40 have been groped or fondled in the last year, whereas 77% of women have been followed by a man or a group of men. Over half of the respondents noted changing their clothing or behaviour due to concerns over street harassment. See also this online study by Stop Street Harassment: http://www.stopstreetharassment.org/resources/statistics/sshstudies/. Similarly, 88% of Canadian women report their first instance of street harassment before the age of 17. See e.g. Deirdre Davis, “The Harm that has No Name: Street Harassment, Embodiment and African American Women” (1994) 4 UCLA Women’s Law Journal 133; Deborah M. Thompson, “The Woman in the Street:” Reclaiming the Public Space from Sexual Harassment” (1993) 2 Yale Journal of Law and Feminism 313.
dangerous or violent forms of public harassment, including stalking and rape, which are also experienced differently at intersecting axes of marginalization.\(^{51}\)

How does this conception of privacy – and the associated social context – transect with drone technology? No technology, including drones, emerges in a vacuum.\(^{52}\) Existing conditions of inequality will impact the development and adoption of new technologies, while technological systems in turn reproduce systems of inequality.\(^{53}\) Drone technology certainly does not cause street harassment or stalking, nor is it a necessary condition for these invasions of women’s privacy. But the technology is integrating into a social context in which street harassment and stalking are already a moral and social (if not legal) problem for women, so it is worth considering how the technology might impact that social context – and how that social context might (or should) impact the development and regulation of the technology.

On one hand, the combination of several key attributes of drone technology – in particular its dislocation from the operator, and related anonymity of the user of the device, as well as the ‘silent observer’ nature of the technology – might actually discourage its use for street harassment of women, which often entails a more personal interaction between the harasser and woman, and the assertion of the power dynamic between them.\(^{54}\) These features though, also make the drone more apt for use in escalated forms of harassment like stalking where the stalker can remain anonymous and harder (potentially) to identify – not to mention more capable of accessing unexpected or difficult to shield vantage points. Additionally, the dislocation of the drone from its operator deepens the power imbalance between the harasser and the woman whose privacy is invaded. Where there is already little legal or social recourse for a privacy invasion by a person, the drone adds a further layer of informational and accountability protection – the woman might not know who is operating the drone, why, or how to prevent it. Furthermore, the nature of the drone as an anonymous observer could have an acutely objectifying impact – there is no social interaction intended, the object of the observation is entirely objectified.\(^{55}\) In this case, rather than reducing its potential for harassment, the drone’s unique combination of features might simply change the nature and experience of harassment. Perhaps then it is unsurprising that stories are already

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51 Stalking is the fifth most common violent offence committed against women in Canada. Canadian women are three times more likely to be victims of stalking than men, perpetrators are most often men: [http://www.women.gov.on.ca/owd/english/ending-violence/sexual_harassment.html](http://www.women.gov.on.ca/owd/english/ending-violence/sexual_harassment.html); Indigenous people in Canada are twice as likely (7%) as non-Indigenous people (3%) to have experienced some form of stalking, and young women aged 15-24 reported the highest rates of being stalked: [http://www.justice.gc.ca/eng/pr-cj-jp/fv-xf/bar/part1.html](http://www.justice.gc.ca/eng/pr-cj-jp/fv-xf/bar/part1.html); [http://wvcacanada.ca/data/research_docs/00000354.pdf](http://wvcacanada.ca/data/research_docs/00000354.pdf). Similarly, in the United States women of colour will experience higher rates of stalking - 1 in 4 American Indigenous women will experiencing stalking, and 1 in 5 African-American women will experience stalking: [http://www.wgac.colostate.edu/stalking-statistics](http://www.wgac.colostate.edu/stalking-statistics).

52 “The twin fields of feminist science studies and the history of science clearly demonstrate that new technologies are not objective nor do they spring forth in a cultural vacuum (Treichler 1999; Haraway 2004; Hammonds 1999)” (Mason and Magnet 108) (Mason and Magnet 109) As professors Mason and Magnet emphasize “the history of surveillance technologies reveals that they also were developed in a cultural code rife with inequalities, and thus reflect those same inequities” and “as these computing technologies were developed in a cultural context of the persistent and widespread occurrence of violence against women, it is expected that these new technologies reflect these old inequalities and have resulted in the intensification of the surveillance and stalking of victims of violence


54 See e.g. Thompson “Reclaiming” at 327-328. This of course assumes that the drone is not equipped will with a microphone. There is no good reason to assume this limitation in the future.

proliferating about drones being used to sexually harass, stalk, and objectify women in public.\textsuperscript{56} A concern about women’s public harassment and privacy can be distinguished from the ‘sunbather narrative’ focus on women’s modesty, as here the focus is on the invasion into a woman’s personal privacy in the form of her right to repose, inaccessibility, anonymity, (rights that are also central to men’s privacy) in public space, and not her right to (or duty of) modesty.

Further consideration and empirical work is needed to better understand and unpack how this emerging and potentially prolific and transformative technology will impact women’s privacy in this and other contexts. None of the above discussion is intended to suggest that drones may not be used the same way against men. However, the social context and deeper history of sexual violence, stalking and objectification of women, particularly in public, cannot be overlooked. While drone technology – and the surveillance payloads that can be attached to it – will engage the privacy interests of both men and women in public spaces,\textsuperscript{57} gender - intersecting with race, colonialism, sexuality, class, disability, and age - continues to be an important determinant of one’s ability to expect and assert personal privacy outside the home.\textsuperscript{58}

iii. Privacy Consequences of Drones as a Tool to ‘Protect Women’ in Public Space

The two above sub-sections highlight how, both socially and legally, a woman’s personal privacy can be implicated and undermined by gender inequities. And given several of its significant attributes drone technology could serve to amplify some of the privacy invasions that women experience, particularly in public spaces where there is little legal or normative protection.

However, drones have also been suggested as a tool to help protect women, in particular from gender-based violence in public. Two such examples include the use of drones as personal streetlamps, which can be summoned through a cell phone application and which would follow an individual around when they feel unsafe.\textsuperscript{59} A second such suggestion is to use drones to monitor public spaces perceived as high risk for crime – in particular, the New Delhi, India police force plans to use small surveillance drones equipped with night vision and thermal imaging cameras as a means to crack down on rape.\textsuperscript{60} These proposed uses, among other similar proposals by both state and private actors, could very well have beneficial outcomes for women. But, such proposals must also be subjected to a critical feminist analysis before their acceptance and widespread adoption, particularly where the justification for this drone usage is the purported ‘protection of women.’

As professors Corinne Mason and Shoshana Magnet acknowledge,

it is a difficult task to critique surveillance technologies aimed at ensuring women’s safety against abusers. When made visible as anti-violence tools, technologies of surveillance appear to be uncontroversial to a range of actors. […] but by overlooking the complex ways that surveillance practices and technologies are entrenched within the prison industrial complex,

\textsuperscript{57} However, these types of informational invasions, and their consequences, are also heavily based on gender, race, class, age, disability, and so on. See e.g.: Monahan “Dreams of Control at a Distance”; Simone Browne, \textit{Dark Matters: On the Surveillance of Blackness} (Duke University Press, 2015); and the collection by Rachel E. Dubrofsky and Shoshana Amielle Magnet (eds) \textit{Feminist Surveillance Studies} (Duke University Press, 2015).
one might miss key challenges that surveillance technologies pose to anti-violence strategies. Whether it is smartphones, iPhone applications, Google maps, or home surveillance, feminist surveillance studies scholars must investigate the ways that existing inequalities may be exacerbated by their use.  

Feminist scholarship must be attentive to the ways in which it could be co-opted to justify, for example, increasing public surveillance, or surveillance of particular. The construction of the ‘woman as a victim’ in need of protection can lead to her own forced surveillance. Professors Wesley and Gaardener highlight the difficult trade-off women can experience between wanting to feel safe while accessing the outdoors, and discomfort with the increased surveillance that can accompany this desire. The potential of a self-summoned drone lamp that tracks one’s location will perhaps encompass this difficult balancing in the future. Furthermore, North American history is replete with examples where the fear of victimization of (white) women has justified racial discrimination, criminalization and surveillance of marginalized groups. Compounding upon this discriminatory outcome – such narratives can further justify a refusal to surveil and criminalize those who abuse members of these marginalized groups, such as the Canadian government’s consistent refusal to investigate the murders of Indigenous women and girls, while simultaneously supporting state surveillance of Indigenous women.

While, again, drone technology is not the cause of, nor does it necessitate, this outcome, the technology is well suited to facilitate and expand state surveillance, particularly when coupled with the seemingly beneficial promise of improving women’s security, given among other things, its relatively low cost (both to acquire, and to operate relative to police foot patrol), capacity to enter into otherwise difficult to access areas, and potentially increasing levels of autonomy. Accordingly, assessing the increased state use of drones through a feminist lens requires consideration of the ways in which drones – potentially utilized with the goal of protecting of women – may increase the surveillance of women in public, particularly, marginalized women.

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61 Corinne Mason and Shoshana Magnet, “Surveillance Studies and Violence Against Women” (2012) 10 Surveillance & Society 105 at 114-116: “we argue that assertions that surveillance technologies keep us safer from violence as they help police to arrest perpetrators [are] deeply problematic. Rather, they may only further the criminalization of victims of violence through mandatory arrest policies for women, or women may avoid even those technologies explicitly designed to help enable police surveillance of their abusers for fear of a criminal justice outcome”.

62 Dubrofsky and Magnet “Introduction” at 1. The “racist imagining of violence as key to communities of colour justifies new forms of surveillance by the state in ways that facilitate the disproportionate criminalization of communities of colour” – Dubrofsky and Magnet “Introduction” at 8.


64 See e.g. Constance Backhouse, Colour-coded: A Legal History of Racism in Canada (Osgoode Society for Legal History, 1999)


69 “Feminists who engage with Big Brother need to be mindful of the ways in which responses to the kinds of surveillance of most relevance to the privileged may fail to address or even worsen the kinds of surveillance
Furthermore, a deeper consideration of whether this use of drone technology will actually have the effect of protecting the women it purports to protect is of course necessary. Professor Hille Koskela’s analysis of the effectiveness of CCTV cameras used for this same purpose reveals a number of concerns, including that the volume-less cameras failed to protect women from verbal assaults, and that the cameras transformed into a form of voyeurism for the predominantly male security personnel.\textsuperscript{70} One could imagine with the drone’s dislocation from a human intervener that human intervention in a crime would have, at least, a time-delay. Delegating crime intervention to the drone itself raises a host of other questions beyond the scope of this discussion.\textsuperscript{71}

\textbf{v. Summary}

The goal of the above section has been to highlight some of the ways in which drones might engage privacy, as understood and evaluated through a feminist lens. The examples of the gendered implications of this emerging technology are non-exhaustive and each will merit deeper analysis if/as drone technology is more widely adopted. A further observation that can be drawn from the above discussion is that the experience and personal consequences of privacy invasions and surveillance in public space have been known to members of subordinated groups, including women, for a long time.\textsuperscript{72} One advantage of drones becoming a significant ‘privacy catalyst’\textsuperscript{73} is that the nature of this technology will cause members of empowered groups, who (possibly by virtue of a privileged status) have not been subject to privacy invasions and surveillance, to become increasingly aware of the personal and social consequences of such monitoring (not unlike the Snowden revelations).\textsuperscript{74} Critically though, the response to an increased recognition of the importance of privacy must be comprehensive of the differential experiences of marginalized groups for that response to be meaningful.

Drawing on this examination, the subsequent sections consider whether and how these differential implications can be addressed through the current North American approach to drone regulation.

\textbf{SECTION 2 – REFLECTING ON THE ‘SAFETY-FIRST’ FOCUS OF CANADIAN AND U.S. DRONE REGULATION}

Having considered some ways in which drone technology might differentially affect women’s privacy, particularly in ways that might not be addressed under privacy laws of general application, the current section examines Canadian and U.S. drone-specific regulation to assess whether and how some of these differential outcomes might be addressed within the regulatory framework.

disproportionately experienced by the “other” due to the underlying discriminatory tropes that make them targets in the first place.” Bailey at 17.


\textsuperscript{71} See e.g. https://motherboard.vice.com/en_us/article/dallas-shooting-bomb-robot-legal-analysis

\textsuperscript{72} “The fact of the matter is members of subordinated groups have known the powers and technologies of surveillance for some time. For these groups, surveillance is and always has been inescapably noticeable because it is part of everyday life.” Bailey at 4.

\textsuperscript{73} Calo, “Drone as Privacy Catalyst” supra.

\textsuperscript{74} “Suddenly members of empowered groups who haven’t been used to being under surveillance are realizing that they’re subject to monitoring and profiling and they don’t like it one bit.” Bailey at 9.
First, this section seeks to identify the North American ‘approach’ to drone regulation – namely, the general themes and priorities in the regulation of drones, how regulations purport to apply to the technology, and to the social contexts into which it is adopted. My goal here is not to set out a detailed summary of all North American drone laws, many of which are in a state of frequent flux, but rather to draw out some generalizations that will be helpful for the subsequent analysis, in light of issues raised in the preceding section.

In regards to the Canadian and U.S. approach to drone regulation, the first observation that can be drawn is that both Canada and the United States appear to accept that drone technology is ‘here’. While in both countries there are some significant regulatory limits on widespread drone use, the federal governments of both Canada and the U.S. take the position that drone technology will bring economic benefits to society as a whole, and that it is worth having and encouraging for further adoption. Accordingly, we are not presently operating within a regulatory space where the object of regulation is perceived to need preventative prohibition. This is significant in the sense that, while regulators might strive to address and minimize risks associated with the technology, ultimately there is an expectation and a pressure to increasingly permit non-risky uses.

Another important aspect of drone regulation in the context of risk-assessment is a predominant focus on safety. In both Canada and the U.S., the primary direct regulators of drone technology are federal safety agencies – Transport Canada and the Federal Aviation Administration respectively. The specific rules promulgated by these agencies, unsurprisingly, focus on safety particularly with respect to other airspace users, as well as people, animals and property on the ground.

In both countries, drone regulations vary according to the operator of the drone (state agencies, commercial operators, recreational users, journalists), though these differences are beginning to disappear, and according to the size of the drone (smaller drones are subject to less regulation than larger drones). In both countries, recreational users were largely unregulated for a long time, though this is also beginning to change. Commercial regulators have traditionally been highly regulated. The extent of regulation has not been predicated on the purpose of the operation (beyond the commercial versus recreational distinction), nor on the types of surveillance or other payloads attached to the drone.

For safety reasons, flights over populated or established areas, and flights near airports are generally more restricted or limited than those over open fields or unpopulated spaces. Both countries restrict drones from certain airspace, including near military installations, prisons and in national parks. While these safety rules have some beneficial consequences for personal privacy – particularly by limiting the use of drones in populated areas – privacy is not the central philosophy

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75 See for example: “Presidential Memorandum: Promoting Economic Competitiveness While Safeguarding Privacy, Civil Rights, and Civil Liberties in Domestic Use of Unmanned Aircraft Systems” https://obamawhitehouse.archives.gov/the-press-office/2015/02/15/presidential-memorandum-promoting-economic-competitiveness-while-safeguard (acknowledging the transformative economic potential of drones, while also recognizing the need to safeguard privacy, civil rights and civil liberties); Canadian Aviation Regulations Advisory Council “Notice of Proposed Amendment (NPA): Unmanned Air Vehicles – Executive Summary” http://wwwapps.tc.gc.ca/Saf-Sec-Sur/2/NPA-APM/doc.aspx?id=10294 (“The rising sales and evolving technology of unmanned air vehicles (UAVs) make them a rapidly growing part of the aviation industry [...] Transport Canada seeks a balanced approach to both safely integrate UAVs into Canadian airspace and encourage innovation within this important new subsector of civil aviation. At the same time, it is important to recognize the unique risks UAVs and UAV users of varying degrees of aviation expertise, pose to other airspace users.”)

76 Transport Canada recently adopted fairly stringent limits on recreational use, after a long period where recreational users were largely unregulated: http://business.financialpost.com/fp-tech-desk/increased-risk-to-aviation-safety-new-rules-introduced-for-recreational-drone-use-in-canada
for drone regulation. Accordingly, as the safety of drone technology improves, some of these laws that currently consequentially protect privacy will likely change.\(^7\)

In Canada, privacy concerns raised by drones have received relatively little attention from drone regulators, beyond a general call for drone operators to “respect the privacy of others” and “avoid flying over private property or taking photos or videos without permission”.\(^7\) By contrast, the privacy implications of drones have received more attention in the U.S.\(^7\) For example, the National Telecommunications and Information Administration (“NTIA”) has developed voluntary drone privacy guidelines, which primarily recommend notifying individuals whose data might be collected, and collecting the minimum necessary amount, to which the FAA has referred operators.\(^8\) In a press release corresponding with the implementation of new rules in June 2016, the FAA advised that it will act to address privacy considerations and provide drone users with “recommended privacy guidelines” as a part of the registration process.\(^8\) Privacy practices are couched as a way to ensure the economic success and social integration of the technology, for commercial and non-commercial operators.\(^8\) While these are positive privacy ideals – to date they provide no actual legal recourse for individuals negatively affected by drone use. Indeed, accountability and recourse for privacy concerns have not been the primary focus for either regulator.\(^8\)

In the United States, and to a lesser degree in Canada, other levels of government have also begun to regulate drones in relation to privacy. Often these laws purport to reaffirm or confirm that the existing privacy laws of general application apply to drones, including mandating prior judicial authorization for state agents, and that drones should not be used to invade a reasonable expectation of privacy. Some permit self-defensive action against drones over private property.\(^8\) However, the validity of many of these laws can be challenged given the primacy of federal jurisdiction in both countries.

\(^7\) Ibid.

\(^7\) See: https://www.tc.gc.ca/eng/civilaviation/opssvs/flying-drone-safely-legally.html; Transport Canada also released a video on privacy and trespassing associated with drones. The script is the following: “If you’re using a drone in your backyard, avoid flying over private properties or taking photos or videos without permission” https://www.tc.gc.ca/eng/mediaroom/uav-privacy-and-trespassing-7654.html; http://www.ctvnews.ca/canada/transport-canada-to-introduce-new-drone-regulations-1.2732227

\(^7\) In 2016, the Electronic Privacy Information Center (“EPIC”) began a lawsuit against the FAA over their rules governing the use of commercial drones. EPIC argues that the FAA is obligated to consider privacy issues, since Congress directed the FAA to develop “comprehensive” rules surrounding drone safety in the U.S airspace http://www.zdnet.com/article/faa-sued-for-lack-of-drone-privacy-rules/

\(^8\) NTIA best practices can be found at: https://www.ntia.doc.gov/files/ntia/publications/voluntary_best_practices_for_uas_privacy_transparency_and_accountability_0.pdf. The best practices can be summarized as: drone operators are to inform anyone affected by their collection of data (like photographs), securing the data, and limiting how the collected data is used and shared. The best practices also advocate for not collecting data unnecessarily or where a subject has a reasonable expectation of privacy. The FAA takes the approach that it cannot regulate data gathered by drones, as it also cannot regulate data gathered by hand-held cameras. See also: https://iapp.org/news/a/the-faa-de-facto-drone-privacy-standards/; http://www.fcapgroup.com/flcaj/flcaj-articles/new-faa-drone-regulations-little-protect-individual-privacy-rights/


\(^8\) Transport Canada, for example, has a webpage where individuals can report unwanted drone encounters, however it is primarily concerned with drones flying near other aircraft or airports, not with privacy complaints: https://www.tc.gc.ca/eng/civilaviation/opssvs/drone-incident-report-form.html

Having set out some general themes in the approach to drone regulation, I now critically examine this regulatory approach. None of the drone laws in Canada or the U.S. are explicitly gendered – there are no laws restricting or mandating particular gender-driven access to or use of drone technology. However, as Langdon Winner has famously observed, artefacts, like the drone, have politics\(^{85}\) and regulatory frameworks that fail to consider these politics may permit the perpetuation of inequalities through those technologies.\(^{86}\) Even though the laws regulating drones appear to be gender neutral, these regulations can in fact obscure the gendered impacts of the technology.

For instance, the primary regulatory focus on safety presumes that this technology presents the same types of risks (injury and property damage) of the same level of importance to everyone. This approach however fails to take into account the other ‘politics’ of the device – such as lending an operator a degree of anonymity or perpetuating an informational and power imbalance between the operator and the object of observation (who might not be able to locate, or stop, the operator) - which can have implications for different people. It is quite feasible that for some, physical safety from a drone is not the first priority or concern for regulation. Prevention of harassment, intimidation or voyeurism – and the subsequent publication of information emanating from such encounters - might be a higher or equivalent priority, at least at the point of encountering the device.

Furthermore, the regulatory approach does not explicitly distinguish between different social contexts where drones might be operated. While regulations can apply differently in populated versus unpopulated areas (which consequentially recognizes different social contexts) these regulations were not designed on this basis and as previously discussed, are accordingly subject to change. Additionally, drone regulations do not consider the impact of different payloads in different contexts or on different individuals. Regulations instead focus on regulating the artefact (the ‘drone’ as an unmanned vehicle that takes to the airspace), rather than how it integrates into society. Accordingly, the particular politics reflected by the technology go unaddressed.

Of course, as discussed above, the FAA and other levels of government particularly in the United States, have begun to turn their attention toward privacy. This is a positive step in terms of addressing some of the social concerns that drones raise. However, to date this has generated little actual legal protection or recourse, particularly for the kinds of privacy invasion or scrutiny that disproportionately affect women. The next section sets out some initial steps for moving forward.

**SECTION 3 – RESPONSES AND CONCLUSION**

Recognizing that the primary responsibility for drone regulation in both Canada and the United States falls to safety agencies, this section sets out some possible next steps toward recognizing, or at least addressing, some of the differential impacts of drones within the current framework. However, without a broader rethinking of both privacy law (particularly in public space),\(^{87}\) and the system for drone regulation, these recommendations are limited in their scope and impact. In fact, the ultimate solution would be the dismantling of the systems of oppression that

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\(^{87}\) If privacy laws of general application do grow to recognize more of the privacy harms that primarily affect women, this would be a positive development – perhaps one that can be encouraged by greater diversity on the bench. See e.g. Madam Justice Bertha Wilson, “Will Women Judges Really Make a Difference?” (1990) Osgoode Hall Law Journal 507.
lead to these differential privacy experiences, among other inequities and injustices.\textsuperscript{88} But, as a near-term response, this section sets out some preliminary ideas for how we might re-balance the attributes of drone technology, through regulation, so as to address a broader range of concerns beyond airspace safety.

First, regulators can place greater emphasis on developing mechanisms for accountability.\textsuperscript{89} Namely, requirements that help to rebalance the informational and power imbalance between the operator of the drone and the individual encountering the drone, and which subsequently provide an avenue for redress and future prevention. This may admittedly be a difficult task technologically. For example, while drones may be required to bear the equivalent of a licence plate which can aid with identifying the operator – how can regulators ensure that it is visible from a distance or while the drone is in movement? Emitting information from the drone to, for instance, a cell phone application could be useful, but presumes that individuals experiencing negative encounters also own and carry a phone. Similarly, listing all drone flights on a website would be useful, except to those without regular access to the Internet. Providing a mechanism or reporting outlet for drone encounters, or even, a dedicated investigator or mediator, could also further this endeavour though would either be resource-heavy, or potentially ineffective. Professor Michael Froomkin and Zak Colangelo have suggested mechanisms to address the information imbalance between the drone operator and an individual encountering a drone, as a means for reducing uncertainty about the device. For instance, a drone could be equipped with coloured lights or other markers to inform individuals about the drone’s capabilities (e.g., whether or not it is filming).\textsuperscript{90} This may also help to address the power imbalance between the operator and the observed by giving the observed greater awareness relating to the encounter - though still must be accompanied by a recourse mechanism to address the privacy harm.

None of these suggestions definitively address the issue of gendered privacy invasions. But at least these combined factors could begin address some of the attributes of drones that risk worsening the state of public privacy for women.

Regulators can simultaneously focus on increasing public participation in all stages of the regulatory process - developing mechanisms for intervention at both the design phase and in the contexts of sale and use.\textsuperscript{91} One mechanism for this can be to adopt a “critical feminist technology assessment”, extending existing technology assessment procedures by, “first, giving voice to the full range of interested groups in technological design and, second, starting from a critical debate about what and whose needs are to be met, rather than from existing technologies.”\textsuperscript{92} In other words, focus on democratizing the technology from the “outside in.”\textsuperscript{93}

As a final observation, regulators can also adopt policies and targets to enable women to increase their technical competence and access to drone technology.\textsuperscript{94} There are in fact numerous endeavours targeted at increasing women’s involvement in the industry, as well a number of women

\textsuperscript{88} bell hooks, \textit{Feminism is for everybody: passionate politics} (South End Press, 2000)

\textsuperscript{89} Accountability need not and through a feminist lens in particular ought not to always involve state actors and the judicial system: Allen etc


\textsuperscript{91} Faulkner “Technology Question in Feminism” at 91

\textsuperscript{92} Faulkner at 91

\textsuperscript{93} Faulkner at 91

\textsuperscript{94} Faulkner at 91
in prominent positions within the drone industry. However, men still heavily dominate the drone industry. Greater diversity of voices both within and without industry can help to democratise the technology from both the inside and out. However, encouraging women into the industry cannot be the sole or primary solution to addressing the issues raised in this paper. First, it places an expectation on women to accept the system as is and learn to adapt to and within it – a system that some women may perceive as socially harmful. Simply encouraging women to become more involved with technology that is largely shaped by and for men does not necessarily bring about more egalitarian or feminist technology. Second, while becoming increasingly affordable, drone technology is still a luxury to many, who may not have the financial or time resources to dedicate to entering into an industry, particularly out of a ‘gender obligation’. Encouraging more women to become involved with the technology from a technical or policy perspective will be a positive development, but cannot be the sole solution to addressing differential impacts of the technology.

Conclusion

This paper has drawn from feminist privacy scholarship in order to consider some of the potential gendered ways in which drone technology might engage privacy law and norms. The non-exhaustive list of examples has included - revealing that the traditional norms of women’s privacy as rooted in modesty persist today, if not explicitly in the legal framework, certainly in popular discussions of drone technology. Furthermore, this narrative risks undermining the ability of women to assert privacy in public spaces, particularly in response to persistent gendered invasions of their privacy, which could furthermore be exacerbated by the attributes of drone technology. Yet, finally, a purported concern about women’s safety in public could simultaneously lead to greater surveillance by drone technology – both of women, and of other marginalized groups – potentially placing marginalized women in a worse position from two directions. When assessing the Canadian and U.S. approach to drone regulation, in light of these concerns, it becomes apparent that the current approach treats the technology as neutral, rather than as a system embedded with particular politics. Regulatory agencies should place greater emphasis on addressing some of the politics of the drone – for instance, by working to eliminate the power imbalance caused by the drone’s dislocation from its operator (among other possible responses), by bringing more voices into policy and regulatory discussions at the development, sale and use phases, while also increasing women’s involvement in the industry and in the use of the technology. Ultimately, though, the most rewarding solution to many of these concerns will only come from broader social and legal change.

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96 Drone vendors target men: [https://www.buzzfeed.com/zarastone/disarming-the-drone-gender-gap?utm_term=.vbLd20NQ5V#viaXK9nVBE](https://www.buzzfeed.com/zarastone/disarming-the-drone-gender-gap?utm_term=.vbLd20NQ5V#viaXK9nVBE); Men buy 90% of civilian drones. In a meeting of drone hobbyists, all present, with the exception of one individual, were men. Most drone enthusiasts and most civilian drone professionals are men. In a recent drone film festival, out of 330 submissions, only 11 films were submitted by women. Advertisements lack women, or treat them as bystanders. There is an unconscious bias that women do not fly drones: [https://www.inverse.com/article/10294-men-buy-90-of-civilian-drones-and-that-s-big-trouble-for-a-growth-industry](https://www.inverse.com/article/10294-men-buy-90-of-civilian-drones-and-that-s-big-trouble-for-a-growth-industry)  
97 Faulkner