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Gender and Power in Technological Contexts

This chapter will examine the various ways in which we can conceive of gender and power in relation to technology. How do gender and power connect in technological contexts? What does power look like here, how is it shaped and allocated, and who possesses it? What possibilities may exist with regards to reshaping power through acts of resistance in and through technology? In order to explore these questions, this chapter will attend to considerations of gender, power, and technology in relation to labor, focusing specifically on the domains of technology education and work, and activism in technological contexts. Technology itself is a far-reaching term, and there are no doubt opportunities to theorize around the connections between gender, power, and technology across myriad domains. For instance, the labor of self-presentation on social media, the multiple forms of harassment and violence enacted in and through technology, and subjects which perhaps once felt more closely aligned with science fiction than with our current climate such as artificial intelligence, virtual reality, and technologically enhanced bodies all stand as sites ripe for exploration by feminist psychologists.

However, this chapter will begin by considering feminist approaches to gender and power via technology studies, before moving to examine the interplay of gender and power in relation to technology education and work, then finally exploring some of the possibilities and pitfalls new technologies may offer to feminist activists as a tool and space of resistance and protest.

Looking Back: Gender, Power, Technology and Feminist Thinking

In order to contextualize this chapter, it is first necessary to consider feminist approaches to the interplay of gender, power, and technology in a broader sense. When examining some of the rich and varied theoretical literature underpinning feminist understandings of gender and technology, we come across accounts spanning from the wholly pessimistic to relentlessly optimistic.

For instance, Judy Wajcman's writings on feminist technology studies (2004, 2007, 2010, 2011) outline the conflicting positions and frameworks present in historical approaches attempting to conceptualize the gender and technology link. Noting the 'liberal cast' (2011, p. 266) of early approaches, Wajcman draws attention to the supposed gender neutrality of technology, and the assumption that the solution to women's lack of inclusion in technological spheres was simply a matter of promoting equal access to education and employment. Later approaches however saw radical and socialist feminisms offering alternative ways of thinking about gender, power, and technology, seeking to examine the knowledge, culture, and artefacts of science and technology itself, rather than positioning the problem of underrepresentation within individual women. Wajcman (2010) discusses the later assertions that technology itself was intensely bound up with patriarchal projects such as medicine and militarism, drawing on examples of reproductive and in-vitro-fertilization technologies (IVF), noting strong radical feminist opposition to these in the 1980s. In this particular example,

technology has been framed as exploitative, with gendered power relations enacted upon women's bodies through medical control and interference (Unger, 2001).

So then, for radical feminist approaches to technology, gendered power relations were framed as being 'embedded more deeply within technoscience' (Wajcman, 2010, p. 146). However, socialist feminist accounts of technology and science tended to be broadly arranged around Marxist dialogues, with an emphatically pessimistic take on technological advances and what this might mean for women in the workforce. For example, articulating fears that the increasing computerization of work (e.g. office work) would lead to the de-skilling and fragmentation of jobs, impacting more negatively on women than men, with women tending to occupy secretarial and clerical roles (Wajcman, 2004, 2007). Wajcman (2004, p. 27) notes that for socialist feminist approaches, masculinity is 'embedded in the technology itself', considering the historical contexts of manufacturing, engineering, and the industrial revolution. It is argued that technology reflects the designs of men, with machines configured and built around men and their domination of skilled trades. Though technology may be socially shaped, it is argued that this shaping occurs in a way that privileges men and works to exclude women. Wajcman (2004) further argues that this masculine domination of technology is bound up with the equating of skilled work as men's work.

Unsurprisingly, various critiques of these overtly pessimistic frameworks have been raised by feminist technology scholars. Wajcman's writings on technology and feminism highlight potential problems with, for example, the gender essentialism which runs throughout earlier feminist accounts, along with portrayals of women as passive victims of technology (Wajcman, 2004, 2007, 2010, 2011). Works by scholars such as Haraway (1985) and Plant (1997) offered a more optimistic outlook, pointing to the possibility for technology to work in an emancipatory capacity, blurring the boundaries around gender identity, bodies, and established gender roles. Technological developments such as virtual reality and reproductive technologies were framed as offering us the possibility to reshape gender, and thus by

extension, power, in technological contexts and beyond. Furthermore, Wajcman (2011) notes that theories around the networked and global knowledge society (e.g. Castells' 1996, 2010 network society) work to position technology as a valuable and potentially revolutionary transformative tool – a point which is crystallized within considerations of technology as a space and tool for resistance and activism.

However, even these hopeful portrayals of a space where people can transcend norms around gender and the body have not gone without criticism. For instance, Riley et al. (2009) note the importance of bodies online, pointing to work exploring eating disorders in online contexts (e.g. Day & Keys, 2008). More recent work around 'fitspiration' ('inspirational' media content such as user generated social media postings consisting of images and videos pertaining to 'fitness') such as that of Deighton-Smith and Bell (2018), serves to further highlight the failure of technology to live up to its emancipatory potential. Furthermore, echoes of earlier concerns around gendered power relations being embedded within the technology itself can still be found in more recent works such as O'Neil's (2016) *Weapons of Math Destruction*, which speaks to the potential harms that can be wrought by the use of big data and algorithms. It is argued that algorithms, though perhaps at first glance appearing to be neutral and unbiased, have gender, race, and class-based inequalities baked in. Power is distributed asymmetrically through technology, with implications for equal access to education (e.g. through decisions made around student finance, disproportionately impacting those already living in poverty) or fair treatment within the justice system (e.g. through the use of facial recognition software, something where racial inequalities and technology intersect in a deeply concerning manner).

Perhaps most useful then for feminist psychologists interested in unpacking notions of gender and power in relation to technology, is Wajcman's call for a focus on feminist politics rather than on technology itself. Drawing on studies of virtual worlds such as *Second Life*, Wajcman notes that despite possibilities to dismantle and disrupt gender discourse in digital space, any potential is inevitably 'constrained by the visceral, lived gender relations of the material world'. Technology is framed not only

as a source, but also as a consequence of gender relations, with gender and technology being co-produced simultaneously. Wajcman ultimately notes that technological spaces (and by extension, technology) are neither 'inherently patriarchal nor unambiguously liberating' (2010, p. 148). In a similar vein, Locke et al. (2018) echo this cautious and balanced position with their note that social media spaces, whilst undeniably gendered, classed, and racialized, are neither utopian nor dystopian.

Ultimately then, it is argued that the adoption of this balanced and cautious position is crucial in exploring the connections between gender, power and technology. Perhaps most pressingly for critical feminist psychologists with an interest in this area, there is a clear need to embed feminist thinking into the rapidly expanding field of cyberpsychology. With the British Psychological Society recently approving the addition of a new cyberpsychology section (BPS, 2018), the relative youth of and openness towards interdisciplinary working inherent in this field makes it an ideal site to incorporate and strengthen feminist understandings of gender, power, and technology.

The Current Climate: Gender, Power, Technology and Work

Women represent a minority in technology, and although there is some degree of variation and inconsistency across statistics available, a persistent gender gap is present across educational and professional settings. For example, figures from the WISE Campaign (WISE, 2022) report that women make up just 26.9% of core STEM occupations in the UK (encompassing science, engineering, and information communications technology roles, but excluding health occupations and skilled trades). Drilling further down to IT work specifically, women account for just 19.5% of IT professional occupations, and 24.7% of IT technician occupations. In the USA, despite accounting for 57% of professional occupations, women make up just 26% of professional computing occupations (NCWIT, 2019). A similarly disappointing picture emerges when we examine the statistics in higher education,

with women accounting for a mere 16% of computer science graduates in the UK (WISE, 2019) and 19% of computer and information sciences degree recipients in the USA (NCWIT, 2019). West, Kraut and Chew's (2019) UNESCO policy paper, "I'd blush if I could", provides a striking exploration of the persistence and severity of the gendered divide in digital skills globally, reporting declines in the number of women studying computer and information science majors across Latin America and the Caribbean, in addition to higher-income countries such as the Republic of Korea, Australia, and New Zealand. Additionally, their work attends to the complicated notion of the gender equality paradox. Here, we actually see higher levels of gender equality negatively associated with women's participation in technology programs, and the authors highlight the pressing need for more work to be done in order to better understand this puzzling disparity. Ultimately it appears that the statistical landscape is both disheartening and complex, serving to justify the urgent need for more explicitly critical, feminist work in this area.

Especially upsetting when considering the current state of women's underrepresentation in technology is their historical position within the discipline. The earliest pioneers of computing were women, and we must not forget the enormous impacts they had in shaping technology at large. Looking to the history of computing, we find high-profile examples of women working in technology, such as Ada Lovelace, the English mathematician and writer who is widely regarded as the first computer programmer owing to her work on Charles Babbage's planned Analytical Engine, an early concept of a programmable computer. Indeed, Ada Lovelace Day is observed on the second Tuesday of October, seeing various events held worldwide celebrating women in STEM in honor of Lovelace herself. Other names and stories may however be less well known, such as the story of the Electronic Numerical Integrator and Computer (ENIAC) – the first electronic computer in America, which was used primarily for the automation of complex ballistics calculations during World War II. Historian of science Jennifer Light (1999) notes that the two names predominantly attributed to the ENIAC are those of men, in spite

of the fact that close to two hundred young women worked as 'human computers' to work through the ballistics calculations, and indeed six of these women ultimately ended up programming the machine itself. Most importantly, Light (1999, p. 455) argues that this kind of erasure of women from the history of computing has worked to perpetuate myths of women being 'uninterested or incapable in the field'.

However, scholars such as Ensmenger (2015) remind us that the presence of high-profile and pioneering women in the history of technology reflects the early feminization of the occupation itself. Women were deemed suitable for the kind of repetitive and low-wage work that made up computer programming on the earliest computer systems. For a time, computer programming was framed as women's work, as an extension of clerical work or something requiring assumedly 'feminine' talents such as patience and attention to detail. Rising demand for skilled technology workers in the 1960s brought with it a rise in salaries and status, and with this an influx of men. Fine (2011) draws attention to the ways in which the uptake of computers in business and domestic settings contributed to the re-gendering of technology, shifting and redrawing the balance of power. With people such as Bill Gates and Steve Jobs enjoying prominent success, the term 'geek' became associated with technology, and computer programming became bound up with notions of masculinity, science, and rationality.

In response to this current underrepresentation, there has been a proliferation of research, campaigns, and initiatives looking to address the imbalance. Within psychology, the literature often centers around individual differences or mainstream social psychological explanations (see Helgeson, 2017). As such, much of the research and many of the initiatives aiming to address the problem necessitate a closer reading and analysis from critical feminist scholars, as they are shot through with reproductions of troubling postfeminist narratives around gender and work, in particular those which reproduce neoliberal notions of choice, individualism, and empowerment as discussed by Gill (2007).

When examining efforts to explain, account for, and manage the gender gap in technology (and related STEM fields more generally), it is common to encounter the gap being framed in terms of being a 'leaky pipeline', with this being perhaps one of the most dominant metaphors in academic and popular press alike. The metaphor of the pipeline symbolizes the journey into and through STEM fields (moving from education and training to careers in organizations) as flowing through like water through a pipe. Men travel this metaphorical pipeline smoothly, whereas 'leaks' in the pipeline see the loss of women at various points along the journey (Varma & Hahn, 2008). However, this dominant metaphor has been called into question by scholars such as Soe and Yakura (2008), who challenge the representation as being overly simplistic, and as working to screen out organizational cultures in discussions of women's underrepresentation in STEM fields. Additionally, Herman (2015) notes that the pipeline speaks only to a particular kind of smooth, linear (and inherently masculinized) career path not in line with the 'frayed' careers of women in STEM spaces, who are more likely to bear the weight of career breaks, changes, and re-entries. Furthermore, the pipeline metaphor has a clear focus on the 'supply' side of the equation, characterizing women as problematic, and as having let themselves and society down, their status as 'drips' from the pipeline positioning them as failures (Soe & Yakura, 2008). The persistent and problematic use of this model has been highlighted by Vitores and Gil-Juárez (2016), who argue convincingly for a better approach to understanding the gender gap in STEM. That is to say, an approach which does not inadvertently re-inscribe notions of masculinized and linear career paths as the baseline or norm, whilst simultaneously obscuring the lived experiences of women studying and working in STEM fields.

With regards to campaigns and initiatives aiming to provide solutions and interventions, we find similarly problematic underpinnings and assumptions. These may be found in formal campaigns, for example, the heavily criticized 'Science: It's A Girl Thing' video, published by the European Commission, which sought to entice girls to pursue careers in STEM fields by featuring glamorous, conventionally

attractive young girls playing with cosmetics in a laboratory setting (Collins, 2012). UK based Energy supplier EDF's #PrettyCurious campaign encouraged young women to consider STEM careers, yet understandably was criticized for conflating appearance and beauty with achievement in science (Reynolds, 2015). We can also find instances within more informal efforts, such as Mattel's controversial *Barbie: I Can Be A Computer Engineer* book, which saw the popular fashion doll struggling to make her game design ideas a reality, relying on the help of her (male) friends to complete the technical programming work needed to make her game come to life (Ribon, 2014).

These kinds of campaigns and initiatives have come under scrutiny from scholars interested in gender, power, and technology. For example, Faulkner and Lie (2007) have discussed the 'pervasive and tenacious' (p. 162) nature of essentialist and binary understandings of femininity and masculinity present in inclusion strategies. They draw attention to the potential consequences of campaigns seeking to recruit more women into programming and development roles, which emphasize the need for social and communication skills, noting that although there may be some short term benefits offered in terms of increasing participation, in the longer term such initiatives may see women pressed into more peripheral roles where they become responsible for more social, and less technical, aspects of work.

In an evaluation of a UK-based initiative to encourage the engagement of girls with IT, Fuller et al. (2013) levelled criticisms around the misinterpretation of the 'problem' of the underrepresentation of women in technology careers and education. Campaigns and initiatives built around assumptions of gender difference (for instance, around women's 'lesser' capability with, and/or interest in technology) work to reproduce the idea that women are the problem, that they are lacking or deficit in some way, and that their absence in technological spaces can be addressed by 'fixing' something inherent in the women themselves. Furthermore, such initiatives can be criticized as playing into neoliberal and meritocratic discourses around success and power, where anyone can theoretically 'rise to the top', as long as they choose to capitalize upon their innate talents and negotiate the systems and hierarchies of

competition which, in this case, constitute technological workspaces. Crucially, within these systems the notion of meritocracy functions as a kind of 'ideological myth' (Littler, 2013, p. 55) working to conceal structural inequalities. In this space, discussions of gender and gender based inequalities are at best minimized, and at worst rendered invisible and unspeakable (Kelan, 2009).

It seems fair to suggest then, that rather than being wholly empowering, these campaigns may run the risk of being disempowering. Solutions provided may be limited in their practical utility and benefits, instead functioning to reproduce troubling discourses around what power looks like in technological contexts, where power is allocated, and who may be best placed to possess it. As such, these kinds of campaigns and initiatives are in further need of critical reading and analysis from feminist scholars interested in gender, power and technology.

Indeed, some of the campaigns noted above speak to the notion of an 'image problem' for technology work and workers, something which is often cited as a potential explanation to account for women's absence in technological fields (Hayes, 2010; Margolis & Fisher, 2003; Varma, 2007). There is a degree of tension across representations of technology work, with typical constructions of those working in the field positioning them as 'geeks' or 'hackers' (Wajcman, 2007), terms most commonly associated with masculinity (albeit in a less conventional form), poor social skills, and an unhealthy obsession with technology. However, as Proctor-Thomson (2013) notes, there have been efforts to address technology's 'image problem', reshaping the identity of the technology worker into a much more desirable form. Instead of the 'geeks', we may now be faced with 'cool casuals', 'passionate heroes', and 'business professionals' (p. 93). In more recent work from Mendick et al. (2016) the discursive construction of the 'geek celebrity' in young people's talk is explored, with this imagined figure straddling both desirable and undesirable aspects of historic and more contemporary constructions. They note that the geek celebrity

> … holds together contradictions. *He* is both inside of celebrity, through his wealth and status, *and* outside of 'vacuous' celebrity culture, through his talent and enterprise. He is both incredibly wealthy *and* incredibly generous. He has both a desirable lifestyle and intellect *and* an undesirable asociality. (p. 217, emphasis in original)

It is not uncommon to find technology job advertisements touting an array of perks and benefits, good rates of pay, and often offering up the possibility for flexible work schedules and locations. Some may even offer a degree of 'coolness', depending on the specific company or role. As Gill (2002) noted, new media work, which encompasses a wide range of technological roles, is widely considered to be 'cool, creative, and egalitarian'. As such, technology work can be perceived as a desirable career choice, offering a certain degree of prestige and power to those working within it.

However, such benefits may not serve to benefit all equally, and may not truly stand up as 'benefits' when examined with a more critical eye. Indeed, a striking gender pay gap persists across technology work, and progression and promotion may be experienced at a slower rate for women, with Rickett (2014) reminding us that the 'glass ceiling effect' tends to manifest at its most powerful in male dominated workspaces. The cool and fun 'corporate campus' culture (Ensmenger, 2015, p. 43) consisting of hammocks, ball pools, Nerf guns and ping pong tables found in numerous technology firms today serves to recreate the historic dorm rooms and basements where 'geeks' were forged, re-inscribing masculine values in technological work environments. As technology itself facilitates the possibility for a near constant level of connection to our work, the boundaries between professional and personal spaces become blurred, and issues of work-life conflict can start to occur (Messersmith, 2007). As these boundaries between professional and personal begin to blur, so too do the responsibilities of employees and employers around safety, wellbeing, and conduct (Drakett & Kenny, 2018). The positioning of technology work as flexible, offering the possibility for workers to be located anywhere with an internet connection, or to dictate their own hours, or to be casual and informal in countless ways may allow for

the production (and reproduction) of inequalities by closing down talk around gender and other structural inequalities (Gill, 2002). Indeed Gill (2002) points out how the cultural and creative industries in which technology work resides are commonly constructed as meritocratic environments, where dominant discourses of individual capability and effort function to silence discussions of inequality and imbalances of power.

Workers in the creative and cultural industries may well be easier to exploit, as their work is presumed to be all-encompassing, requiring a level of obsession, perfectionism, and personal dedication on the part of the individual (Reimer, 2016). Conceptualizing technology work as part of the creative and cultural industries is perhaps easiest when considering arenas such as video game production, a specific domain in which scholars such as Dyer-Witheford and De Peuter (2006) and Chess and Shaw (2015) have examined the exploitative, exclusionary, and deeply gendered practices at play in the industry. Cultures hinging around long hours, 'bulimic' work patterns of extreme and intense periods of work followed by brief periods of rest and calm, in a boom and bust scenario, are commonplace in these industries, with Pratt (2000) noting that these patterns of work are unsustainable for many employees, tending to continue for a few years before workers begin to worry about burning out, leaving or taking career breaks or sabbaticals.

Related and similarly masculinized work environments such as science and engineering also promote competitive cultures of long hours and overwork, with Herman (2015) arguing that such cultures privilege masculine identity, where cultures of overtime and full-time availability likely function to disadvantage women on a practical level. Perhaps unsurprisingly, women working in such environments may be doubly disadvantaged, with many working the 'second shift' (Hochschild, 1990), on top of fulfilling their duties within competitive and highly pressurized cultures of overwork. Herman (2015) notes that work-life balance initiatives may do little to improve the situation for women working in such environments as they continue to be bound by heteronormative gender roles, despite their well-

intentioned roots. Further to this, motherhood and associated periods of leave may pose a problem for women in STEM, owing to dominant assumptions around linear career paths in this field, or the speed at which technology is presumed to advance, and so forth.

It has been argued then that, for many women, their identities run counter to conceptualizations of the 'ideal' worker in this space. For instance, notions of the 'ideal' worker in technology are wrapped up with assumptions of 'gender neutrality' with Kelan's (2008, 2009) work with men and women in the technology industry in Switzerland providing useful insight into the ways in which gender is produced, downplayed, neutralized, and made irrelevant through workers' talk. Kelan's participants were often keen to present themselves as workers first and foremost, rather than *gendered* workers. However, there was a tension between this downplaying of gender and, for example, the ways in which some women would actively reject 'being made a woman' (Kelan, 2009, p. 178) through their actions, for example by rejecting hyper-feminine modes of dress, or refusing to carry out 'domestic' chores in the workplace. In a similar vein, Demaiter and Adams (2009) noted the tendency of women working in technology to downplay the significance of gender in their workplace interactions, whilst simultaneously and covertly narrating its importance and relevance.

These discursive tensions speak to the power of gender in relation to technology, highlighting its importance in the face of supposed invisibility, and undermining the assumptions of meritocracy which underpin technology work. What possibilities then, if gender is rendered unspeakable, might exist for resistance?

Looking Forward: Gender, Power, Technology and Resistance?

It is sometimes difficult to remain optimistic in the face of such a vast, and often rather bleak, technological landscape. However, adopting a more hopeful outlook, it is possible to find instances of

technology, gender and power converging in a more positive way, with the spaces and tools of technology functioning as a means of resistance, activism and protest against myriad injustices. This is particularly salient when considering matters of gender inequality and feminist activism in online spaces, with projects and movements such as Everyday Sexism and #MeToo serving as examples to highlight the powerful potential of online activism. However, as Mendes et al. (2018) note, the implications of technology for feminist activism and politics are complex and messy at best and warrant further investigation by scholars working across disciplines.

In spite of this messiness however, it is fair to argue that technology itself opens up many possibilities around political participation and protest. New technologies have been found to be useful in offering spaces and tools for activists to connect, helping to signal boost feminism and feminist activism through, to draw on some notable examples, the use of hashtags as means of connecting people and fostering networks and communities (Guillard, 2016; Looft, 2017; Turley & Fisher, 2018), or participation in feminist blogging (Keller, 2016). Indeed, whilst social media spaces such as Twitter are often acknowledged as potentially dangerous and toxic environments (especially for women, and notably *visible* women such as those working in high-status political, media based, or technological roles), they can also offer a range of benefits to participants, such as community building, or offering a source of solidarity and support. It has been argued that it is possible to conceive of digital spaces as 'relatively *safer* and *easier'* for people to participate in feminist conversations, as compared with offline contexts (Mendes et al., 2018, p. 243).

One such example which is illustrative of this this relative easiness, but also of the messiness and complexity inherent in modes of online resistance, can be found in the use of Internet meme-based responses to misogyny and harassment. Whilst some memes may serve to reproduce problematic constructions of gender, serving as examples of 'ironic' sexist humor (Drakett et al., 2018), and others may work to explicitly malign feminism and social justice movements (Massanari & Chess, 2018), there

are numerous examples of the subversion and repurposing of the format in order to, for example, respond to misandry and anti-feminism (Lawrence & Ringrose, 2018). Utilizing the power of humor, internet memes can be an effective and powerful tool for political action, with a growing body of research examining their utility in various political contexts (e.g. Banet-Weiser & Miltner, 2016; Milner, 2013; Rentschler & Thrift, 2015). The relative ease of creation and potential to reach wide audiences quickly should not be underestimated, and it is not uncommon to see familiar examples of internet memes spilling out from digital to physical spaces, adorning placards and posters at offline protests and marches such as the Women's Marches on Washington and their global counterparts (Mina, 2017). However, there is a need for caution when it comes to drawing on the power of humor as part of wider strategies of protest, as participants may run the risk of being dismissed, and their voices not taken seriously (Brantner et al., 2020).

Movements cohering around hashtags on social media have the potential to reach global audiences and open up possibilities to speak the unspeakable (Keller et al., 2018). Hashtag activism allows activists to 'continue the conversation beyond the originating dialogue by creating an identifier or tag for fellow activists', also offering the possibility for tracking and monitoring the development of a movement over time (Stache, 2015, p. 162). So called 'hashtag feminism' can be positioned as a form of discursive activism (Clark, 2016), which can offer feminist activists the possibility for rapid response to specific incidents. Clark (2016) argues that hashtag feminism offers value not only in terms of its potential to provoke material socio-political change, but in its ability to nurture 'more intersectional and open feminist movements' (p. 801).

Consider for example the case of #distractinglysexy. Following the misogynistic remarks made about women scientists by Nobel laureate Tim Hunt, and his subsequent resignation from an honorary professorship (Waxman, 2015), women working in STEM fields shared pictures of themselves at work in labs or conducting research in the field, connecting with each other through the use of the hashtag

#distractinglysexy (Brantner et al., 2020). It could be argued that this particular example of feminist informed hashtag activism served to not only blur the boundaries between professional and personal spaces, but also open up a space for the explicit performance of or 'doing' of gender in a STEM workplace (Kelan, 2009). Through engagement with this hashtag, women could effectively rewrite and subvert the misogynistic remarks which had prompted the action in the first place. In a similar vein, Rentschler (2015) draws attention to the ways in which feminist activists have challenged dominant discourses around rape prevention which seek to blame victims, by subverting the hashtag #SafetyTipsForLadies.

However, writing on #MeToo, Gill and Orgad (2018) remind us of the overwhelming challenges of such campaigns in their relation to gender and power. Whilst #MeToo has seen global uptake, it has also faced criticism for the focus on white western women's experiences. Gill and Orgad draw attention to the potentially exclusionary aspects of the movement, specifically the politics and aesthetics, which function to further marginalize those who do not already occupy powerful and privileged positions. Zarkov and Davis (2018) raise a key question here of exactly *who* is able to participate in the movement. They note that the most visible participants of #MeToo are those who already hold privileged positions of power, e.g. wealthy celebrities, journalists, politicians and so forth. They note that for many women, participation in #MeToo may not be so straightforward owing to issues of access (to social media) or because they may face sanctions for engaging with the movement. Indeed, women who speak out against inequalities on public social media platforms all too frequently encounter instances of harassment, bullying, and violence in online spaces. Turley and Fisher (2018) tread a cautious path in their exploration of 'shouting back' via hashtags on social media, and of particular note is their reminder that the internet does not represent a 'utopia for feminist campaigning' (p. 129). They draw attention to the symbolic and actual violence women face in online spaces, which may take various forms including 'trolling', or rape or death threats issued against women engaging with political or activist causes.

Additionally, they point to issues around the extent to which digital labor (such as engagement with activism, and the management of an online presence) is time consuming and more often than not, unpaid.

Whilst technology work itself is long overdue its #MeToo moment, and indeed at the time of writing this chapter, the games industry was being rocked by allegations of sexual abuse, with many women coming forward to detail their experiences of sexual harassment and violence whilst working in the industry (BBC, 2019), the potential ramifications of speaking out may well be too grave for those working inside such a highly masculinized environment. Whilst access may be less of an issue for savvy technology workers, the sanctions they may face in terms of their professional and personal lives may limit their ability to participate in such movements. Consider for instance the abuse of Anita Sarkeesian, a media critic whose work exploring representations of women in popular culture (including video games, 'geeky' media, etc.) saw her receiving numerous rape and death threats online. Her personal contact information was shared online, and events where she was due to speak received bomb threats and threats of mass shootings (Webber, 2017). In a truly disturbing example of the use of technology to commit acts of violence against women, an online game was created where players could virtually beat up a picture of Anita, rendering virtual blood and bruises over her face (Valenti, 2015).

Jane's (e.g. 2016, 2017a) work on 'feminist digilantism' (a lovely portmanteau of 'digital' and 'vigilantism') offers food for thought to psychologists interested in the interplay between gender, technology, and power. In a recent paper exploring feminist digilantism as a response to the online abuse and 'slut-shaming' of an Australian woman in 2015, Jane (2017b) outlines a host of benefits, and a range of potential pitfalls and ethical issues) in enacting power in this way online. In the face of inadequate responses from relevant authorities and regulatory bodies, Jane (2017b, p. 8) argues that 'a degree of feminist digilantism can be seen as legally and ethically justified as well as socially necessary'. Perhaps most pressingly though, the paper encourages a reflexive approach with regards to feminist

activism online, asking those who participate to consider the ethical and utilitarian implications of their actions. For example, meditation on whether or not actions cross boundaries between activism and vengeance, or whether activism should be limited so as not to 'mirror the perpetrators' (2017b, p.8) is suggested as a key starting point for the interrogation of feminist power and its enactments in this space.

Ultimately then it is worth remembering that notions of 'hashtag activism', 'hashtag feminism' and so forth, can be framed as double-edged swords. While it is important to acknowledge the potential benefits offered by digital participation in political movements, there are undoubtedly questions raised and pitfalls to be aware of, with Wajcman's reminder that 'feminist politics and not technology per se is the key to gender equality' (2007, p. 287) feeling particularly poignant here.

Reflexive, Cautious, and Faintly Hopeful?

Building then from these calls for reflexive and mindful approaches in our digital action, we must also seek to extend this reflexivity to our scholarship. There is a pressing need for researchers to work intersectionally, considering explorations of race, class, and (dis)ability in more nuanced and careful ways. Consider for example, the justified critiques around *whose* voices come to the fore in campaigns such as #MeToo (e.g. Gill & Orgad, 2018; Zarkov & Davis, 2018), or the ways in which race and gender intersect with technology in relation to the disproportionate levels of Twitter abuse received by Black and Asian women MPs, as compared with their white colleagues (Dhrodia, 2017). The neoliberal and meritocratic backdrop which frames so much of the work attempting to explain and/or address women's underrepresentation in technology education and work may serve to further entrench their marginalization, locating blame with individual women and obscuring structural issues which impact on their participation. Many recent works (Drakett et al., 2018; Jane, 2017b; Keller et al., 2018) make the

case for a reflexive and cautious approach to our analyses of gender, power, and technology, presenting wary yet faintly hopeful standpoints more in line with Wajcman's (2004, 2011) technofeminist understandings of technology studies. This careful and considered approach should offer feminist scholars inside and outside of psychology the best possible chance of working in order to better understand, and begin to address, issues of gender and power operating across a range of technological contexts.

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