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WOMEN ON THE BLOCK: A TECHNOFEMINIST DISCOURSE ANALYSIS OF BLOCKCHAIN MEETUPS, CONFERENCES, AND HACKATHONS

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ABSTRACT

In response to the stark gender disparity that plagued blockchain in its early days, a range of 'women in blockchain' initiatives emerged, some more effective than others. Blockchain scenes including 'meetups,' conferences, and hackathons, present ideal sites to observe these tensions. This study is a technofeminist discourse analysis based on participant observations at blockchain events and interviews with women who work in the industry. It demonstrates how women's participation in various blockchain scenes can be enabling or constraining depending on the gender power relations of the event. I propose three discursive frames for analyzing these scenes: (1) gender-blind meritocracy, (2) lean into blockchain, and (3) intersectional inclusion.

Keywords: blockchain; gender; technology; communication.

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1 INTRODUCTION

Blockchain, the decentralized technology best known for powering cryptocurrencies such as Bitcoin, invokes hopeful narratives of revolutionary socio-economic change, democratic values, and meritocracy (Swan, 2015; Tapscott & Tapscott, 2016; Mougayar & Buterin, 2016; Vigna & Casey, 2018). Its anti-establishment roots infused the technology with a 'power to the people' sense of possibility (Nakamoto, 2009). Yet in practice, those possibilities have not yet been equally accessible to people of all genders. Although women have innovated some of blockchain's most important advances (Cuen, 2018), the male-dominated sphere has generated stereotypes of wealthy 'blockchain bros' in its short history (Bowles, 2018). In response to the stark gender inequities in the space, women have grown their ranks through local meetups, mentorship programs, hackathons, and global conferences (Griffith, 2018; Moy, 2018; Miller, 2019), and become more visible at the helm of some of blockchain's most innovative and successful organizations (Peck, 2019). Most recently, celebrities like Gwyneth Paltrow, Reese Witherspoon, and Mila Kunis have used their influence to promote investment in cryptocurrencies and non-fungible tokens (NFTs) to women (Gamerman, 2022).

This empirical study is a contribution to the long trajectory of work that seeks to understand the relationship between gender, technology, and communication. It investigates the gender power relations that enable and constrain women's participation in the blockchain space, through interviews with women who work in the industry, and participant observations at an array of 'meetups,' conferences, and hackathons. These blockchain scenes present fruitful sites to explore the new opportunities for progress in gender equity, as well as the wicked problems tied up in this complex relationship.

According to a study of 100 blockchain startups, only 14% of employees were women, seven per cent of whom were in leadership roles (Custer, 2018). Over the past six years, women's representation as Bitcoin investors has increased from just 1.76% to 14.23% on the same real-time data chart (Ogundei, 2016; Coin Dance, 2022). And despite rapid hiring growth in the cryptocurrency space, the gender gap in recruitment is only getting worse (Banerjee, 2022). Gender disparities in the development, investment, and use of emerging technologies like blockchain negatively affect how the world is made. If contemporary life is made possible through socio-technical networks (Castells, 2000) and very few women are in the control rooms of those networks (Wajcman, 2004), then it follows that useful innovations will be missed. When technology development is heavily male-dominated, the inherent biases make the world less convenient at best, and dangerous at worst, for women (Perez, 2019). Stanford sociologist Shelley Correll (2017) notes that while the academy has amassed a large body of theoretical and empirical literature on how gender inequality is reproduced in professional spheres, there is a need for more research on how to bring about effective, positive change.

This study serves to contribute to this body of knowledge by exploring both enabling and constraining factors for women in blockchain.

Investigating blockchain scenes during the technology's earliest stages offers the unique vantage point of tracing a sociotechnical phenomenon as it unfolds in real time. Emerging technologies facilitate opportunity for new forms of identity, community, and power. And technofeminist scholars such as Judy Wajcman (2007) remind us that gender relations are materialized in technology. For instance, in one example of crypto culture at its worst, at a 2018 Bitcoin conference in Miami only three of the 88 speakers were women and the event concluded with a party at a strip club (Primack, 2018). Since then, advocacy groups and social networks such as Crypto Chicks, She256, Black Women Blockchain Council, and Diversity in Blockchain have emerged as supportive communities rooted in professionalism and entrepreneurialism. In this study, I focus on how gender relations are materialized, maintained, and sometimes challenged in various blockchain scenes. This study pays attention to questions including: *whose voice is heard in these blockchain scenes? Whose knowledge counts? Which initiatives, material or discursive, work to improve or hinder gender equity at blockchain events?*

Blockchain's form and function begins to solidify through the discourses and practices that flow through social networks, both online and place-based. Meetups and other events play a pivotal role in blockchain education, networking, and professional development. They are a key entry point to the technology and the communities within it. To analyze the gender power relations at an array of events attended and described in this study, I propose three discursive frames that emerged from my interviews and observations in the field. Those frames are: (1) "gender-blind meritocracy," a dominant discourse associated with meritocracy and postfeminism, (2) "lean into blockchain," a negotiated discourse associated with liberal, popular and cyberfeminisms; (3) and "intersectional inclusion" an oppositional discourse associated with technofeminism. As a communication scholar, I was particularly interested in how discursive frames about gender and technology are deployed in blockchain. This focus is motivated by the compelling notion that words do more than reflect reality. Words make worlds. Each of these discursive frames highlights how various 'scenes' function in blockchain, as collectivities, spaces of assembly, workplaces, ethical worlds, and key spaces of mediation (Straw, 2015).

2 ANALYTICAL FRAMEWORK

Blockchain is one of the latest developments in the family of information and communication technologies (ICTs). Swan (2015) places blockchain within the lineage of previous major, global computing paradigms and 'disruptive technologies' (Christensen et. al. 2015), following the mainframe, personal computing, the Internet, social networking, and mobile phones. Through the lenses of communication and science and technology studies (STS), ICTs are understood as

both material systems and the social contexts of their emergence, which includes the artifacts used to communicate information, the practices people engage in to communicate information, and the social arrangements that develop around them (Lievrouw & Livingstone, 2006). Similarly the notion of 'scene' invites us to consider the cultural and material shaping of blockchain networks. This study examines blockchain scenes as "*collectivities* marked by some form of proximity; as *spaces of assembly* engaged in pulling together the varieties of cultural phenomena… as *spaces of traversal and preservation* through which cultural energies and practices pass at particular speeds" (Straw, 2015, p. 477). I argue that some blockchain scenes accelerate women's participation in the space at large, while others slow this movement.

A common thread that runs through each of the blockchain scenes analyzed in this paper is mediation, which relies on communication. Our everyday lives rely on mediation as a "transformative process in which the meaningfulness and value of things are constructed" (Silverstone 2002, p. 761). Mediation is dialectical, in that it involves the structuring element of ICTs and the engagement of users, whose power to work with or against the dominant meanings embedded within certain technologies (Hall, 1980) is unevenly distributed across and within societies. I analyze the gendered discourses and practices around blockchain to expose the interplay between the technology's structuring influences and interviewees' agency. Certain blockchain scenes act as "a space of transit between visibility and invisibility" for women in the space (Straw, 2015, p. 483). They are characterized by observability, visual interaction, and urban sociality (Blum, 2001; Casemajor & Straw, 2017). While gender power relations shape all types of spaces, the process is even more observable in these particular scenes.

A meaningful investigation of this dynamic requires an anti-essentialist understanding of both gender and technology - one that can assess the roles of digital networks, structures of power, and lived experience. I draw upon several theoretical lenses, in varying degrees, in order to analyze the meaningfulness of gender power relations in blockchain scenes. Key theoretical concepts from the network society (Castells, 2000), the social shaping of technology (Pinch & Bijker, 1987; Mackenzie & Wajcman, 1999), and technofeminism (Wajcman, 2004) each offer useful analytical tools for chiseling a clear picture of gendered discourses and practices in blockchain scenes. The network society thesis serves mainly as a backdrop for understanding the role of global, digital information flows. The social shaping of technology highlights the social, political, and cultural contexts these networks emerge from. And technofeminism underscores the diversity of ways gender and technology shape one another. What these theories bring into focus is that discursive contentions around a technology are constitutive of the technology itself.

Communication research on ICTs has often been characterized by praise (Jenkins, 2006) or critique (Fuchs, 2013) of technologies and their associated discourses and practices, at two ends of the spectrum. This paper follows the path

of constructivist, interpretive scholarship, which opens a path between these, to explore the cultural mediation of technology (Dunbar-Hester, 2014). The constructivist perspective is not interested in engaging in normative debates about technologies, but rather in examining those debates as research objects – namely, to understand how they co-construct technologies and the meanings we afford to them. Such research comes alongside individuals to understand their everyday practices, and analyze how socio-cultural values are inscribed into technologies, avoiding excessive idealism or pessimism.

Science and technology studies (STS), and the concept of the social shaping of technology (SCOT) that emerged from it, have supported communication scholars in this pursuit (Pinch & Bijker, 1987; MacKenzie & Wajcman, 1999; Boczkowski & Lievrouw, 2008). This school of thought highlights the fact that technologies, such as the electric light or digital networks, are never merely technical - their everyday functions are deeply intertwined with economic, organizational, political, and socio-cultural factors (Hughes, 1993). And, perhaps most important to this study, the theoretical lens of technofeminism draws our attention to the ways that gender and technology shape one another (Wajcman, 2004). It is particularly advantageous to analyze the gendered negotiations at work in blockchain scenes, because although technologies remain somewhat 'plastic' throughout cycles of production and use, the fluidity of the social co-construction process is heightened in the early stages of its emergence (Wajcman, 2004).

Feminist research has been instrumental in deconstructing the binary opposition between designer and user, production and consumption, and technology and culture, to show that the co-construction of gender and technology is pervasively interconnected (Cockburn & Ormrod, 1993; Wajcman, 1991, 2004). As a gender-conscious form of science and technology studies (STS), Judy Wajcman's (2004) technofeminism took insights from cyberfeminism and the social shaping theory of technology, to conceptualize "a mutually shaping relationship between gender and technology, in which technology is both a source and a consequence of gender relations" (2004, p. 7). Wajcman sought to create a path between technophobia and technophilia, to "explore the complex ways in which women's everyday lives and technological change interrelate in the age of digitalization" (2004, p. 6). Blockchain events offer a prime site of inquiry to observe the ongoing co-construction of gender and technology in action. They are instantiations of interpretive flexibility (Pinch & Bijker, 1987) where meaning-making occurs, as the identities of both blockchain and its key stakeholders take shape.

Over the past decade, communication and STS scholars have conducted exemplary social shaping research focused on gendered social relations and ICTs. For example, Ensmenger (2012) traces the rise of 'the computer boys' of the mid-twentieth century computer revolution as an intentional, contentious, human process of building up power, identity, and expertise in American society. In another historical account, Hicks (2017) documents a similar process to show how

Britain discarded women technologists and lost its edge in computing in Programmed Inequality. This paper does not compare gendered practices at blockchain events. Rather, it explores the ways blockchain is used discursively and materially to construct gendered individuals through the social scenes that build, communicate, and diffuse the technology.

Both experimental and discursive research have found that challenging sexism is risky for most women (Ahmed, 2015; Worth, Augoustinos, & Hastie, 2015). As Gill puts it, "the potency of sexism lies in its very unspeakability" (2011, p. 63). Paradoxically, within this postfeminist context, there is a rising public awareness of the need for diversity and inclusion initiatives, among corporate and open technology cultures as well as conferences (Bourke & Espedido, 2019; Eswaran, 2019; Tulshyan, 2016). In tandem, scholars have brought fresh insight to technofeminist and intersectional practices across computing and hackerspaces (De Hertogh, Lane & Oullette, 2019; Savić & Wuschitz, 2018). In *Hacking Diversity*, Christina Dunbar-Hester (2020) investigates local initiatives to include more women and people of color in hacker communities. She concludes that their laudable efforts have nevertheless fallen short of securing substantive equity. The tensions between these discourses, as observed through gender-equity initiatives in various blockchain scenes, are explored in this study.

Scholars have begun to research meetups as valuable sites to study social networking and information-sharing in ways that differ from other spaces like workplaces or online communities. Gina Neff (2012) documents how networking is pivotal to maintaining sociotechnical identities, and that Western tech industry workers are expected to put large amounts of time and effort into this practice. Sessions (2010) and Shen and Cage (2013) show how offline meetups influence the social dynamics of the online communities they are tied to. A 'meetup' is a face-to-face gathering of people with similar interests, often intertwined with and facilitated by digital social networks. These events are typically publicized via email or word of mouth, or publicly searchable on a website like Meetup.com, which enables users to search by interest topic locally and organize regular offline gatherings. Meetups may take the form of regular, informal gatherings in a local coffee shop, or more structured learning events in formal settings. A semi-professional peer group may emerge and meet periodically, as was the case with an invite-only women in blockchain (WiB) monthly drinks events I was invited to attend after meeting the organizer at a conference. Participants weave place-based gatherings and digital networks in order to expand their personal and professional circles, support one another, and share information about events and job opportunities (Wellman et. al., 2003; Benkler 2006; Rainie & Wellman, 2012). 'Women in blockchain' meetups represent strategies outside of the formal workplace that women use to address gender inequities in male-dominated industries. On a tangible level, these events offer professional networking, job opportunities, and skills development in a safe environment. On an intangible level, they also function as feminist

infrastructures of support (Ahmed, 2017) for dealing with challenges and discrimination at work.

3 METHODOLOGY

This empirical study is based on participant observations at 17 blockchain meetups and conferences in Vancouver, BC, as well as 30 semi-structured interviews with women who work in blockchain, located in Vancouver, Seattle, Toronto, Ottawa, New York, Washington DC, Berlin, and Dubai. This multi-method approach allowed me to observe connections between practices and discourses, through my own participation at events, and the interviewees' 'situated knowledges' (Haraway, 1988) in the industry. Through this concept, Haraway argues that people make truth through concrete practices, from particular vantage points. Methodologically, I followed an approach inspired by multi-sited ethnography (Marcus, 1995, 2011). This technique was designed to trace the social shaping of technologies, through pre-planned or opportunistic movement within different settings around a complex cultural phenomenon, such as blockchain scenes in this case.

Participation observations at blockchain events were important to this study, because gender is defined through relationships between people of various genders in particular social scenarios. Gender is not a rigid "analytic category imposed on human experience, but a fluid one whose meaning emerges in specific social contexts as it is created and recreated through human actions" (Gerson & Peiss, 1985, p. 317). The first eight of my 17 participant observations were conducted as part of a collaborative project undertaken by me, two of my lab colleagues, and my PhD supervisor. Our insights from these early observations were published in a book chapter called 'Meetups: Making Space for Women on the Blockchain,' in the edited volume *Blockchain and Web 3.0: Social, Economic, and Technological Challenges* (Adams et. al., 2019). We identified how 'women in blockchain' meetups functioned to resist the hyper-masculine blockchain space, and to foster supportive networks for women in the space. These initial participant observations grounded my sense of their role in the space, informed my interview protocol, and provided fruitful avenues for interviewee recruitment in an emerging, non-institutionalized space.

I conducted 16 interviews in person in Vancouver, Canada, and 14 via Zoom video calls. Participants ranged in age from their 20s to their 50s. Their educational backgrounds spanned a diversity of fields, and ranged from no post-secondary training to doctorate degrees. Some spoke of the accessibility of entering the space precisely because there are no formal educational requirements. In terms of their professional roles related to blockchain, the majority of interviewees worked in business, operations, or communications roles. Other types of work represented by fewer participants each, included technical roles, advocacy work, research, law, governance and security roles. I sought out women's situated knowledges, as minoritized stakeholders in blockchain, to understand how discourses in the space

shape their experience and the technology. Their identities and experiences were diverse, yet their positionality as members of a highly underrepresented group offered them a common vantage point from which to comment on an emerging space as it takes shape.

I coded the data sets in order to identify the most salient themes using NVivo qualitative data analysis software (Saldana, 2015). I then conducted a discourse analysis through a technofeminist lens to make sense of the data. These approaches capture both the theoretical and methodological stance of this study. Technofeminism calls attention to situated practices and lived experience, as opposed to focusing on gendered identity or social structures in isolation (Wajcman, 2004). Discourse analysis takes seriously the role of language as a worthy focus of study in and of itself, to explore how different social positions are made available and negotiated (Gill, 2009, 2018). I then developed a discursive analytical framework, based on three discourses about gender and technology I observed emerging from the events and the interviews, detailed below.

4 THREE DISCURSIVE FRAMES FOR ANALYZING GENDER POWER RELATIONS IN BLOCKCHAIN SCENES

Each of the discursive frames outlined here describes a set of cultural viewpoints that shape a particular blockchain scene. When we study discourse, we acknowledge the central role of language as a social practice that not only reflects but constructs social reality (Schultze & Orlikowski, 2001). This makes for a challenging yet fascinating object of inquiry, as I found in this study. From a critical, feminist orientation, Rosalind Gill (2009) elaborates a discursive analytic model based on four tenets: (1) discourse as significant in itself and not as a means to unveiling the truth, (2) language as constructive in terms of how we move through the world, (3) discourse as an action-oriented social practice, and (4) discourse as rhetorically organized to make itself persuasive. These principles informed the frames I identified.

The discursive frames are: (1) 'gender-blind meritocracy,' a dominant discourse associated with meritocracy and postfeminism, (2) 'lean into blockchain,' a negotiated discourse associated with liberal, popular and cyberfeminisms; (3) and 'intersectional inclusion' an oppositional discourse associated with technofeminism. Following a technofeminist line of thought, I argue that these discourses not only reflect different understandings of gender and technology, but they also fuel practices that shape the very definitions of gender and technology, and the co-constructive process between them. As opposed to studies that focus on how women use certain technologies, this framework focuses on how participants encode and decode discourses in a more dynamic way. They are producers, not just consumers, of the technology. Any analytical framework that treats gender, race, or sexuality as isolated or universal factors is flawed, and masks white heteronormative privilege (Crenshaw, 1990; Landström, 2007; Cottom, 2017). In contrast, feminist

scholars like Wajcman and Haraway conceive of subjectivities like gender as fluid, dynamic, and relational. Through this lens, intersectional feminist sensibilities are political and social mindsets available to people of any gender. Social identities are created in relation with technologies, as "racial formation, gender-in-the- making, the forging of class, and the discursive production of sexuality through the constitutive practices of technoscience production themselves" (Haraway, 1997, p. 35). Further, over the past decade, both information and communication technologies (ICTs) and popular discourse on gender have rapidly evolved - often in deeply intertwined, mutually constitutive ways. For instance, the inclusion of gender pronouns in one's professional or social media profile is one recent way that people of all genders have begun to dismantle the taken-for-grantedness of gender presentation. ICTs have played a crucial role in introducing new understandings of gender diversity that eschew rigid binaries, through the proliferation of newer gender labels such as transgender, nonbinary, agender, or genderfluid (Szulc, 2020). Digitally networked ICTs provide a sandbox in which to experiment, learn about, and express gender.

The first discursive frame is the 'gender-blind meritocracy.' This dominant discourse springs from blockchain's libertarian roots, and continues to flourish in the postfeminist, neoliberal context of tech culture and society at large. It is almost difficult to describe this paradigm since 'technosolutionism,' or the idea that new technologies can and should solve social problems as opposed to political change (Morozov, 2013), permeates contemporary western society. In the gender-blind meritocracy, it is assumed that anyone has an equal chance to participate based on individual effort, regardless of gender, race, class, or other non-merit factor. Therefore, if certain people choose not to participate, it is entirely based on their own choice. According to American survey research over the past several decades, "most believe that meritocracy is not only the way the system should work, but also the way the system does work" (Castilla & Benard, 2010). The authors of the aforementioned study expose the 'paradox of meritocracy,' since they found self-proclaimed meritocratic organizations in particular tend to reward male employees over female employees. Postfeminism goes hand-in-hand with meritocracy, based on the notion that second wave feminism was successful, and is therefore less relevant to a younger generation of women whose sensibilities are shaped by neoliberal ideologies of individualism, empowerment, and choice (Fraser, 2013; Gill, 2011; McRobbie, 2008). In the context of postfeminism, pre-feminist, feminist, and anti-feminist ideas are entangled in such a way that renders any talk of gendered experience pernicious and detrimental to contest (Gill, 2009). Within the 'gender blind meritocracy' discourse, raising issues of gender inequities is viewed as discriminatory. Any suggestion of gender-based discrimination is associated with victimhood, a social position to be avoided at all costs.

The second discursive frame is called 'lean into blockchain.' It takes a 'negotiated' stance in that it aligns with the dominant discourse in terms of its stance on blockchain's role as a revolutionary technology with the potential to transform

society. Yet it does not discount gender as irrelevant. Rather, from this view, women ought to benefit from participation in blockchain, and blockchain ought to benefit from the additional talent and perspectives of women's contributions to the space. It does so without critiquing the technology or the culture of the space. The negotiated frame echoes cyberfeminism's enthusiastic embrace of technology itself as a vehicle for women's agency (Turkle, 1995; Plant, 1997), as well as liberal feminism's belief that the solution lies in helping women to enter the space through increased access, education, and employment. It also carries the message of popular feminism's (Banet-Weiser, 2018) neoliberal vision that women simply need to embrace empowerment and confidence to succeed in the space. This message was perhaps most famously popularized through Facebook executive Sheryl Sandberg's (2013) book *Lean In: Women, Work, and the Will to Lead*. The book only minimally addresses the well-worn dilemma of work/life balance for working women, focusing primarily on how women can take charge of their own careers and be successful. She argues the feminist revolution has stalled, both in terms of external measures of women in leadership, and internal measures such as lack of self-confidence. This negotiated frame views technology itself as liberating for women.

The third discursive frame is called 'intersectional inclusion.' It takes an oppositional, intersectional (Crenshaw, 1990), technofeminist (Wacjman, 2004) stance to critique the structural power dynamics that shape the complexities of embodied social identities and technologies. The term intersectionality, originally coined by Crenshaw to analyze racism and sexism in the legal context, has become the central analytic framework for feminist scholars across various fields to examine the structural identities of race, class, gender, and sexuality (McCall, 2005). This discourse takes a proactive stance toward creating genuine inclusion over performative diversity in the blockchain space. In her book *On Being Included: Racism and Diversity in Institutional Life*, feminist scholar Sara Ahmed writes that the "mobility of the word 'diversity' means that it is unclear what 'diversity' is doing, even when it is understood as a figure of speech" (2012, p. 58). This discourse aims to clarify and promote the value of diversity and inclusion, and ultimately transform the dominant blockchain space. Where a postfeminist perspective would critique the very idea of studying gender in tech work, Wajcman notes that "indeed, the enormous variability in gendering by place, nationality, class, race, ethnicity, sexuality, and generation makes a nuanced exploration of the similarities and differences between and across women's and men's experience of technoscience all the more necessary" (2004, p. 8). Tressie McMillan Cottom calls for 'black cyberfeminism' as a way forward for technology, to focus on the "dimension of power as the mobilization of capital and politics to the benefit of some at the expense of others" (2017, p. 211). Intersectional approaches foreground the connections between social axes to theorize identity and oppression (Nash, 2008; Cho, Crenshaw & McCall, 2013). For example, scholars have shown how search engine algorithms reinforce racism (Noble, 2018), high-tech tools profile, police

and punish the poor (Eubanks, 2018), and computer code encodes inequity by ignoring and thereby replicating racial bias (Benjamin, 2019).

As each of these discourses emerged more clearly from my observations and the interviews, I then used the framework recursively to analyze how the participants used these discourses to navigate blockchain scenes and afford them with meaning. Beyond identifying these distinct frames, I observed how different types of blockchain events correlated with each discursive frame. As I analyzed how discourses were encoded and decoded in different social contexts across the space, I realized the significance of who the event was designed by, and who the event was designed for. The first type of events I examine are the most plentiful and common in the space. They are 'by men, for everyone' meetups and conferences, which are typically male-dominated and sometimes include diversity gestures such as 'women in blockchain' panels. The second type are 'by women, for women' groups and events, such as women-only blockchain conferences or hackathon competitions. The third type are 'by women, for everyone' events, which aim to highlight women's expertise and improve social equity in the dominant space. My findings show how women's identities and experiences are both enabled and constrained, sometimes simultaneously, through participation in blockchain events.

4.1 Frame 1: Gender-blind meritocracy 'By men, for everyone' events

The majority of blockchain meetups and conferences are disproportionately male-dominated, which reflects the gender ratio in the blockchain space at large. Similar to the tech space at large, the sentiment that 'anyone is welcome' at these events rings hollow when surveying the demographics in attendance. They align with the dominant discursive frame of the 'gender-blind meritocracy.' Regardless, they represent an imperative, valuable site for networking and education for anyone's success in blockchain. Each of the interviewees had attended these types of blockchain events for mixed-gender audiences, and identified various benefits and challenges. Interviewee Carrie, CEO of a cybersecurity company in Berlin, captured the interrelation and interdependence of digital and place-based networks in blockchain's global context:

> I watch video talks from conferences, I read blogs or Medium for the latest analysis on certain topics, and I listen to podcasts to get a little bit more in depth. I do a lot of video calls with people around the world. And then another helpful forum would be meeting people in conferences in person – everything from sitting in talks to the one-on-one conversations. I mean, the magic happens between all those things. You get in the one-on-one conversations to really figure out, "How can we do the next thing?"

Carrie's quote illustrates the fluid dynamic between digital and place-based networks. She underscores the impact of the ways in which these online and offline interactions add up to more than the sum of their parts in the phrase, "the magic happens between all those things." Many interviewees toggled back and forth, referencing interactions that weaved through both types of social networks, as they explained how a singular story unfolded. Castells (2001) calls society a 'network of networks.' Meetups and conferences are just one type of network layered over other networks in blockchain. These multiple, shifting configurations have important implications for trust, participation, and power. Social media and texting platforms such as YouTube, Medium, Twitter, WhatsApp and Telegram play a key role in how participants engage daily with the blockchain space. Yet participants also emphasized how the face-to-face nature of meetups and conferences has the potential to deepen, crystallize, and humanize those connections.

Blockchain is a 'convening technology' that opens new spaces and initiates conversations which "can address issues far beyond what it may ultimately be able to address itself" (Baym et. al., 2019, p. 403). Convening technologies attract resources and networks representing various forms of power. Ariana, a blockchain-focused lawyer who spoke at 50 conferences in 2018, valued this aspect of gatherings around emerging technologies:

> Generally the conferences themselves are not useful to me. It's the people who come around the conference. So when I attend a conference, I will do my panel, but then I'm in meetings the rest of the time. Even if the conference content is not that good, I can identify a new idea, or company I can collaborate with.

This point illustrates the importance of participating in embodied, place-based elements of blockchain scenes in terms of collectivities characterized by proximity, and spaces of assembly (Straw, 2015). The traditional 'space of places' exemplified by conferences and meetups may have become less important in blockchain's typical, digital 'space of flows' (Castells, 2000) yet they still play a pivotal role. They are the interfaces between digital and place-based spaces. For 'convening technologies' in particular, these spaces attract people with common interests and facilitate collective decision making in an ongoing, iterative fashion.

Yet some of the blockchain scenes in the gender-blind meritocracy exemplify 'spaces of traversal' that 'may accelerate or decelerate' movements (Straw, 2015), in this case, women's participation. My interviews and observations reflected a narrative that women are often presumed incompetent until proven capable. In addition, women constantly toggle between personal and professional dynamics at male-dominated blockchain events, in ways that men generally do not need to. When men make up the vast majority of attendees, women are seen as 'other' at best, or made to feel unsafe at worst. In the case of one blockchain meetup at a local pub, UX designer Aisha felt so uncomfortable, she ended up leaving before the talk began:

> I went in and there were three people talking amongst themselves. No one paid attention to me, and then one person asked, "Are you here for the event?" And I said, "yes." And they're like, "OK, are you a student?" I was like "No…" [*laughing*]. The assumptions begin from there, you know. And they're like "OK, do you work in blockchain? Are you looking?" Once I said I worked at MetaMask, then all their attention was there. Then they take me to some other room inside, which was really dingy and disgusting to be honest. And I felt so uncomfortable. No one else was there yet, for the event, and I was somewhere inside in a room, and they were talking to me about a game that they started. It just felt very much like a boys' club. I felt weird, so I was like, "I'm going to go."

In this scenario, Aisha was made to feel out of place from the outset, and then progressively uncomfortable enough to the point of leaving before the meetup talk officially began. Besides the talk, she had also hoped to connect with some blockchain developers from CryptoKitties, whom she had seen on the attendee list, about a technical aspect of their analytics. Instead, she introduced herself to them briefly on her way out. They exchanged cards and made a plan to meet at another time. Various interviewees echoed the themes expressed in this scenario. Its hallmarks include an assumption of their ignorance about blockchain, followed by a quizzing about credentials when they reply about their work, and moments of feeling uncomfortable, unsafe, or embarrassed. They may need to make alternative arrangements to achieve their goals in attending the event, as Aisha did, expending additional time and energy.

In many of these conference environments, deep-seated patriarchal gender norms persist. For instance, on a recent trip to Australia, interviewee Elise, a 'women in blockchain' meetup organizer with a master's degree in computer science gave an opening speech at a large meetup attended mostly by men:

> It was over 100 men, and they invited women to this meetup as speakers and participants. And following my speech, there was a panel of six very, very brilliant ladies in the space there. But before the event started, I noticed men were talking and discussing, and one of them said to me, "This meetup is kind of like a strip club, where women are on the stage and men are in the audience." So, you know, that was certainly something that I didn't appreciate.

This panel of women in blockchain was a well-intentioned bid toward highlighting the speakers' expertise. Yet the culture of this male-dominated event reflected open misogyny from some men in the audience. It illustrates the fact that 'add women and stir' initiatives, to put it colloquially, do not work. Women speakers were objectified, and their professional skills easily overlooked. This sexist response to women presenting their expertise on stage was echoed by interviewee Gabrielle, who shared, "If you look at the comments on my TED talk, some of them are horrible. They are very much about the way I look, the way I dress, the way I am, the size of my boobs."

In response to the growing critique of gender inequity in blockchain (Bowles, 2018; Green, 2018; Elizabeth, 2018), organizers of male-dominated

blockchain events have made various strides toward diversity and inclusion. These include a movement against all-male panels, as well as the rise of 'women in blockchain' panels. In addition, networking receptions for women, tagged onto larger conferences, have become more popular. But these typically involve an additional cost, or what some participants referred to as a 'pink tax.' These are strategies for addressing gender inequities in the dominant space, some more effective and well-received than others. Each of these gender-conscious initiatives involves a double-bind for women participants. They openly acknowledge the gender gap, which is important, yet they can also work to 'keep women in their own lane.'

One enabling act that emerged from my observations and interviews for promoting diversity in male-dominated spaces is simply boycotting attendance at - or moderation of - all-male panels. The growing movement against all-male conference panels, sometimes nicknamed 'manels,' has received support by many men and women across business, tech, and academia. April, the CEO of a compliance consultancy shared:

> I have publicly stated that I'm not going to events that do not have any female or non-white speakers, because you can't tell me that you can't find experts. Like, if you're trying, you will find them. We're fucking legion at this point. So when I get the invites to them, I'll actually respond and say, "Hey, this is all male and pale, and you probably need to address that." And the weirdest, most common response is, "you should come and join said panel." And it's a panel on healthcare [*laughing*]. You should probably look at my bio, and then find a woman who's an expert on healthcare.

April expressed bewilderment and frustration at this stubborn 'blind spot' in the 'gender-blind meritocracy' discourse. Such reactionary invitations from conference organizers only reinforce the stereotype of the 'token women or person of color' on a panel, who is invited mainly to fill a representation gap that was pointed out. Where 'diversity' initiatives are often associated with attempts to improve the optics of an event, 'inclusion' efforts are less performative and more qualitative in nature. The difference has to do with whether there is a genuine invitation for the panelist's expertise to be heard and respected, versus simply improving the representation optics of the event. Within the gender-blind meritocracy, inclusivity efforts are often derided or viewed as unnecessary pressures to be politically correct.

On the opposite side of the spectrum from the all-male panel is the 'women in blockchain' panel. In comparison to other panels, which tend to focus on a particular blockchain-related topic, this type of panel is curated based on the participants' gender. While the discussion may involve their various types of professional expertise, the discursive framing of the panel highlights this one aspect of their identity. The conversation often involves the question 'what is it like to be a woman in blockchain?' Well-intentioned, WiB panels are problematic on both symbolic and material levels, which reinforce one another.

Symbolically, 'women in tech' (WiT) labels frame men as the default experts in the field, and women as a separate category of professional in the field. The problematic discourse here has both symbolic and material implications. Mariann Hardey critiques "the straitjacket of the WiT label as a status characteristic" in the social construction of gender difference in professional workspaces (2019, p. 44). She argues that the label's origins, from mainstream media discourses intended to disparage women's individual and collective worth, limit women's opportunities to get outside the stereotype determined by its use. This reflects Wendy Faulkner's (2009) concept of the 'in/visibility paradox' in which women in engineering workplace cultures are highly visible as women yet invisible as engineers.

Interviewee Jessie, a financial advisor and meetup organizer in New York, recounted a story about WiB panels, in which she flipped the narrative on its head to show how tone-deaf the concept can sound to the women featured:

> I was in LA at a conference, and they had a women in blockchain panel with six or seven women on stage. Someone I knew was moderating it, and she said "It was so hard to moderate it, 'cuz it wasn't even curated. It's just 'cuz they were 'women in blockchain.'" And the organizer at one point asked me, "What did you think about the 'women in blockchain' panel?" And I said, "how would you feel if you walked into a panel and it was 'short, bald white dudes in blockchain'?

On a material level, 'women in blockchain' panels are problematic because they are curated based on gender, and not on the speakers' expertise. Therefore, as Jessie notes above, they tend to be less cohesive or informative. They offer women a small space to be visible, without sacrificing a spot on a panel about a more serious, important, or technical topic. Instead of the well-intentioned initiative of highlighting women's expertise it purports to be, these panels can be experienced as a mechanism to keep women 'in their own lane.'

4.2 Frame 2: Lean into blockchain 'By women, for women' events

Beyond the blockchain boys club, gatherings designed 'by women, for women' represent a significant, emerging movement shaping the space (Griffith, 2018). Larissa Petrucci categorizes gender-inclusive meetups as "out-company strategies that women and non-binary people take to address gender equality in male-dominated and professional industry" (2020, p. 546). These stand in contrast to the many in-company diversity initiatives that have become a popular presence in organizations, yielding limited results. 'By women, for women' events in blockchain serve to help women develop their own social infrastructures, and to progress in the industry at large. This exemplifies yet another feature of blockchain scenes: "they provide systems of identification and connection, while simultaneously inviting acts of novelty, invention, and innovation" (Woo, Rennie & Poyntz, 2018, p. 288). That is, they provide both an anchor of familiarity and belonging, as well as an alternate vision for how work in blockchain might look and feel.

Many interviewees had experienced these types of blockchain meetups and conferences as meaningful networks of personal and professional support and resistance to male-dominated tech culture. On one hand, these groups and events represent a corrective response toward the hyper-masculine status quo of the field. Women have taken the proactive step to 'make a space of their own' to learn, lead, and network. On the other hand, they can also be seen as complementary networks that increase the resources and talent of the overall, dominant space. These events are representative of the gender-conscious 'lean into blockchain' discourse. Yet, as with events in the dominant space, they are not considered universally valuable by women who work in blockchain.

At these events, women's involvement in blockchain is framed as advantageous both for their own professional success, and for improving the quality of the technology itself through greater diversity of talent. In this sense, blockchain offers value on both individual and collective levels. 'By women, for women' events range from 'blockchain 101' education and competitions, to private socials and full conferences. Each of the gender equity initiatives described all three frames may be loosely associated with different, overlapping forms of feminism, but they all take place in the broader postfeminist social context. Across these contexts, I observed belief in 'trickle-down feminism,' or the idea that 'once a few women break the glass ceiling and achieve prominent positions in business and politics, this power will trickle down the ranks and empower all women' (Kennedy, 2013, p. 6). This idea is demonstrated in some scenarios described below, and challenged in others.

I named this frame 'lean into blockchain' based on one of the stories I heard in my interviews. Part of Sheryl Sandberg's 'Lean In' (2013) philosophy involves women's active involvement in forming local 'Lean In Circles' as part of the material network of women supporting women in the workplace. Interviewee Miranda founded a 'Lean into Blockchain' meetup group to do exactly this:

> It brings together women that are actively working in the blockchain space, leading blockchain companies, or just passionate about the space. And we meet on a monthly basis to talk about various technical topics, to network, and to kind of support each other in our explorations in the tech space. We've had one woman actually be hired by another woman in our group who leads a cryptocurrency algorithm trading platform. So we've been able to kind of concretely support each other in our career pathways, which is really, really exciting.

Miranda describes how these types of 'by women, for women' groups can be personally supportive and professionally productive. They exemplify the ethos of the 'lean in' discursive frame, which is to equip women with the skills, confidence, and connections to succeed within the dominant space. Faludi (2013) argues that these circles promote individualistic approaches to organizational equity, by aligning feminist and neoliberal values.

Women's involvement in 'by women, for women' social networks is key to their overall success within the dominant professional sphere. Recent research by Yang et. al. (2019) shows that while both men and women who occupy central

positions in their social networks are most likely to achieve greater prestige and pay at work, women in particular also had to have an inner circle of close female contacts to achieve these success levels, even if they had similar qualifications to the men in the study. My findings on WiB groups demonstrate the value of precisely these social networks. Since women often face cultural and political hurdles in tech that remain subtle but pervasive, they benefit from the chance to share private information about blockchain organizations' attitudes toward women, opportunities in the space, and hazards to avoid.

According to the data, one of the top reasons participants valued WiB events was their sense of a comfort zone or non-threatening women-only space to connect about blockchain and other similar interests. Facilitating these 'infrastructures of support' among women is a prime example of the practical solutions Sara Ahmed (2017) outlines in her book *Living a Feminist Life*. These networks connote several assumptions, as described by Alice, who had attended various WiB meetups in Vancouver, Oakland, and New York:

> There's sort of an edge that 'for women' groups have, and it's an assumption of inclusion instead of 'prove something to us right now.' Because I've been in those environments, and the contrast is that you can just let your guard down. Just a feeling of solidarity. Why I'm mentioning it is because at other tech events, or most male-dominated areas, there's always kind of the itching question of "is this for work? Or are they trying to hit on me?" So you can kind of let that go a bit more.

Alice sought out WiB meetups as ideal spaces to meet like-minded people as she visited different cities. Many participants echoed an appreciation for the sense of ease found within these groups, based on the assumption that attendees are generally there to support, encourage, and connect one another to new opportunities. Attendees can worry less about the layers of social labor they need to toggle between at other professional or meetup settings. For many who are the only women at their workplace, they look forward to talking shop in an environment where they are not the 'other' in the room. Their sense of relief highlights the gendered micro-interactions of everyday social life that require additional social labor for women in the dominant blockchain scene. While most blockchain scenes in this space would view their lack of specificity in terms of who the event is designed for as an open stance, women's experiences demonstrate how this lack of formal definition may become an additional burden to some.

'By women, for women' events bring clarity to the attendees' expectations of the scene. For example, Alice conveyed that after working all day as the sole woman on her team, she would think twice about whether to go to a male-dominated blockchain meetup, "even if it wasn't always overly 'bro-y,'" or hypermasculine in its social context. The prospect of potentially debating issues with people who view the space through the dominant lens is a form of additional social labor that takes a psychological toll: "I kind of save my energy in case I would have to get into those conversations. I don't want to 'work' everywhere I go." In a

compelling conversation on hackerspaces and the human condition, Gabriella Coleman and Petar Jandrić discuss how "structurelessness is a limitation on egalitarian-like spaces," such as blockchain events, due to the inevitable shift toward hierarchies of social power that often go un-checked (2019, p. 545). They suggest that even egalitarianism spaces such as anarchist collectives require procedures, vigilance, and ongoing moderation.

Consistent with the broader postfeminist social context of the moment, I found that many of the women who organize or attend women in blockchain meetups and events would not necessarily consider themselves feminists, activists, or organizers (Bobel, 2007), even as they pioneer work that aligns with precisely these values. They view themselves primarily as individuals aiming to further their careers. This reflects the contemporary ethos of 'networked individualism,' which shifts the primary focus from social groups, organizations, and institutions, toward individuals as the primary units of connectivity (Castells, 2001; Wellman et. al, 2003; Miyata et. al, 2005). The rise of social media, in which each person is a switchboard between ties and networks, is a prime manifestation of this. For example, interviewee Anna founded an informal, invite-only, monthly gathering of women who work in blockchain, averaging around ten attendees at each event. Participants shared local blockchain information, 'asks and offers' to do with hiring or switching jobs, and requests for speakers at events, both in person and via email. These events provide a safe space for networking, and a welcoming platform for women to share blockchain expertise. Yet the social ties that bind these WiB groups are often rooted in their instrumental value for building their careers and affinity group networks (Joseph, 2013).

The data showed that the founders of WiB groups were confident and capable in their own tech or finance careers, and none of them had originally aspired to cultivate such communities. Rather they pivoted, paused, or added it to their primary line of work, out of a sense of necessity to grow their networks and help other women in the space. They shared the dominant view that blockchain is a revolutionary innovation, which motivated them to ameliorate the gender gap for different reasons including: advancing women's careers opportunities in the early stages of this emerging tech, improving the diversity of the field so that the technology is developed as wisely as possible, and promoting greater blockchain adoption by exposing a wider demographic to its benefits. Without a clear roadmap or plan, most of them simply sought to create more space and opportunity for women in blockchain, each with their own focus, style, and goal. This is a good example of 'enacting everyday feminist collaborations,' whether or not they consider themselves feminist at all, through practices such as reflexive growth, proactive improvisation, and co-learning partnerships (Yang et. al., 2019).

That is precisely what Jessie did when she and a co-founder swiftly launched the 'Women on the Block' conference in New York in 2018 (Moy, 2018). Over 50 women in the industry gathered to present their expertise on topics such as raising

capital, creating startups, and legal issues, with proceeds going toward a charitable fund to support women and girls in technology:

> I was busy with my own work, but then I accidentally co-founded Women on the Block. It was the first conference that featured female thought leaders in blockchain. I guess it was making a statement: women exist in this space. And it went bananas, right. It was a super duper success. Congresswoman Carolyn Maloney came. It was all volunteer. Because I think it was a reaction to the conferences that men were dominating, and the after-parties at strip clubs. It was about doing something, instead of just talking about the problem. My philosophy is like, I'm not going to ask for permission, I'm going to try to make it happen.

Although they may sound similar to WiB panels, 'by women, for women' events represent a distinctly different set of gender power relations. On WiB panels at male-dominated events, women are invited based primarily on their gender. At a women's-focused event, women are invited primarily for their professional expertise. At these gatherings, there is no need for a WiB panel. Gender is, ironically, taken out of the equation for a moment. There is no need to overtly discuss the gendered experience of working in the field, so more attention can be given to professional and technical conversations.

While some 'by women, for women' groups focus on connecting women who are already working in the blockchain field, others focus on the role of education and information for blockchain beginners of any age or stage. This work addresses the often-debated 'pipeline problem' of equipping more women to apply for the burgeoning number of jobs in the space. For example, CryptoChicks is a non-profit organization focused on educating women and youth about blockchain, with chapters in Canada, the United States, the Bahamas, Pakistan and Switzerland. Its founders, women with extensive education and experience in technology, formed the group after installing an Ethereum wallet on one of their computers. They were excited by the concept of blockchain, but felt that the process should be more user-friendly, and more widely understood by women in particular for it to be successful. Their non-profit achieves this by running mentorship programs and idea incubators such as 'CryptoChicks Hatchery,' and hosting conferences and hackathons exclusively for women participants.

A hackathon is a design sprint event, in which teams of computer programmers, graphic designers, project managers, and domain experts collaborate intensively on projects, to create the best functioning software or hardware by the end of the event. Blockchain events including hackathons tend to be heavily male-dominated. Brooke (2020) recently conducted a study of gender performance and boundary-making at one of these types of hackathons. By participating in the hackathon with teammates over an intensive 24-hour period, she observed through the sharing of memes and ironic jokes, that gender is the mediator of legitimate technical knowledge in these spaces. Her study argues that sexism is a fundamental part of tech culture. In contrast, the CryptoChicks hackathons are events designed 'by women, for women,' which also include mentors and influential judges of all

genders. Hundreds of CryptoChicks participants have been hired in blockchain and AI, or started their own businesses in the space.

One aspect of liberal and popular feminisms associated with this negotiated frame, that has been heavily critiqued by third wave feminists, is the idea that women need more technical skill and confidence to succeed in dominant, meritocratic spaces. But my observations and interviews reflected how important each of these elements are. Elise from Crypto Chicks described the differences in gendered socialization in relation to technology:

> We're not trying to drag women into it. We're just telling them about the technology and teaching them how easy it is. What I see, because we do events sometimes for men as well, is that men don't even think about it. Sometimes they enter the competition without even having any doubt that they can do it, right? First they enter, and then they think. Women though, I have hundreds of emails from them, and they're asking "Did I do this right?" or "I think maybe I'm not ready, maybe I'll do it next year," this kind of thing. So it's not that they're not interested, it's just that they're not sure. It's the mindset.

By encouraging women in these scenarios to participate whether or not they feel qualified, CryptoChicks has been successful in promoting education and opportunity for women in the space. They reassure participants that they do not need coding skill to compete in a hackathon, since people work in teams with different roles, including business, communication, or legal aspects of the innovation. The quote above illustrates the work necessary to dismantle well-worn, binary perceptions about gender and technology – not only to do with stereotypical perceptions about who is an expert in tech, but personal, internalized sociocultural norms and expectations. 'By women, for women' events can help to rewrite the script, in terms of individual and collective perceptions of women and technology.

Although the excerpts above demonstrate the immense value of 'by women, for women' gatherings, these spaces are not universally useful to women working in blockchain. The intersectional challenges of finding a meaningful affinity group can often be overlooked in this emerging movement. Some interviewees indicated ways in which these groups were problematic, or not meaningful for them at all. Just as women have often been sidelined in the dominant, male-dominated space, the voices and experiences of women of color, LGBTQ women, disabled women, transgender, and non-binary folks tend to be sidelined within mainstream WiB circles. They are often dominated by white, straight, cisgender women. Recent research has shown that a narrow focus on gender in gender-inclusive meetups can result in centering whiteness – even when intersectionality is stated as a goal in their mission statement (Dennissen et. al., 2020). Practicing intersectionality remains a challenge for many 'by women, for women' groups in blockchain. Meaningful affinity groups are not created based on one-dimensional similarities in gender. Age, race, sexuality, professional role, and level of blockchain expertise are other axes of difference that matter. For example, as programmer Bailey reflected:

> I haven't - bizarrely actually, being a lesbian - found women-only spaces to be particularly useful, I guess? 'Designed by women for women' is great if you want to talk about certain blockchain topics or gendered experiences. But events that are explicitly for networking like the drinks nights, I don't find I get a ton of value because I'm often the only technical person there. So even talking about the sort of work I do, I may as well be speaking a different language, because I'm in a totally different area. If I'm going to a conference, it's probably a technical conference. I want to talk to people who could have an impact on my thinking, or I could have an impact on theirs, which is orthogonal to their gender.

In Bailey's scenario, shared gender does not equal shared experience. These groups do not provide a path to the types of support or resistance that might be most useful in her day-to-day work in blockchain. Most of the women's meetup spaces in this study were dominated by those in business, communication, or operational roles. This highlights the intersectional challenges related to finding belonging among these groups.

In terms of racial inequality, women of color make up their own minority group within the WiB minority group. Several of the interviewees had helped to launch 'by women for women' spaces that create more meaningful affinity groups for themselves and others like them. For example, Taylor, an entrepreneur and consultant with a doctorate in public health, is a key stakeholder in a blockchain group specifically for Black women and girls:

> I think blockchain is a field where there can be silos. A lot of times you start seeing the same faces, same people, same voices. And so the goal with Black Women Blockchain Council is to create a platform to give women of color access to funding, to create funding, as well as more opportunities to work together. It's a way of elevating those of us who are already working in the space, as well as those who are coming up or unaware of what blockchain is. We're trying to build an entry point to get more women involved, especially women of color. Utilising their current levels of expertise in business, law, or science or health. All these different areas that play into the future of blockchain.

Black Women Blockchain Council serves to educate and promote individual Black women and girls in blockchain and Fintech (financial technologies) using blockchain, as part of its overall goal to promote social and economic inclusion. They support the development of cryptocurrency as an important tool for eliminating traditional barriers to wealth creation, which disproportionately affect Black communities. The group's monthly newsletter features news and articles written by members, educational resources, and links to work by Black blockchain thought leaders such as Isaiah Jackson's (2019) *Bitcoin and Black America*. This race- and gender-conscious discourse, in reference to Bitcoin's pseudonymous inventor opens up new possibilities for what blockchain can mean for stakeholders who are often made to feel marginalized or minoritized in the space.

Founders of WiB meetups and conferences aim to cultivate networks of support, education, and resistance, to increase the quality and quantity of women's participation in the space at large. As a secondary goal, these groups promote

awareness that a more diverse blockchain culture would increase the technology's adoption, usability, and applicability. But these discourses, commonly circulated within WiB groups, are often dismissed or overlooked in the dominant space. The vision to bridge this gap is seen in the third type of event I observed, 'by women, for all genders' events. Meetups and conferences of this type represent a pathway for what a more genuinely inclusive blockchain space might look like, and how this might affect the technology and society at large.

4.3 Frame 3: Intersectional inclusion 'By women, for everyone' events

Blockchain events that exemplify the third, oppositional discursive frame, 'intersectional inclusion,' include those designed by women, where people of all genders are welcome. The names of these events may or may not include anything about gender or diversity. Yet the hallmarks of these gatherings include: (1) a heightened sensitivity to intersectionality (Crenshaw, 1990); (2) a stance of proactive inclusion that amplifies the voices of women, racial minorities, non-Western perspectives, and LGBTQ experts in blockchain; and (3) a vision for transforming the dominant blockchain space, motivated by social justice as opposed to 'adding value.' Acknowledging the importance of intersectionality is not a way of saying we ought to consider race, class, and (dis)ability *as well as* gender - it is to admit that we do not properly understand how gender operates unless we meaningfully engage with a wide array of other social axes. Catharina Landström (2007) articulates this in her paper on queering feminist technology studies, critiquing the habitual reproduction of heteronormativity in the tech communities studied as counterproductive to the feminist aims of this theoretical approach.

Participants grounded in this school of thought recognize various axes of social inequity and seek to improve the blockchain space, and society at large, by ameliorating them. In this sense, these types of blockchain scenes involve "a transformative work carried out upon materials and resources" (Straw, 2015, p. 479). I had not heard of these types of groups or events before conducting this research. Even though they make up the smallest ratio of the types of events I studied, 'by women, for everyone' gatherings represent an important signal for progress in the space. These types of meetups and conferences aim to cultivate a more sustainable, equitable blockchain, through proactive efforts toward genuine inclusion. They are designed to break out of the silos of women-only spaces. They do so by rallying the education and support of male allies to promote gender inequity in the dominant space, and actively gatekeeping toxic patriarchal behavior out of these inclusively designed spaces. According to Ahmed (2017), to build a fair and equitable world, we must first critique the problematic dwellings that have been built, and then start to envision and build new ones as a hopeful collective.

Acknowledging gender inequity is a crucial first step to addressing it. Even in domains where women have reached gender parity in terms of representation,

gender bias persists in terms of women's quality of experience and opportunities for leadership – and this is perpetuated most often by those who believe it is not happening (Begeny et. al., 2020). Stakeholders in the 'intersectional inclusion' frame see this as a current problem to be solved in blockchain. As third wave feminists have highlighted, gender inequity requires more than the collective action of women. It must also include men who promote and exemplify gender equity in the dominant social sphere. In contrast to the prevailing postfeminist milieu, which aligns more easily with meritocracy and neoliberalism, third wave feminism argues for the active promotion of intersectionality, equal pay and opportunity for women, and the dismantling of rigid gender norms and binaries that harm boys and men as well (Finneman & Volz, 2020; Heywood, 2006). Blockchain events that exemplify this discursive frame are designed to amplify women's expertise and welcome men as allies and advocates in order to transform the dominant space.

As Wajcman contends, "new technologies may be 'epistemologically open,' but many of their current forms are similar in their material relations to pre-existing technologies" (2004, p. 75). In the case of blockchain, its early social infrastructures are rooted in the historically male-dominated cultures of tech and finance. These types of events aim to critique and transform the dominant space, in a particular way that 'by women for women' groups are not designed to focus on. Since critiquing the dominant space is a risky move for those who are already marginalized in the space, influencing change requires a strategic, palatable approach. This is evident in the way one meetup founder described navigating through the dominant 'gender-blind meritocracy' in blockchain:

> I will say that it is a very complicated issue. You can't convince someone, right? They have to see it. And even for me, it wasn't until I got into the space, and it was all young dudes. I'm like, this is crazy. This is like 30 years ago with the Internet. And yet, I think it's wrong to accuse people of being 'exclusive.' No one's going to react well to that, so let's stop doing that. 'Cuz we know the response is, "It's an open invite, if you don't want to come, that's on you." Well, yes, but that's the problem right? It's not that you're being exclusive, you're just not being intentionally inclusive. And if we believe in this technology, and we think it can impact the world for the better, and we want to stay in this space, then we need to be intentionally inclusive.

Organizers of blockchain conferences often defend their male-dominated speaking rosters by arguing that no women or people of color applied to present. Yet with the rise of diversity and inclusion awareness over the past several years, organizers of the biggest and most popular tech conferences, including WebSummit, CES, and TechCrunch Disrupt, have begun to actively research and invite a more diverse line-up of speakers. They do not rely on inbound applications. They make outbound offers. This stance is predicated on the understanding that white and Asian men are most often afforded these types of opportunities in blockchain, and "if women of color and non-gender conforming immigrants had the same opportunities and benefit of the doubt, they would be just as well known" (Kostecki,

2019). This discursive frame reinforces that greater mindfulness in curating speaker line-ups is necessary to avoid perpetuating an echo chamber of speakers.

Jessie illustrates the difference between speaking opportunities in well-established industries like finance, versus emerging spaces like blockchain where she has advocated for intersectional inclusion:

> I hear women say, "who cares about gender, just do the work, you'll get recognized." But again, it's about intentional inclusion. So what I would say to them is, I was on Wall Street in structure product for 20 plus years. And I had a very good reputation. All the sales guys came to me. I knew what I was talking about. Of all the conferences I went to, I got stuck with meetings 'cuz I was also doing investor relations. Not once was I asked to be on the panel. I'm in blockchain for less than two years, and I've been on stage at the US Chamber of Commerce.

There is a hopeful sense that things could be different if advocates intervene to welcome more types of people and their situated knowledges (Haraway, 1988) to the space. This hopeful sense speaks to the fact that blockchain's interpretive flexibility is still perceived as malleable in these early developmental stages, and not yet stabilized or closed.

When men are invited to join 'by women, for everyone' meetups, conferences, or hackathons, the typical gender ratio of blockchain meetups is inverted. For instance, one participant involved with the Crypto Chicks describes how this dynamic operates at their hackathons for women:

> I mean four years ago, there were no women. You'd go to a conference with a couple thousand people and there'd be like… three. We didn't even make up one percent. So now when I go to events globally, it's significantly better. You do have young women coming into play. It's still predominantly male, however it's not as skewed as it used to be. Our hackathons are all-women blockchain teams, but the mentorship is diverse. We have a lot of guy mentors so it's actually really great to see that kind of technology transfer.

This participant describes how their hackathons have helped to flip the typical gender ratio at blockchain events and to incorporate the important element of male allyship. This is not a dynamic that happens spontaneously based on the number of women in the room, but through intentionally inclusive design. As a contrast, when discounted tickets are sold to women to increase their numbers at a male-dominated tech conferences, it fosters a useful but different dynamic. At events like the Crypto Chicks hackathon, the social conditions are intentionally designed by and for women, along with the support of male allies. These gatherings present new alternatives for what the blockchain space might look like.

The simple, radical act of women designing their own events, and featuring women as knowledgeable speakers on blockchain, alters the typical narrative of who is seen as an expert in the field. Blockchain events organized and headlined by women, are usually decoded as 'events for women,' even if they are encoded 'for everyone,' and the intended audience is people of all genders. When women

organize blockchain events for other women, the dominant discourse is not challenged, so there is typically less backlash. But when women position themselves and other women as top speakers in the dominant space, they are more likely to receive an equally bold sexist response from the more patriarchal corners of the field. Sarah Banet-Weiser (2018) details how displays of popular feminism are swiftly and harshly met with displays of popular misogyny. Interviewee Kacia, a project manager at a crypto mining company, recalled the reaction to one well-known blockchain event that breaks this mold as a 'by women, for everyone' conference:

> I would say one of the stand-out events that I went to was Crypto Springs, which was in Palm Springs. It was made by women, and it wasn't necessarily for women, but I think in a way it became that because of the speakers that were brought on. However, there were definitely male attendees. I would say about 20%. The 'crypto bros,' which we like to call them, which are just the headstrong crypto enthusiasts that you can't get away from on Twitter, they were hating on the event a lot at the early stages because the branding had some pink in it and the speakers were female. I think it was about 30% male speakers, 70% female speakers. And the founders of the event were simply saying, "these are the most influential speakers that we see in the industry right now, who can talk to projects that are making moves and technology that's innovative, so this is what we're doing." And the crypto bros were not having it. They did not want to accept that as reality. They wanted to say that it was discriminating against them and all this bullshit.

This reveals both the ground-breaking nature of 'by women, for everyone' events, and some of the thorny backlash associated with them. They challenge the male-dominated status quo, as women position themselves as influential voices in the field instead of staying in their own self-contained groups. As Wajcman argues, "to be in command of the very latest technology signifies a greater involvement in, if not power over, the future" (2004, p. 12). Since the cultures of masculinity and technology are deeply coterminous, women's leadership in technology spaces is decoded as an affront to the very identity of a hypermasculine crypto bro. Kacia contrasted the open, relaxed culture of Crypto Springs to previous crypto conferences she had attended characterized by 'bro culture,' where women in the industry had made meaningful connections with one another while avoiding guys standing next to their Lamborghinis with bikini-clad women on them. Crypto Springs was their response to these conferences. She also mentioned that besides the contingent of vocal dissenters, many men who attended the event publicly applauded it as the most valuable blockchain event they had attended that year.

So are these types of events more progressive than 'by women, for women' events? Not necessarily. Again, each of these events enables and constrains women in different ways. One interviewee offered a compelling reminder of the importance of women-only spaces in blockchain. She recounted meeting "a young woman from a very traditional family at a hackathon who would never have been allowed to attend the hackathon if it weren't an all-women's event." In other words, her family would not have allowed her to work on a team with men, competing around the

clock in a 48-hour hackathon. She was only permitted to compete because her family perceived an all-women's event as a safe, appropriate space to learn more about the technology. Stories like these highlight the need for both women-only spaces, as well as women-centered spaces for all genders. These variations in social context promote greater blockchain accessibility, accommodating a diverse range of preferences and cultural backgrounds.

For financial advisor and meetup founder Jessie, the goals of diversity and inclusion are realized in a 'quality not quantity' style. This influenced the design of her lunch gatherings featuring a short talk by a woman in blockchain. She reached out and invited specific men and women to join, keeping the groups small enough to foster genuine connections, and facilitating communication for attendees to remain in touch. At the end of each event, she would briefly but overtly petition the mixed-gender audience to be active allies, by suggesting several concrete steps to take at other meetups and conferences in the space:

> I say, "First, let's not moderate an all-male panel. Insist on diversity. Second, let's not participate in an all-male panel. And third, if you see an all-male panel, point it out to the organizer. Tell them to be intentionally inclusive. You don't have to give up your life, your career. You don't have to give away money. These are very simple things. They take seconds, but if we all do them, we're going to see changes, right? Let's commit to doing this for even one year and see where we land."

Jessie's appeal to male allies in the room highlights that they can actively support women in the space without giving up money, time, or power in the process. This dismantles the myth that gender equity is a zero-sum game of winners and losers. It is a concrete bid for men to practice micro-inclusions, or small, symbolic acts which "signal to those at the margins that they are included" (McDowell, 2016). The discourse of intersectional inclusion highlights that without proactively welcoming a diversity of voices to shape the technology, blockchain is in danger of re-inscribing the existing power structures it purports to dismantle. Participants, like Kate, the co-founder of a crypto mining company, have been encouraged to see men practicing Jessie's suggestions above. She was involved in a group conversation about an upcoming conference. People were debating whether it was worth attending. As she explains: "There were several men in the conversation who said they will not attend any conference where the panels are not [gender balanced] 50/50. So I see that as very positive. When I see men taking that stand, that's helpful."

My observations showed another way organizers of 'by women, for everyone' events demonstrate intersectional inclusion is through their role as gatekeepers who set the tone and create safe spaces for women to speak and participate. Miranda, a blockchain consultant with a tech firm, commented on how one meetup organizer proactively stated the group's discussion guidelines to ensure women's voices were heard:

> There is a 'women in blockchain' meetup here in Seattle, led by a lawyer who helps startups position themselves for token sales and other go-to-market strategy. And that was really the first meetup that I went to in Seattle where I felt, it's just an amazing community. Very welcoming. So all the speakers are female. We have rules like, if you're a man you're welcome to attend, but you always have to let a female ask a question or make a comment ahead of you. And so I think [the organizer] has done a really great job of bringing in a lot of voices that I haven't heard anywhere else in any of the other meetups in the space.

The efficacy of this discursive gatekeeping technique was confirmed in a recent study that measured women's visibility at seminars by the question-asking behavior of participants, through observations and surveys (Carter et. al., 2018). Researchers found that men are more than 2.5 times more likely to pose follow-up questions to the speakers, but only when a man asked the first question. When a woman did so, the gender split disappeared.

Blockchain scenes in this discursive frame can be viewed as "ethical worlds shaped by the working out and maintenance of behavioral protocols" (Straw, 2015, p. 477). For example, in the case of a cryptocurrency mining conference I attended, I learned of the organizer's effective gatekeeping role in curating the speaker line-up when I later interviewed her. Tara, an economist and CEO of a blockchain research group, shared about how she dealt with a difficult situation. It was brought to her attention that one of the speakers they had signed on had a popular Twitter profile that included "racist, bigoted, gender-violent material." She felt strongly against giving a speaking platform to this person. This launched a discussion with her male-dominated team about the limits of free speech. They would likely have let it go, but she felt compelled to address it directly:

> It became really, really stressful. Finally I said, "That's it, I'm not leading a company that's going to give a platform to this type of voice, so let's talk to him directly." And we did. And he was so shocked. I said, "we're revoking your invitation as a speaker, but if you clean up some of this material online you're more than welcome to come as a guest." And within 24 hours everything was cleaned up. We had a couple of reconciliation calls where he said, "I realize my behavior is inappropriate, and the damage it can do, and how it can make people feel unsafe," yadda yadda. But I think it was also a bit of a life-changing moment. He said, "people have been saying this to me all along but now that it's implicated my profession and my business, I understand that this is real."

As the leader, and only woman, in a small blockchain organization, Tara used her influence to make a difficult, proactive decision to respond to the complaint about the speaker with the offensive Twitter feed. Where her colleagues were more apt to view this behavior as separate from his blockchain expertise, she did not view it this way. Even though the event itself featured mostly male speakers and attendees, she did not want to amplify a voice that had perpetuated racist, sexist messaging. She demonstrated an understanding of how to cultivate an inclusive space, even if it was male-dominated.

One of the most prominent constraints for blockchain stakeholders who view the space through the 'intersectional inclusion' frame is burnout for advocates. Ultimately, and ironically, the goal of women in blockchain groups and events is to eradicate the need for them at all. Jessie has organized a 'blockchain lunch' series for all genders, as well as the 'Women on the Block' conference for women. She reflected:

> Now there's more diversity-conscious events in blockchain, and I'm very happy to see that. My goal is to not have to do this anymore. So I can focus on being an operator and learn more, and write thoughtful pieces on the tech. I don't have time to do that right now. I'm so exhausted by this narrative. It's always, "what about women?" I don't want to be seen as this martyr. I'm exhausted by it. If we do any future events, we are working on changing the name of 'Women on the Block' to 'Satoshi's Table.'

This tension highlights a significant contrast between two discourses: in the dominant space of the gender-blind meritocracy, the 'lean into blockchain' narrative is seen as a distraction from 'the real work' of blockchain. Yet, gender-conscious advocates argue that correcting the gender disparity in the space relates directly to developing more robust, useful versions of blockchain. If talented women in tech spend inordinate amounts of time building their communities, that translates to a loss of resources from prospective advocates, analysts, and applicators of the technology.

Jessie's comment about changing the name of the group highlights a discursive aspiration toward progress. If the goal of this type of advocacy work is to promote gender parity in the space on a material level, then one way to work toward that on a discursive level is to change the group name to the gender-neutral 'Satoshi's Table,' although it would remain a 'by women, for women' initiative. This shows their understanding of an important concept STS scholars have highlighted – that language not only describes but also tends to produce the phenomena they set out to describe (Star, 1999). In other words, these stakeholders realize that *words create worlds*. Although blockchain scenes in the 'intersectional inclusion' frame reflect some of the most progressive ideas in the space, individuals operating within this frame represent a minority within a minority group. Taking on the challenge of transforming the dominant space is a David and Goliath scenario, but the underdogs are filled with precisely that kind of hope.

5 CONCLUSION

By elevating women's diverse experiences in various blockchain scenes, this study deepens scholarly understanding of how gender and technology shape one another. Meetups, conferences, and hackathons served as ideal places to observe both gender and technology in the making. As cultural practices they are an "essential site of struggle" that can "play an incalculable role in the raising of consciousness and the transformation of our subjectivity" (Barrett, 2014, p. 113). The discursive

complexities surrounding the acknowledgement of gender in blockchain make for thorny terrain to navigate. In this paper, I explored how women's participation in a variety of blockchain events was both enabling and constraining, depending on the design and social conditions of the event. Gender equity initiatives that sound similar were experienced differently by interviewees. For instance, 'by women, for women' blockchain meetups serve as important spaces of resistance and support for many, whereas 'women in blockchain' panels at blockchain conferences ring hollow as inclusivity gestures, instead highlighting the exclusivity of the male-dominated status quo. The technofeminist discourse analysis in this paper demonstrates how gender equity initiatives are encoded and decoded in different ways that shape social contexts and outcomes. It also reinforces the importance of intersectional approaches that highlight women's diverse experiences in the space. None of the events discussed above were 'one size fits all' in terms of their value to interviewees.

To recap the discursive frames presented in this paper, I compare and contrast them to one another: (1) the dominant 'gender-blind meritocracy' frame suggests that technology can solve social problems and everyone is currently welcome to participate; (2) the negotiated 'lean into blockchain' frame suggests that technology can solve social problems, but we need to support more women to join the space in order to improve both the workplace and the technology; and (3) the oppositional 'intersectional inclusion' frame suggests that social solutions are required to solve social problems. Furthermore, it suggests that technology is an important space to increase social equities, which may then enact more equitable technical solutions. As new technologies increasingly mediate more aspects of everyday life, this study contributes a set of discursive frames that scholars of STS, feminist technoscience, blockchain, and discourse analysis may adapt to analyze social equities in various tech scenes.

Wajcman (2004) reminds us that the project of technofeminism is twofold: "it offers a different way of understanding the nature of agency and change in a post-industrial world, as well as the means of making a difference" (p. 130). This technofeminist discourse analysis seeks to contribute towards both of these aims. The discursive tensions at stake between each frame represent moments of instability that open the possibility for greater gender equity in blockchain. Furthermore, this study aims to challenge and refine the concept of technofeminism as a more powerful intersectional lens of analysis. For example, nearly 20 years ago when Wajcman introduced the concept, she observed that the "culture of masculinity is largely coterminous with the culture of technology," and therefore, "to enter this world, to learn its language, women have first to forsake their femininity" (2004, p. 15). The findings of this study problematize some of these assumptions, demonstrating that some blockchain spaces are distinctly feminized yet still problematic. This study also decouples masculinity from the problem of gender equity in the space – women were constrained, more specifically, by patriarchal and misogynist scenes within blockchain. Women were also enabled in

the few male-dominated scenes that explicitly embraced feminist values, humanizing people of all genders.

Each of the gender-conscious initiatives described across the three discursive frames is associated with different forms of feminism, but they all take place in the broader postfeminist social context. Therefore, one of the barriers for making lasting social change on a broad scale, through the events described in this paper, is that the supportive social bonds formed both online and in place-based networks are typically designed to facilitate women's individual empowerment and entrepreneurialism, as opposed to that of the collective. Organizers of diversity-focused events were prone to speak of them as simply 'more inclusive' or 'improving the space' as opposed to anything to do with feminism or activism. And participants who subscribed to the dominant 'gender-blind meritocracy' as their primary lens on the space dismissed gender as an important factor to blockchain. This is their way of asserting that women are already empowered and successful in the space, and that others can be too, through the idea of 'trickle down feminism' (Kennedy, 2013). Yet while women are knowledgeable and successful in blockchain, they are not often recognized or rewarded as such.

This brings us back to the questions of 'whose voices are heard, in which social contexts?' and 'whose knowledge counts?' from the beginning of the paper. The reason participants improvise and develop 'by women, for women' and 'by women, for everyone' events is precisely to create spaces for women's voices to be heard, and to increase the likelihood for women's knowledge to count in the dominant space. These blockchain scenes mediate an important "space of transit between visibility and invisibility" (Straw, 2015, p. 483). They may be generative, accessible spaces for some women to innovate within the blockchain space, but they are not coded with the same level of influence or power as male-dominated spaces. Participants in this study experienced benefits and challenges related to each of these blockchain scenes in unique and individual ways. They also signaled important ways to improve each of them, in order to build more integrated, sustainable spaces of tech innovation.

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REFERENCES

Adams, P. R., Frizzo-Barker, J., Ackah, B., & Chow-White, P. A. (2019). Meetups: Making space for women on the blockchain. In M. Ragnedda & G. Destefanis (Eds.), *Blockchain and Web 3.0: Social, Economic, and Technological Challenges* (pp. 48–61). Routledge. https://doi.org/10.4324/9780429029530

Ahmed, S. (2012). *On Being Included: Racism and Diversity in Institutional Life* (Illustrated edition). Duke Univ Pr.

Ahmed, S. (2015). Introduction: Sexism - A Problem with a Name. *New Formations: A Journal of Culture/Theory/Politics*, *86*(1), 5–13.

Ahmed, S. (2017). *Living a Feminist Life*. Duke University Press.

Banerjee, D. (2022, April 19). *Inside crypto's hiring spree: A 'Wild West' search for talent with one big problem* [LinkedIn]. https://www.linkedin.com/pulse/inside-cryptos-hiring-spree-wild-west-search-talent-banerjee-cfa/

Banet-Weiser, S. (2018). *Empowered: Popular Feminism and Popular Misogyny*. Duke University Press.

Barrett, M. (2014). *Women's Oppression Today: The Marxist/feminist Encounter*. Verso Books.

Baym, N., Swartz, L., & Alarcon, A. (2019). Convening Technologies: Blockchain and the Music Industry. *International Journal of Communication*, *13*(0), 402–421.

Begeny, C. T., Ryan, M. K., Moss-Racusin, C. A., & Ravetz, G. (2020). In some professions, women have become well represented, yet gender bias persists—Perpetuated by those who think it is not happening. *Science Advances*, *6*(26), eaba7814. https://doi.org/10.1126/sciadv.aba7814

Benjamin, R. (2019). *Race after Technology: Abolitionist tools for the New Jim Code*. Polity.

Benkler, Y. (2006). *The Wealth of Networks: How Social Production Transforms Markets and Freedom*. Yale University Press.

Blum, A. (2001). Scenes. *Public*, 7–35.

Bobel, C. (2007). "I'm not an activist, though I've done a lot of it": Doing Activism, Being Activist and the "Perfect Standard" in a Contemporary Movement. *Social Movement Studies*, *6*(2), 147–159. https://doi.org/10.1080/14742830701497277

Boczkowski, P., & Lievrouw, L. A. (2008). Bridging STS and communication studies: Scholarship on media and information technologies. In E. J. Hackett, O. Amsterdamska, M. Lynch, & J. Wajcman (Eds.), *The Handbook of Science and Technology Studies* (pp. 949–977). MIT Press.

Bourke, J., & Espedido, A. (2019, March 29). Why Inclusive Leaders Are Good for Organizations, and How to Become One. *Harvard Business Review*.

Retrieved from https://hbr.org/2019/03/why-inclusive-leaders-are-good-for-organizations-and-how-to-become-one

Bowles, N. (2018, February 25). Women in Cryptocurrencies Push Back Against 'Blockchain Bros.' *New York Times*. https://www.nytimes.com/2018/02/25/business/cryptocurrency-women-blockchain-bros.html

Brooke, S. (2020). *Breaking gender code: Visibility, power, and gender in creative coding cultures* [University of Oxford]. https://ora.ox.ac.uk/objects/uuid:76f836bf-880b-4902-9226-8d668726f4cf

Carter, A., Croft, A., Lukas, D., & Sandstrom, G. (2018). Women's visibility in academic seminars: Women ask fewer questions than men. *PLOS ONE*, *13*(9), e0202743. https://doi.org/10.1371/journal.pone.0202743

Casemajor, N., & Straw, W. (2017). The Visuality Of Scenes: Urban Cultures And Visual Scenescapes. *Imaginations: Journal of Cross-Cultural Image Studies*, *7*(2), 4–19.

Castells, M. (2000). *The Rise of the Network Society: The Information Age: Economy, Society, and Culture*. Blackwell.

Castells, M. (2001). *The Internet Galaxy: Reflections on the Internet, Business, and Society*. Oxford University Press.

Castilla, E. J., & Benard, S. (2010). The Paradox of Meritocracy in Organizations. *Administrative Science Quarterly*, *55*(4), 543–576.

Cho, S., Crenshaw, K. W., & McCall, L. (2013). Toward a Field of Intersectionality Studies: Theory, Applications, and Praxis. *Signs*, *38*(4), 785–810.

Christensen, C. M., Raynor, M. E., & McDonald, R. (2015). *What Is Disruptive Innovation?* Harvard Business Review. https://hbr.org/2015/12/what-is-disruptive-innovation

Cockburn, C., & Ormrod, S. (1993). *Gender and technology in the making*. Sage Publications.

Coin Dance. (2022, March). *Bitcoin Community Engagement by Gender Summary*. Coin Dance. https://coin.dance/stats#demographics

Coleman, G., & Jandrić, P. (2019). Postdigital Anthropology: Hacks, Hackers, and the Human Condition. *Postdigital Science and Education*, *1*(2), 525–550. https://doi.org/10.1007/s42438-019-00065-8

Correll, S. J. (2017). SWS 2016 Feminist Lecture: Reducing Gender Biases In Modern Workplaces: A Small Wins Approach to Organizational Change. *Gender & Society*, *31*(6), 725–750. https://doi.org/10.1177/0891243217738518

Cottom, T. M. (2017). Black cyberfeminisms: Ways forward for intersectionality and digital sociology. In D. Jessie, G. Karen, & T. M. Cottom (Eds.), *Digitized institutions* (pp. 211–230). Policy Press.

Crenshaw, K. (1990). Mapping the Margins: Intersectionality, Identity Politics, and Violence against Women of Color. *Stanford Law Review*, *43*, 1241.

Cuen, L. (2018, December 31). *Bitcoin's Warrior Queen: How Lightning's Elizabeth Stark Raised an Army*. CoinDesk. https://www.coindesk.com/coindesk-most-influential-blockchain-2018-elizabeth-stark

Custer, C. (2018). *Blockchain's Gender Divide: A Data Story—Longhash*. https://en.longhash.com/news/blockchains-gender-divide-a-data-story

De Hertogh, L. B., Lane, L., & Ouellette, J. (2019). "Feminist Leanings:" Tracing Technofeminist and Intersectional Practices and Values in Three Decades of Computers and Composition. *Computers and Composition*, *51*, 4–13. https://doi.org/10.1016/j.compcom.2018.11.004

Dennissen, M., Benschop, Y., & van den Brink, M. (2020). Rethinking Diversity Management: An Intersectional Analysis of Diversity Networks. *Organization Studies*, *41*(2), 219–240. https://doi.org/10.1177/0170840618800103

Dunbar-Hester, C. (2014). *Low Power to the People: Pirates, Protest, and Politics in FM Radio Activism*. The MIT Press.

Dunbar-Hester, C. (2020). *Hacking Diversity: The Politics of Inclusion in Open Technology Cultures*. Princeton University Press.

Elizabeth, K. (2018, June 26). Crypto Is Booming. But Where Are The Women? *Forbes*. https://www.forbes.com/sites/katieelizabeth1/2018/06/26/crypto-is-booming-where-are-the-women/#33206c7b1a3f

Ensmenger, N. (2012). *The Computer Boys Take Over: Computers, Programmers, and the Politics of Technical Expertise* (pp. x, 320). The MIT Press.

Eswaran, V. (2019). *The business case for diversity is now overwhelming. Here's why*. Retrieved from World Economic Forum website: https://www.weforum.org/agenda/2019/04/business-case-for-diversity-in-the-workplace/

Eubanks, V. (2018). *Automating Inequality: How High-Tech Tools Profile, Police, and Punish the Poor*. New York, NY: St. Martin's Press.

Faludi, S. (2013). Facebook Feminism, Like It or Not. *The Baffler*, *23*, 34–51.

Faulkner, W. (2009). Doing gender in engineering workplace cultures: Gender in/authenticity and the in/visibility paradox. *Engineering Studies*, *1*(3), 169–189. https://doi.org/10.1080/19378620903225059

Finneman, T., & Volz, Y. (2020). Leading the second wave into the third wave: U.S. women journalists and discursive continuity of feminism. *Feminist Media Studies*, *20*(6), 863–878. https://doi.org/10.1080/14680777.2019.1644658

Fraser, N. (2013). *Fortunes of Feminism: From State-Managed Capitalism to Neoliberal Crisis:* Verso; https://www.amazon.ca/Fortunes-Feminism-State-Managed-Capitalism-Neoliberal/dp/1844679845.

Fuchs, C. (2013). *Social Media: A Critical Introduction*. SAGE.

Gamerman, E. (2022, March 11). Reese Witherspoon and Gwyneth Paltrow Push for Crypto Sisterhood. *Wall Street Journal*. https://www.wsj.com/articles/reese-witherspoon-and-gwyneth-paltrow-push-for-crypto-sisterhood-11647017051

Gerson, J. M., & Peiss, K. (1985). Boundaries, Negotiation, Consciousness: Reconceptualizing Gender Relations. *Social Problems*, *32*(4), 317–331. https://doi.org/10.2307/800755

Gill, R. (2009). Mediated intimacy and postfeminism: A discourse analytic examination of sex and relationships advice in a women's magazine. *Discourse & Communication*, *3*(4), 345–369. https://doi.org/10.1177/1750481309343870

Gill, R. (2011). Sexism Reloaded, or, it's Time to get Angry Again! *Feminist Media Studies*, *11*(1), 61–71. https://doi.org/10.1080/14680777.2011.537029

Gill, R. (2018). Discourse analysis in media and communications research. In M. Kackman & M. C. Kearney (Eds.), *The Craft of Criticism: Critical Media Studies in Practice*. Routledge.

Green, D. J. (2018, October 10). We Need More Female Programmers In Blockchain. *Forbes*. https://www.forbes.com/sites/jemmagreen/2018/10/10/we-need-more-female-programmers-in-blockchain/

Griffith, E. (2018). For Women in Cryptocurrency, a New Effort to Grow Their Ranks. *WIRED*. https://www.wired.com/story/for-women-in-cryptocurrency-a-new-effort-to-grow-their-ranks/

Hall, S. (1980). Encoding/Decoding. In S. Hall, D. Hobson, A. Lowe, & P. Willis (Eds.), *Culture, Media, Language: Working Papers in Cultural Studies, 1972-79* (pp. 117–127). Hutchinson.

Haraway, D. (1988). Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective. *Feminist Studies*, *14*(3), 575–599. https://doi.org/10.2307/3178066

Haraway, D. J. (1997). *Modest-Witness@Second-Millennium.FemaleMan-Meets-OncoMouse: Feminism and Technoscience*. Routledge.

Hardey, M. (2019). *The Culture of Women in Tech: An Unsuitable Job for a Woman* (1st ed.). Emerald Group Publishing Limited.

Heywood, L. (2006). *The women's movement today: An encyclopedia of third-wave feminism*. Greenwood Press.

Hicks, M. (2017). *Programmed inequality: How Britain discarded women technologists and lost its edge in computing*. MIT Press.

Hughes, T. P. (1993). *Networks of Power: Electrification in Western Society, 1880-1930* (Revised edition). Johns Hopkins Univ Pr.

Jackson, I. (2019). *Bitcoin & Black America*. Independently published.

Jenkins, H. (2006). *Convergence Culture: Where Old and New Media Collide*. NYU Press.

Joseph, C. (2013). Leveraging a women's network to attract, develop and retain high potential female talent. *Strategic HR Review*, *12*(3), 132–137. https://doi.org/10.1108/14754391311324480

Kennedy, S. (2013). Marxism and Feminism in an Age of Neoliberalism. *Irish Marxist Review*, *2*(7), 5–16.

Kostecki, J. (2019, May 22). Thoughts on Diversity, Inclusion and Accessibility for Massive Adoption in Memphis. *Medium*. https://medium.com/@jacob_kostecki/thoughts-on-diversity-inclusion-and-accessibility-for-massive-adoption-in-memphis-db0bd8f2a2a1

Landström, C. (2007). Queering feminist technology studies. *Feminist Theory*, *8*(1), 7–26.

Lievrouw, L. A., & Livingstone, S. M. (Eds.). (2006). *Handbook of New Media: Student Edition*. Sage Publications.

MacKenzie, D. A., & Wajcman, J. (1999). Introductory essay: The social shaping of technology. In *The Social Shaping of Technology* (2nd ed., pp. 3–26). Open University Press.

Marcus, G. (2011). Multi-sited Ethnography: Five or Six Things I Know About it Now. In S. Coleman & P. V. Hellermann (Eds.), *Multi-sited Ethnography: Problems and Possibilities in the Translocation of Research Methods* (pp. 16–32). Routledge.

Marcus, G. E. (1995). Ethnography in/of the World System: The Emergence of Multi-Sited Ethnography. *Annual Review of Anthropology*, *24*, 95–117.

McCall, L. (2005). The Complexity of Intersectionality. *Signs: Journal of Women in Culture and Society*, *30*(3), 1771–1800. https://doi.org/10.1086/426800

McDowell, C. (2016). *Micro-inclusion: A small step to include someone*. Interaction Institute for Social Change. http://interactioninstitute.org/micro-inclusion-a-small-step-to-include-someone/

McRobbie, A. (2008). *The Aftermath of Feminism: Gender, Culture and Social Change*. SAGE Publications.

Miller, N. (2019, February 21). *She(256) wants to disrupt the male dominated field of blockchain*. Newsweek. https://www.newsweek.com/2019/03/08/she256-disrupt-male-dominated-tech-blockchain-1339553.html

Miyata, K., Boase, J., Wellman, B., & Ikeda, K. (2005). The mobile-izing Japanese. In M. Ito, D. Okabe, & M. Matsuda (Eds.), *Personal, Portable, Pedestrian: Mobile Phones in Japanese Life* (pp. 143–164). MIT Press.

Morozov, E. (2013). *To Save Everything, Click Here: The Folly of Technological Solutionism*. PublicAffairs.

Mougayar, W., & Buterin, V. (2016). *The Business Blockchain: Promise, Practice, and Application of the Next Internet Technology*. Wiley.

Moy, J. (2018, May 6). Bitcoin Bros, Meet the Women On The Block. *Forbes*. https://www.forbes.com/sites/jamiemoy/2018/05/06/bitcoin-bros-meet-the-women-on-the-block/

Nakamoto, S. (2009, May 24). *Bitcoin: A Peer-to-Peer Electronic Cash System*. https://web.archive.org/web/20140320135003/https://bitcoin.org/bitcoin.pdf

Nash, J. C. (2008). Re-Thinking Intersectionality. *Feminist Review*, *89*(1), 1–15.

Neff, G. (2012). *Venture Labor: Work and the Burden of Risk in Innovative Industries*. MIT Press.

Noble, S. U. (2018). *Algorithms of Oppression: How Search Engines Reinforce Racism*. New York: NYU Press.

Ogundei, O. (2016, July 6). *It's a Man's World: Only 1.76% of Bitcoin Community Are Women*. Cointelegraph. Coin Telegraph

Peck, M. (2019, March 8). Cryptocurrency Is Not Just a Boys' Club. *Glamour*. https://www.glamour.com/story/meet-the-women-of-cryptocurrency

Perez, C. C. (2019). *Invisible Women: Data Bias in a World Designed for Men* (First Printing edition). Harry N. Abrams.

Petrucci, L. (2020). Theorizing postfeminist communities: How gender-inclusive meetups address gender inequity in high-tech industries. *Gender, Work & Organization*, *27*(4), 545–564. https://doi.org/10.1111/gwao.12440

Pinch, T., & Bijker, W. E. (1987). The Social Construction of Facts and Artifacts: Or How the Sociology of Science and the Sociology of Technology Might Benefit From Each Other. In W. E. Bijker, T. P. Hughes, T. Pinch, & D. G. Douglas (Eds.), *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology* (pp. 17–51). MIT Press.

Plant, S. (1997). *Zeros + Ones: Digital Women + the New Technoculture*. Fourth Estate.

Primack, D. (2018, January 26). *Bitcoin conference ends at a strip club*. Axios. https://www.axios.com/bitcoin-conference-stripclub-1516983254-35e78aad-ee30-4872-bfe6-13190dd46061.html

Rainie, L., & Wellman, B. (2012). *Networked: The New Social Operating System*. MIT Press.

Rakow, L. F. (1986). Rethinking Gender Research in Communication. *Journal of Communication*, *36*(4), 11–26. https://doi.org/10.1111/j.1460-2466.1986.tb01447.x

Saldana, J. (2015). *The Coding Manual for Qualitative Researchers*. SAGE.

Sandberg, S. (2013). *Lean In: Women, Work, and the Will to Lead*. Random House.

Savić, S., & Wuschitz, S. (2018). *Feminist Hackerspace as a Place of Infrastructure Production*. https://scholarsbank.uoregon.edu/xmlui/handle/1794/26790

Schultze, U., & Orlikowski, W. J. (2001). Metaphors of virtuality: Shaping an emergent reality. *Information and Organization*, *11*(1), 45–77. https://doi.org/10.1016/S1471-7727(00)00003-8

Sessions, L. F. (2010). How Offline Gatherings Affect Online Communities. *Information, Communication & Society*, *13*(3), 375–395. https://doi.org/10.1080/13691180903468954

Shen, C., & Cage, C. (2013). Exodus to the real world? Assessing the impact of offline meetups on community participation and social capital. *New Media & Society*, *17*(3), 393–414.

Silverstone, R. (2002). Complicity and Collusion in the Mediation of Everyday Life. *New Literary History*, *33*(4), 761–780.

Star, S. L. (1999). The Ethnography of Infrastructure. *American Behavioral Scientist*, *43*(3), 377–391. https://doi.org/10.1177/00027649921955326

Straw, W. (2015). Some Things a Scene Might Be. *Cultural Studies*, *29*(3), 476–485. https://doi.org/10.1080/09502386.2014.937947

Swan, M. (2015). *Blockchain: Blueprint for a New Economy*. O'Reilly Media.

Szulc, L. (2020). Digital Gender Disidentifications: Beyond the Subversion Versus Hegemony Dichotomy and Toward Everyday Gender Practices. *International Journal of Communication*, *14*.

Tapscott, D., & Tapscott, A. (2016). *Blockchain Revolution: How the Technology Behind Bitcoin Is Changing Money, Business, and the World*. Portfolio.

Tulshyan, R. (2016). *The Diversity Advantage: Fixing Gender Inequality in The Workplace*. CreateSpace Independent Publishing.

Turkle, S. (1995). *Life on the Screen*. Touchstone.

Vigna, P., & Casey, M. J. (2016). *The Age of Cryptocurrency: How Bitcoin and the Blockchain Are Challenging the Global Economic Order* (Reprint edition). Picador.

Wajcman, J. (1991). *Feminism Confronts Technology*. Penn State Press.

Wajcman, J. (2004). *TechnoFeminism*. Polity.

Wajcman, J. (2007). From Women and Technology to Gendered Technoscience. *Information, Communication & Society*, *10*(3), 287–298. https://doi.org/10.1080/13691180701409770

Wellman, B., Quan-Haase, A., Boase, J., Chen, W., Hampton, K., Díaz, I., & Miyata, K. (2003). The Social Affordances of the Internet for Networked Individualism. *Journal of Computer-Mediated Communication*, *8*(3).

Woo, B., Rennie, J., & Poyntz, S. R. (2015). Scene Thinking. *Cultural Studies*, *29*(3), 285–297. https://doi.org/10.1080/09502386.2014.937950

Worth, A., Augoustinos, M., & Hastie, B. (2015). "Playing the gender card": Media representations of Julia Gillard's sexism and misogyny speech. *Feminism & Psychology*, 52–72.

Yang, Y., Chawla, N. V., & Uzzi, B. (2019). A network's gender composition and communication pattern predict women's leadership success. *Proceedings of the National Academy of Sciences*, *116*(6), 2033–2038. https://doi.org/10.1073/pnas.1721438116