

**Feminist and Queer Science: Principles of Research with Gender, Sex, and Sexuality in  
Psychology and Beyond**

Sari M. van Anders<sup>a\*</sup>, Zach C. Schudson<sup>b</sup>, Will J. Beischel<sup>c</sup>, & Sara B. Chadwick<sup>d</sup>

<sup>a</sup>Departments of Psychology, Gender Studies, and Neuroscience, Queen's University

<sup>b</sup>Department of Psychology, California State University, Sacramento

<sup>c</sup>Department of Psychology, University of Michigan

<sup>d</sup>Department of Population Health Sciences, University of Central Florida

\*Corresponding author:

Sari van Anders, Ph.D., Canada 150 Research Chair in Social Neuroendocrinology, Sexuality, & Gender/Sex, and Professor of Psychology, Gender Studies, and Neuroscience, at Queen's University, sva5@queensu.ca, 62 Arch Street, Queen's University, Kingston Ontario, K7L 3N6

### **Abstract**

Feminist/queer science offers exciting possibilities for psychology and other fields. In this article, we review a set of dynamic principles for feminist/queer science, based in research with gender, sex, and sexuality (gender/sex/uality). There are potentially surprising ways that queer and science overlap for a queer science, and we focus on four: construction, openness, challenge, and multiplicities. There are also meeting points between feminism and science that support a feminist science, and we again focus on four: bias, truth, objectivity, and empiricism. Yet there are a number of challenges to feminist/queer science, including those that are epistemological, empirical, and methodological. We detail these, articulating how feminist/queer science also provides ways to address, sidestep, and move beyond them. Throughout, we articulate how feminist/queer science provides a dynamic and rigorous way forward for psychological science as well as other fields, and we conclude by articulating how it can lead to more empirical, accurate, and just knowledge.

**Key words:** feminism, queer, science, gender/sex, sexuality

**Public significance statement:** Science is one crucial approach to understanding gender, sex, and sexuality and can be more empirical, less harmful, and more just when combined with feminist and queer principles. This article describes these principles and highlights how feminist/queer science is a dynamic and powerful approach for building knowledge that reflects and contributes to the fullness of gender/sex and sexual diversity.

## **Feminist and Queer Science: Principles for Research with Gender, Sex, and Sexuality in Psychology and Beyond**

Feminism and queer<sup>1</sup> are often seen as contrasting or conflicting with science and vice versa. Yet, there are promising meeting points that have the potential to improve science and its impact overall. In this article, we articulate a feminist/queer science and its exciting possibilities for the field of psychology and beyond. To do so, we review a set of dynamic principles and evidence for them based in psychological research about gender/sex/uality<sup>2</sup>. We build on scholarship that has demonstrated how dominant scientific practices have historically reinforced oppressive social structures and illustrate how feminist/queer science has challenged these practices. We lay out how feminist and queer approaches can work in synergy with and modify mainstream science to make for what has often been called a “successor science” (Harding, 1991). Our approach is shaped considerably by the already vibrant and relatively nonoverlapping fields of feminist psychology and queer psychology (Hegarty & Massey, 2006; Rutherford, 2021; Rutherford & Pettit, 2015) and the fields of feminist science studies and queer science studies (Harding, 1986; Hird, 2004; Intemann, 2010).

Our purpose in delineating a set of dynamic principles for feminist/queer science is to equip scientists and scholars with tools for imagining feminist/queer transformations of their

---

<sup>1</sup> We use the term “queer” in this grammatical form (as well as others) to refer to a set of epistemic principles, a usage present in considerable existing scholarship for some time (Chen, 2012; Jagose, 1996; Sicurella, 2016; Talburt, 2000). It is more appropriate for our article than “queer theory” (a more specific term that refers to a specific academic field) or “queerness” (which refers to a property or features of phenomena). Though in common usage, this grammatical form of queer may be new to some; in this case, readers might consider how this form might be understood to queer their usage of the term queer as well as grammatical practices using some of the principles we outline in the article.

<sup>2</sup> Gender/sex/uality is a shorthand for gender/sex and sexuality, terms we use repeatedly in this article and concepts that often are invoked together. By gender/sex, we mean how gender (sociocultural aspects of femininity, masculinity, and gender diversity) and sex (biological/evolved, biomaterial, and bodily/physical aspects of maleness, femaleness, and sex diversity) are most generally tied together in ways that are interconnected and/or difficult to disentangle (van Anders, 2015b, 2022). The term does not, however, conflate gender, sex, and/or sexuality, and we separate them as appropriate.

research, and their fields more broadly. We emphasize examples of feminist/queer psychological science on gender/sex/uality because of our training and field, but the principles we describe are applicable to feminist/queer social science (and many other forms of science) in general. Our project contributes to a growing body of scholarship integrating feminist and queer perspectives in the sciences (Cipolla et al., 2017; Fahs & McClelland, 2016; Gupta & Rubin, 2020.; Hagai & Zurbriggen, 2022; Molldrem & Thakor, 2017; Pitts-Taylor, 2016; van Anders, 2013; van Anders, 2022) by creating a roadmap of sorts to help scientists conceptualize and conduct feminist/queer research.

To start, we review and characterize the concepts of feminism, queer, and science for the purposes of our article. We then consider the unique meeting points between science and both feminist and queer approaches. As we do so, we review research that highlights how these overlaps make for a more creative, rigorous, and productive form of scientific inquiry. We delineate four key meeting points between queer and science: multiplicities, challenge, openness, and construction. We next lay out four key meeting points between feminism and science: bias, truth, objectivity, and empiricism. We use this approach (queer then feminist) because queer science currently has a smaller body of literature, making it a more contained entry point. Our approach considers science's meeting points with feminism and queer approaches separately while also recognizing their linkages and shared vision of a feminist/queer "successor science."

We also recognize that there are a number of challenges, barriers, and potential pitfalls that can raise difficulties for feminist/queer science, and we characterize these in three ways. The first is epistemological; ways of knowing within science, feminism, and queer that introduce significant barriers to doing feminist/queer science: conflicting and problematic understandings of feminism and queerness within culture, hegemonic approaches to science (e.g., with

scientism) and feminism (e.g., with essentialist or neoliberal feminisms), as well as across scholarship (e.g., with the privileging of theory and basic scholarship over practice and applied scholarship). The second set of challenges is empirical; how evidence is understood and valued within science, feminism, and queer and we detail two: that science is a justifiably hard sell in feminist and queer spaces, and the considerable antagonism to and ignorance of feminism, queer, and science. The third and final set of challenges is methodological; understandings of how to do science, feminist scholarship, and queer scholarship. Here, we focus on clashes between quantitative and qualitative methodologies, how methods that characterize feminist and queer science can actually introduce a specific problem for research with gender/sex/uality majorities<sup>3</sup> that we describe as “overempowerment” (van Anders, Schudson, et al., 2022), and the challenge of materiality for feminist/queer work. Yet, existing feminist/queer science also meets these challenges. As such, we describe the ways this growing field is sidestepping barriers and moving understandings of gender/sex/uality forward.

### **What are Science, Feminism, and Queer?**

Science, feminism, and queer are broad concepts with multiple understandings. For this work, we characterize science as an objective, systematic, and empirical pursuit of facts. We define feminist scholarship as attending to gender inequities and intersecting power hierarchies that (a) police all gender/sexes, (b) disproportionately disadvantage women, femininity, and/or femaleness, and (c) disproportionately advantage men, masculinity, and/or maleness. And we understand queer scholarship as (a) rethinking power and value of binaries, categories, and categorizers, (b) challenging, upending, and exploding proscriptive and prescriptive norms, (c) considering pleasure and strangeness in transformative ways, and (d) attending to lived

---

<sup>3</sup> We define minority/minorities and majority/majorities in relation to power hierarchies, not statistical frequencies (van Anders, 2015).

experiences of people on the margins—all especially focused on gender/sex/uality and gender/sex/ual minorities.

Extensive scholarship demonstrates the ways that science in its dominant form has been built toward marginalizing minoritized groups or had that impact. Somewhat less well-understood, especially by majorities, is that many forms of feminism and queer are and have been hostile toward the lives and scholarship of minoritized people, including transgender and/or nonbinary people and racialized groups/people of color; in contrast to these, we focus on feminist and/or queer research and approaches that are explicitly built with, from, and for diverse lives, experiences, and scholarship.

Feminist/queer science attends to social location among other key phenomena. This refers to our place within multiple axes of identity, existence, and power at individual, group, and structural levels, and can include majoritization/majorities (e.g., holding privilege and power, including over others), minoritization/minorities (e.g., oppressed and marginalized but including resistance), and minority-majority locations (e.g., social locations that include majoritization and minoritization). Social location contributes to our understandings of positionality, that is, people's reflective understandings of their own social locations and concomitant privilege and oppression relative to others' (Haraway, 1988; Harding, 1986). Social location axes are often understood to include gender/sex, sexuality, race/ethnicity, class/socioeconomic status, citizenship status, body size, Indigeneity, dis/ability, parental status, and more, as well as their intersections. Intersectionality is a theory and praxis (i.e., practical application or use of theory or ideas—through activism, for example) developed by Black women in the United States to name how many forms of their oppression are not just based on singular axes that are always divisible or separable—misogyny or anti-Black racism—but about their intersection as Black women, and to

develop ways to name and resist this (Cole, 2009; Combahee River Collective, 1983; Crenshaw, 1991). Understandings of social location rely, in part, on lived experience: The knowledge people can gain about the oppression tied to their social location because they have experienced it and critically engaged with and reflected upon it (Haraway, 1988).

Social location, positionality, and lived experience are crucial aspects of feminist/queer science, as this article delineates. One of the reasons for this is that they can shape what counts as knowledge, how knowledge can be adjudicated, and what is known. And this can happen in ways that support liberatory and social justice aims or oppose them, in what is often called hermeneutical injustice or epistemic injustice of many forms (Dotson, 2012; Fricker, 2007; Medina, 2017). Accordingly, feminist/queer scientists are called on—and call on others—to make authors' social locations explicit, to help inform our ability to consider and mitigate our biases and others' ability to understand the context of our knowledge claims. We presently define our social locations as: white/Jewish/white-adjacent, queerish, fat, upper-middle class, nondisabled, Canadian, parent, cisgender, woman; white, upper-middle class, Jewish, American, gay, cisgender, man; white, queer, upper-middle class, U.S.-born, nondisabled, genderfluid; white, woman, queer, upper-middle class, cisgender, American/Canadian. Making explicit how we are socially located as people and as scientists is one of the many ways that principles of feminist/queer science can help us to transform knowledge production for more empirical, rigorous, and just understandings of the world.

### **Queer Science and Gender/Sex/uality**

Though queer and science can be seen as unrelated, orthogonal, or even antithetical or antagonistic to each other, we see four productive meeting points (see Figure 1): construction, openness, challenge, and multiplicities. We focus on each of these in turn, describe what they

are, and provide examples based on gender/sex/uality research in psychological science. These meeting points between queer and science translate into principles that underlie queer science, including for research with gender/sex/uality in psychology and other fields. We understand “queer science” as the doing of science in ways that follow these principles (and others that have yet to be articulated or might be elsewhere). In this frame, queer science does not necessarily mean “science with queer people” or even “science on queer topics,” especially considering the long history of mainstream science done on queer communities that is antithetical to the thriving of gender/sex/ual minorities (Ansara & Hegarty, 2012). Rather, we frame queer science as a way of constructing knowledge that combines scientific empiricism and the expansiveness of queer thinking.

### **Construction**

Queer and science are both descriptive projects but, more than that, are also constructive ones. Queer is worldmaking (Berlant & Warner, 1998): It sets out ways to view and structure the world in new, strange, and compelling ways. It also sets out visions for a different, parallel, or to-come world not molded by heteronormative gender/sex/ual norms (Muñoz, 2009). Of course, queer can also be a deconstructive project, pulling on the loose threads of irrational and harmful gender/sex/ual norms to show their lack of coherence. However, the way that queer constructs existing and potential worlds connects with science because science is also a constructive project. It uses methods and measures that tell us what gender/sex/uality “is,” could be, or should be (Foucault, 1990; Hacking, 1986). In this way, science is a diffractive project (e.g., Barad, 2007). It does not just discover the world as it is; science uses measures through which certain parts of gender/sex/uality can be seen (depending on who’s looking). Diffraction quite literally shapes the gender/sex/ualities we come to see and does not just reveal them. Science therefore

builds the world as it measures and studies it. Thus, mainstream science and queer are both involved in constructing worlds, and queer science does so in a way that understands itself as an active and agentic process, one that reshapes the worlds we live in and might.

Queer science in psychology often details the ways gender/sex/ual minorities construct their worlds outside of and as a challenge to cisheteronormativity. As language to describe gender/sex/uality has historically been built by majorities, gender/sex/ual minorities often find traditional labels insufficient and invent or adopt new language to describe themselves (e.g., birl, genderfucker, pan-curious, switch boi, trisexual; Galupo et al., 2016, Kuper et al., 2012). Sometimes these labels are specific to certain lesbian, gay, bisexual, queer (LGBTQ+) communities, such as stud among masculine Black youth who were assigned female at birth (Kuper et al., 2014).

Queer psychologists have also attended to gender/sex/ual minorities' narrative construction of their life stories across age cohorts, noting how events like the removal of "homosexuality" from the Diagnostic and Statistical Manual of Mental Disorders and the Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome epidemic impact how gender/sex/ual minorities construct their identities over time, including the proliferation of identity scripts beyond the historically dominant, pathologizing view of sexual minority identity as sickness (Hammack et al., 2013).

Forms of queer world-making, like drag, make space for gender/sex/ual minorities to dynamically construct unique forms of embodied gender expression and play with peoples' gendered and sexual expectations to challenge cisheteronormativity (Levitt et al., 2018). Queer world-making also increasingly occurs online, which can provide space to discursively negotiate

identities, stake political claims, and foster feelings of belonging (Adams-Santos, 2020; Schudson & van Anders, 2019).

From these and other queer worlds, researchers have constructed ways of thinking about gender/sex/uality that can advance queer projects in science and beyond. For example, sexual configurations theory (SCT; van Anders, 2015) draws connections across seemingly disparate identities and experiences (e.g., polyamorous, single-by-choice) to theorize partner number as an important component to people's sexualities. SCT also provides visual models for representing gender/sex sexuality, partner number sexuality, and individual gender/sex in ways that expand beyond traditional measures and are described by participants as constructing new understandings (Abed et al., 2019; Schudson et al., 2017). In another queer construction, Levitt (2019) has proposed a theory of LGBTQ+ gender, wherein gender functions across four domains: psychological, cultural, interpersonal, and sexual. Based upon Levitt's qualitative research with a wide range of LGBTQ+ people's experiences of gender, this theory highlights the ways gender/sex/ual minorities construct gendered realities to meet intrapersonal and interpersonal needs.

Constructive work in queer science is often influenced by queer theorist Judith Butler's ideas, especially gender performativity (Butler, 1990). Gender performativity holds that gender/sex results from a social process that is routinely and repetitively accomplished (i.e., performed) according to norms and thereby takes on the appearance of a natural property via essentialism. Incorporating this concept into queer science, researchers have explored how gender norms might impact circulating levels of testosterone, building support for the very idea of gender/sex (e.g., that there are phenomena where gender and sex are intertwined; van Anders et al., 2015). Others have used gender performativity as a queer science research framework for

social psychology (Morgenroth & Ryan, 2018, 2021) that envisions the concept of gender/sex (van Anders & Dunn, 2009; van Anders et al., 2015) as theatrical performance, involving an actor (i.e., a person) with a character (i.e., gender/sex identity), costume (i.e., gender expression), and script (i.e., behavior) performing on a stage (i.e., social context). Morgenroth and Ryan's theatrical metaphor encourages psychologists to play with gender/sex, for example, by studying performances that "coincide with" or "branch from" (van Anders, 2015) audiences' expectations rather than only reinforcing them. Yet trans and other scholars and scientists like Charlotte Tate (Tate et al., 2014) have cogently highlighted the need to ensure that gender is *not* theorized or studied as merely "doing gender" rather than "being gender." Assuming that gender reflects only doing rather than being can and has been coopted to undermine or preempt some trans experiences. This (queer) work has ensured that queer science does not erase the being of gender that is central to many people's—including trans—lives and the ways they are oppressed. Tate's queer science builds in other ways from gender performativity, including constructing gender as multiple, as with her concept of the "gender bundle" that includes many forms of doing gender *and* being gender (Tate et al., 2014).

### **Openness**

The openness that queer and science share is a welcome reminder of the joy we take in our research and scholarship. Queer scholars often explicitly incorporate emotion and feeling into their work in ways that may be unfamiliar to scientists (e.g., Love, 2007; Stryker, 2006). Yet, scientists often describe their work as being fueled by passion and wonder. Both queer and science are characterized by a sort of all-encompassing and willful curiosity about the world, the meanings we make of it, the ways we do our research, and where we go from any one understanding. Both inhere an openness to new ways of seeing the world; indeed, they both

demand or require it. Queer science thus gifts us with a way of looking through what is thought about a phenomenon to a richer level of understanding it, and the joy and fun of caring to look deeper and the process of doing so.

The openness of queer science allows for and encourages “surprise” and flexibility in research methods. For example, Diamond and Butterworth (2008) set out to study women’s sexual trajectories—that is, shifts in sexual identities across time—yet discovered that four of their participants also experienced shifts in gender/sex identities away from or in addition to womanhood. Seeing these developments as rich opportunities for understanding the dynamic links between gender/sex and sexuality, they saw that multiplicity in gender/sex experiences and identifications can give rise to multiplicity in experiences of sexual desire (and vice versa).

Queer scientific methods also involve openness to what researchers see as legitimate data. For example, researchers often group participants with sexual identities that do not fit heterosexual, bisexual, or lesbian/gay categories into one of these groups anyway or exclude them (Centre for Gender & Sexual Health Equity, n.d.). Openness has encouraged researchers to dive into and study sexualities that exist outside typical definitions (e.g., heteroflexible, bicurious, mostly straight), allowing for more nuanced understandings of sexual diversity. This research has demonstrated that even heterosexuality can often be viewed as “elastic” and flexible, as with heterosexually identified men who have sex with men (Carrillo & Hoffman, 2018; Schrimshaw et al., 2018).

Important insights can result not only from openness to the ways people understand themselves, but how they engage with methods during research. For example, participants sometimes “speak back” to researchers, explaining how their experiences do not fit the predetermined options by writing in the margins of surveys or making verbal comments in

interviews. Several researchers have argued that this input, sometimes called “marginalia,” provides invaluable insight into gender/sex/uality as well as the ways our methods can fail to make sense of people’s experience of their sexuality (and many other scientific constructs; Fahs, 2016; McClelland, 2016; Stewart & Newton, 2022; van Anders et al., 2013).

Queer science is also open to exploring pleasure, including in potentially unexpected places and highlighting that “unexpected” is often defined by researchers and not the lived experiences of their participants. For example, scholars such as Boone and Bowleg (2020), Feinstein et al. (2020), Hargons et al. (2021), and Wang and Feinstein (2022) have found that research on Black women and Black gay, bisexual, and other men who have sex with men primarily focuses on risk and negative experiences, calling attention to a need for more research on Black sexual pleasure, intimacy, and love (Calabrese et al., 2015; Thorpe et al., 2022; Townes et al., 2021; Ware et al., 2020). Another example is research on gender pleasure, one often intense form of which is “gender euphoria” as coined by transgender people (Newman, 2018). Research on this topic has demonstrated that some gender/sex/ual minorities report experiencing distinct joy and comfort from their gender identities, gender expressions, and/or sexed bodies (Beischel, Gauvin, et al., 2022).

### **Challenge**

One of the main ways most scholars understand queer is that it challenges norms by boldly differing from accepted practice and questioning why those norms exist in the first place. Queer confronts norms and emphasizes the social value and pleasure in transgressing them (Warner, 1991). In this way, queer holds challenge in company with science, since even mainstream science also challenges and tests norms. Indeed, one of its hallmarks is that science challenges accepted wisdom and, moreover, that accepted wisdom or tradition is little (or no)

reason for continued valuation of an idea. Science is explicitly oriented around testing the assumptions we hold for granted, especially when they hold no evidentiary basis. In this way, queer science brings together the vibrancy of scientific challenge and its tests of assumptions with the boldness of queer's transgression of unaccounted-for traditions and norms.

Recent theoretical innovations in the psychological study of gender/sex/uality exemplify how queer science can challenge orthodoxies that have persisted despite flimsy evidentiary bases. For example, Tate et al. (2014) described how integrating theoretical models of cisgender and transgender identity development disrupts dominant psychological models of gender self-categorization. These had positioned transgender identity development as an active site of inquiry but also a problem to be addressed when juxtaposed with ignoring cisgender identity development, thus naturalizing it.

SCT is another theoretical approach that shows challenge, including to the notion of sexed bodies (and not gender, gender/sex, partner number sexuality, kink, or other phenomena) as the normative basis for defining sexual orientation (van Anders, 2015), reflecting gender/sex and sexual minorities' critiques of dominant definitions of gender/sex and sexual orientation and common ways that scientists measure them (Bornstein, 1994; Galupo et al., 2016; Galupo, Mitchell, et al., 2014). SCT also challenges "alignment normativity," or the general presumption that people's sexual orientations, identities, and statuses should "align" in particular ways, offering instead the concepts of branchedness and coincidence for describing how they configure along with empirical support for them (Abed et al., 2019; Beischel et al., 2021; Schudson et al., 2017).

Theoretical works have also upended traditional perspectives of sex positivity by calling for the integration of sex criticality into psychological assessments of positive, healthy sexuality

(Barker, 2013). For example, as an alternative to either sex-positive or negative (e.g., anti-porn) positions, Barker (2013) proposes sex criticality as reflecting an understanding of sexual agency as something that operates within multiple intersecting power dynamics rather than a polarized dichotomy of free choice versus structural forces. This enables both the celebration and criticism of sexual communities' practices without dichotomizing such them as overall good/pure versus bad/problematic.

Fahs (2014) also offers a queer challenge to sex-positive politics via anarchist politics. This challenge argues that the normative sex positive framework—which typically promotes the freedom to engage in more, diverse, and agentic forms of sexual expression—has become antithetical to its original goals by fostering a culture of sexuality that mandates women's openness to sex as a part of women's sexual liberation (see also Gill, 2007). Fahs proposes that the sex-positive movement integrate and promote negative liberty, which includes the freedom *from* social mandates that women must have sex, be sexual, and pursue sexual pleasure in order to be considered modern and liberated. Notably, this work has opened the potential for more nuanced visions of what sex-positive research can look like.

Other examples of how queer scientific inquiries have led to innovations in sexuality research include studies that have challenged normative assumptions about sexual desire and orgasm. For example, the heteronormativity theory of low sexual desire in women partnered with men challenges assumptions that “low” sexual desire is an issue of women's psychology or physiology, instead proposing that heteronormativity contributes to inequities and life experiences that detract from women's sexual desire (van Anders, Herbenick, et al., 2022). In other research about women's experiences with faking orgasms, LaFrance and colleagues (2017) opted to focus on women who *resist* faking orgasms, demonstrating novel insights into women's

experiences subverting normative orgasm scripts. Research on orgasm has challenged what it is and how it is conceptualized. For example, Herbenick and colleagues (2018) found that, despite nearly universal conceptualizations of orgasms as sexual, the physiological experience of orgasm is not actually always a sexual phenomenon, and not always in response to stimulation that could be in any way interpreted as sexual, as with abdominal exercises. Additionally, despite conceptualizations of orgasms as universally positive sexual experiences, research has shown that orgasms can be unpleasant and unenjoyable, cooccur with negative affect, and tied to negative outcomes challenging the universality of “orgasms = good” (Chadwick et al., 2019, 2022).

This work on sex criticality expands on others’ that promotes diverse – and specifically queer and/or crip<sup>4</sup>–notions of sexual pleasure. These incorporate facets of sexual experiences beyond orgasm (e.g., intimacy, empowerment, nonorgasmic physical sensations, etc.) into definitions of sexual satisfaction (Goldey et al., 2016; Hargons et al., 2018, 2022; Jagose, 2010; Jones, 2019; Loeser et al., 2018; McRuer, 2011; Thorpe et al., 2022; Tiefer, 2004). Together, this research further highlights the exciting potential that queer science’s challenge offers to a psychological science of gender/sex/uality.

### **Multiplicities**

Multiplicities are a hallmark of queer. Queer reminds us that what we think of as natural gender/sex/ual categories vary over time and place. For example, who counts as a woman or man is and has been contested, with differing definitions used in varying attempts to restrict rights (Fausto-Sterling, 2000). Similarly, what the gender binary contains and whom it polices all have

---

<sup>4</sup> “Crip” is a term adopted within disability movements and scholarship that reflects a reclaimed adaptation of the term “cripple,” which is mostly used in derogatory ways otherwise. Its adjective use refers to theory and perspectives that challenge dominant deficit perspectives of disability and demand a more expansive and accessible worldview and practice (McRuer, 2006).

differing answers over time and place (Bailey, 2016). Understandings of sexual orientations and identities vary as well: For example, is someone gay because they are a man who is sexually interested in other men, holds the identity of gay, sexually penetrates other men, likes being penetrated, expresses or is perceived to express femininity, and/or is a target of an antigay slur? Yes to all of these depending on context? Category boundaries are indistinct, in part because they have been populated and constituted variably over time and place. Given that few category boundaries are self-evident, universal, or natural, queer also pushes us to consider what categories mean and why, and to what end (Bem, 1995; Tate et al., 2014; van Anders, 2015). Queer approaches thus inhere multiplicities; for example, how a phenomenon thought to be singular can be opened up to show its multiple iterations, facets, or pieces, and the ways that phenomena thought to be distinct can be shown to share multiple features.

Science also attends to multiplicities, including with fields in the biological sciences that attend to ecology. Attending to local ecologies explicitly values and recognizes that biological phenomena occur in context, including the array of plant and animal species, weather, and lifespans. Indeed, the concept of local ecologies reminds us that life happens in close-knit connection with conspecifics, other species, land, and other dimensions such as time. It is perhaps obvious but worth highlighting how this tenet of bioscience—paying attention to local ecologies—takes for granted that life is coconstituted by its surroundings, events, and others in close or distant relation. Science not only makes space for multiplicities, it necessitates them.

Queer science brings science's attention to local ecologies together with the understanding of plurality from queer, to make for a science with space for multiplicities. Queer also adds explicit political considerations. Both queer and hegemonic science are political, of

course, but queer's political commitments to multiplicity are foundational and unapologetic, and this includes an antiessentialism.

Antiessentialism is intrinsic to queer's commitment to multiplicities, and highlights not only that social phenomena are neither singular nor universal, but that the costs of ideologies that would paint them so are high and disproportionately borne by those on the gender/sex/ual margins (Balzer Carr et al., 2017; Bem, 1995). For example, psychological essentialism (Gelman, 2003), which is defined as a pervasive cognitive bias toward perceiving social category membership as rooted in singular, natural, biological essences, is largely (albeit not exclusively) linked to negative attitudes about gender/sex/ual minorities (Grzanka et al., 2016; Schudson & van Anders, 2021). Beliefs that the categories of gender/sex/ual minorities and gender/sex/ual majorities are discrete, highly coherent entities, and defined wholly by their gender/sex/ual identities (e.g., as opposed to other aspects of selfhood) are all associated with cissexist and heterosexist attitudes. However, the essentialist belief that being a gender/sex/ual minority is biologically determined and immutable is often contemporarily associated with positive attitudes toward gender/sex/ual minorities (Grzanka et al., 2016; Schudson & van Anders, 2021). This association might be best understood as a reaction against heterosexist and cissexist discourses about gender/sex/ual identities as immoral personal choices rather than as a necessary antecedent to support for gender/sex/ual minorities (Diamond & Rosky, 2016; Hegarty & Golden, 2008). Certainly, beliefs that gender/sex/ual minority status is biological has been and continues to be associated with negative attitudes and actions, including violence in many times and places (Sheldon et al., 2007). Perhaps most compellingly, presenting people with antiessentialist, social constructionist ideas derived from queer theoretical approaches to understanding sexuality leads to more positive attitudes toward sexual minorities, which suggests that bringing queer

antiessentialism into our psychological science has powerful implications for social justice efforts (Fry et al., 2020; Grzanka, 2016).

Queer science's commitment to antiessentialism has led to empirical demonstrations that gender/sex/uality contains multiplicities that go beyond binary categories of woman/man, straight/gay, or even cisgender/transgender. Though most psychological research treats gender/sex as a categorical variable (e.g., woman/female, man/male), researchers have shown that many people, sometimes over half and including majorities and minorities, place themselves along various spectra of gender/sex that include genders and sexes thought to branch from their assigned sex (e.g., cisgender women seeing themselves as at least somewhat masculine; cisgender boys seeing themselves as something other than completely male; e.g., Baum et al., 2014; Beischel et al., 2021; Bem, 1974; Joel et al., 2014).

Sometimes a queer lens to multiplicity can make clear how attention to gender/sex diversity, even with inclusive intentions, can instantiate new binaries. For example, research that includes transgender and cisgender categories is an improvement over cisnormative research that presumes participants are cisgender. However, transgender and cisgender are often positioned as the only two options for gender trajectory (i.e., a person's relationship to their sex assigned at birth; Beischel, Schudson, et al., 2022). In contrast, research has demonstrated that not everyone falls into one of these two categories, and that an "allogender" category is a useful addition (Beischel, Schudson, et al., 2022), echoing narratives and lived experiences (Bornstein, 1994; Darwin, 2020; Diamond & Butterworth, 2008).

Sexuality research has demonstrated similar multiplicities to gender/sex. Since at least the 1940s, scientists have recognized that human sexuality can be understood in continuous ways (Kinsey et al., 1948, 1953). Modern psychological research makes clear that people fall along

various continua of sexuality (e.g., attraction to women, interest in multiple partners, desire for intimacy), but also that the ways people experience and conceptualize their sexualities often cannot be neatly categorized (Chadwick et al., 2017; Galupo et al., 2015; Joel et al., 2014; van Anders, 2015). For example, Galupo and colleagues (Galupo, Davis, et al., 2014; Galupo, Mitchell, et al., 2014) have demonstrated that many gender/sex/ual minorities view their sexualities as more fluid and contextual than can be represented on popular scales of sexuality.

### **Summary: Queer Science**

Queer science reflects interesting and promising meeting points between queer and science. We have focused on four: construction, openness, challenge, and multiplicities. In doing so, we have highlighted existing scholarship that falls into queer science, with a nod to future approaches. In this next section, we focus on feminist science.

### **Feminist Science and Gender/Sex/uality Research**

Like queer and science, feminism and science can seem worlds apart. Or, they can appear to meet only when one critiques the other. However, there are a number of ways feminism and science come together for a feminist science, and we focus here on four of these (see Figure 2): bias, truth, objectivity, and empiricism.

#### **Bias**

Most nonscientists understand science as unbiased, at least in theory, and indeed that is one of the goals of science. Mainstream forms of science aims to produce knowledge that is untinged by its practitioners' potentially distorted views, so that the same conclusion would be achievable by anyone (Haraway, 1988). Like these dominant approaches to science, the very core of feminism includes attending to bias, but specifically identifying and naming bias (especially related to gender/sex and intersecting power hierarchies), noting how bias is

supported by power differentials, and proposing ways to change the systems that allow bias to otherwise exist. This makes claims that feminism is biased—or that it would add bias to mainstream science rather than subtract it—ironic, ignorant, and harmful to the potential for science.

One approach to bias within feminism is with “situated science,” whereby scientists explicitly consider the ways that scientists’ own social locations impact our science (Haraway, 1988). For example, people in majority social locations are often unaware of (and resistant to knowing) the ways they overbenefit from systems, and take those systems and their outcomes as natural, given, good, and right. This negatively affects majorities’ ability or motivation to mitigate their own biases. Moreover, social locations and lived experiences expose us to some problems and shield us from others. Accordingly, they can shape what we as scientists know, can know, or can think to know, impacting our questions, funding, materials, analyses, conclusions, reception, and more. Situated science—feminist science—calls on scientists to think about our social locations, and the ways we benefit from and are disadvantaged by them, what knowledge we might gain from them, how any privilege-related bias might impact our science, and what we can do about this.

For example, cisgender researchers have been historically overrepresented as experts on transgender topics, reinforcing the dominance of cisgender perspectives on gender, whereas transgender people have been underrepresented as knowledge producers about their own lived experiences (Billard et al., 2022; Galupo, 2017). Although cisgender people’s beliefs about gender are by no means unitary, cisgender researchers’ experiences of gender (e.g., lacking firsthand experience of transphobia) shape how they both ask and answer research questions about gender. Certainly, cisgender psychologists have facilitated the spread of pathologizing

perspectives on transgender experiences (Ansara & Hegarty, 2012; Riggs et al., 2019; B. W. Vincent, 2018). Yet, when researchers marginalized by social location oppose the exclusion of perspectives gained from lived experience and/or scholarship, they are commonly minimized as inappropriately ideological, which invisibilizes the ideological and sometimes harmful nature of privileged groups' perspectives (Ashley, 2019).

Dominant forms of science addresses bias less explicitly. One way they aim to do so is with the presence of enough diversity among scientists that competing biases would cancel out as these different and diverse scientists address the same research question. Whether this diversity is meant to refer to social location, positionality, and/or worldview is not always clear, but the idea is that it is a diversity that will lead to a canceling out of biases full stop. Unfortunately, this is more aspirational than real: scientists are not that diverse by many metrics (Bernard & Cooperdock, 2018; Burke, 2019), and there are no explicit or formal mechanisms within hegemonic science to promote the diversity needed for this method of addressing bias, including across or within fields, much less specific topics or research question. Indeed, some mainstream scientists actively work to undermine attempts to diversify mainstream science by calling for ignoring social locations, working at cross-purposes to this core tenet of science—though of course many scientists do work to diversify science. Moreover, this approach presumes that “specificities” tied to people’s social locations, positionality, or worldviews are *error* to be corrected for or canceled out, rather than meaningful and evidentiary conclusions about the world derived from lived experience, or willfully oppressive or ignorant positions that involve reaping benefits from inequities.

Fortunately, feminist science provides a way for science to enact one of its routes to mitigating bias, for example, by *attending* to social locations. For example, research suggests

that psychology journal articles with men as lead authors are more likely to use generic language to describe their results than articles with women as lead authors (DeJesus et al., 2021). These generic statements broadly generalize about groups and have been linked to the development of essentialist beliefs and stereotyping (Hammond & Cimpian, 2017). Attention to the social locations of knowledge producers (which includes scientists) is necessary for these kinds of insights; collecting and sharing data on this bias can be used to encourage its mitigation.

Feminist science also challenges how normative scientific commitments invisibilize structures that shape who is able to (safely) do science. For example, the pervasiveness of sexual harassment manifests in varied sites of academic life, including collecting data or attending research conferences, which makes for hostile environments for marginalized scholars, especially women and gender/sex minorities and/or those of color (Clancy et al., 2014; Herbenick et al., 2019; Lewis Jr., 2020). Sharply increasing expectations for academic labor and travel can especially disadvantage some disabled researchers/researchers with disabilities as well as those with other care responsibilities (Brown & Leigh, 2018; Yerbury & Yerbury, 2021). And, academic conference spaces commonly lack gender-neutral restrooms and childcare or lactation spaces, which can endanger or prevent many scholars from attending, including primarily those who are transgender, nonbinary, gender/sex diverse, and/or primary caregivers who are usually women (Calisi & a Working Group of Mothers in Science, 2018; Scheim et al., 2019). The feminist science acknowledgment of scientists as socially situated—including embodiment—facilitates an understanding of scientists' diverse embodied needs, means for communicating these, and encouragement to change structures to ensure support—actually increasing diversity of scientists, a tenet even of mainstream science to avoid bias.

Moreover, insights from feminist science help disentangle the notion of “bias” from phenomena like subjectivity, social location, positionality, identity, and experience, since these concepts are so often conflated. Bias is the *unjustified* favoring or insertion of one point of view that distorts reality and approaches to it, including within science. Points of view are not inherently biased, and neither are the factors that are tied to them, including social location, identity, or experience. And these can be an influence or source for valuable insights for science. Thus, far from equating bias to positionality or subjectivity, bias in dominant science is the outcome of *ignoring* positionality and subjectivity. By attending to one’s own and others’ social locations as with situated science, feminist science provides for the reality that science is never “untinged” by its practitioners or culture but *can be* less warped—and less biased.

### **Objectivity**

Objectivity is a clear hallmark of science, though potentially only presumptively so in hegemonic science. Objectivity is related to bias, since objectivity holds that either mainstream science is objective (as biases will cancel out), or that scientists themselves are objective and thus interchangeable and/or their social locations are irrelevant to the phenomena they study. Haraway calls this the “god trick,” as if a godlike disembodied knower with neither subjectivity nor social location was the one doing science, not us mere socially located humans (Haraway, 1988). Many traditional science readings of objectivity assume that it requires the complete separation of science and scientists from who we are. This might be an interesting ideal, theory, or goal, but is unachievable in reality, as decades and even centuries of feminist scholarship have shown (e.g., Cole, 2009; Fausto-Sterling, 2000; Haraway, 1988; Harding, 1986; Somerville, 2000).

The need for more attention to objectivity in science is often downplayed, and there is little guidance on how objectivity should be “done” or could be confirmed (e.g., according to mainstream science, in what ways are we, as embodied humans, supposed to step outside ourselves? How do we know that we or others are being objective?). Given the well-documented failures and harms of the presumption of objectivity, it is perhaps not surprising that many feminist scholars have put objectivity aside, nor is it surprising that other feminist scholars have considered how to bring the reality of science closer to its ideal by engaging with what feminist approaches to objectivity might entail, with varied and sometimes competing approaches.

“Strong objectivity” (Harding, 1995) provides one important feminist approach to objectivity. It considers how objectivity is strengthened by subjective considerations. Feminist science calls for us to consider how social locations matter for scientists, with strong objectivity as one approach to doing so, calling for us, in community with other people, to focus on strengthening our objectivity by actively reflecting on our social locations and the ways they might challenge our and others’ objectivity in our science. Strong objectivity calls on us to consider the tools of objectivity and how we can maximize the likelihood of their success in light of our and others’ subjectivities.

Some researchers have demonstrated the benefits of actively reflecting on the assumptions built into seemingly objective psychological tools to build more empirical ones. For example, researchers validate their measures across participants, ideally of diverse identities, to demonstrate objectivity and generalizability. Yet this approach to objectivity presumes that constructs have one best operationalization across diverse social locations—ironically at cross-purposes to the very point of attending to that diversity. People’s experiences of phenomena—including psychological constructs and including gender/sex/uality—are shaped in part by their

social location. As such, diversity might not just result in different scores on the same constructs but different contents of a scale or its factors. For example, Chadwick et al. (2017) explored how gender/sex/uality might actually coconstruct a measure of sexual desire, resulting in experience-specific factor structures. Here, intimacy was a factor for sexual minority and majority women and men, yet included different items that, not surprisingly, reflect gendered and sexual norms (e.g., feeling special and protected for heterosexual women but not heterosexual men). Scale development that attends to the subjectivity of lived experiences can thus result in more objective measures and metrics for their development.

Similarly, McClelland et al. (2020) evaluated quantitative measures of abortion attitudes in the United States and found that survey items were steeped in sexist and racist stereotypes. Far from “objective” measures of attitudes, they argue that, in scale development, researchers rely on culturally circulating images of what is seen as “legitimate” reproduction. Surveys with these scales can then go on to strengthen sexist and racist cultural images because they are treated with the respectability afforded to science. Strong objectivity would include these insights into improving these measures or starting anew.

Science and (some tenets of) feminism thus both hold objectivity as a priority and goal. Feminist science calls for us to explicitly monitor the objectivity we as scientists know is necessary to the success of science but constantly threatened, and work to mitigate and prevent those failures we can know, predict, and/or learn about.

### **Truth**

Canonical science’s view of truth tends to hold that each discrete phenomenon at its most indivisible has one truth that is universal, and perhaps that scientists are continually improving upon methods in ways that bring us closer to that truth. Feminist scholars and others have shown,

however, that accuracy is often insufficient to help a more truthful account supplant a less accurate one (Fujimura, 2006; Kuhn, 2012). That is, research shows that truth is often not enough to merit scientific support.

Truth holds a different position in feminism. Feminism is often positioned as a postmodern endeavor, which could be taken to mean envisioning research as the production of, or listening to, multiple stories, none of which are more true than others and all of which reveal something about the world. Clearly there are multiple views and realities of discrete phenomena, and they do provide insights into the world. Yet feminist approaches to truth are largely characterized by understanding truths can be multiple and are always contextualized (Haraway, 1988; Harding, 1995). In other words, X may be true in this time and place but not others; some facts are true across all or most contexts, and others are profoundly local. This does not mean, however, that all feminist approaches to multiple, contextualized truths reflect a commitment to truths-as-stories, if by stories we mean only interesting narrative exercises, and thereby that all truths are “equal.” Many feminist scholars argue that, yes, there are multiple truths, but it is our job as “knowers”—thoughtful, critically engaged people who reflect on our social locations—to adjudicate among truths when needed, as some truths are more accurate, do less harm, are more liberatory, etc. (Longino, 1996). This is especially true for feminist scholars working at the margins, with communities, and in applied and activist spaces, where the impact of truth claims on actual people’s actual lives is clear.

Truth is therefore a meeting point between feminism and science. Both have longstanding commitments to exploring and understanding truths. In feminist science, there are multiple, contextualized truths, and our job is to explore, understand, and potentially integrate these and try to discern—when helpful and/or appropriate—which are more accurate and just.

Feminist psychologists have provided numerous models for how to contend with multiple, contextualized truths at once. For example, Diamond et al. (2020) explored the multiple meanings of women's "sexual fluidity," theorizing at least four related but distinct sexual phenomena: (a) general arousal and attraction toward women's less-preferred gender, (b) variability across contexts in arousal and attraction towards women's less-preferred gender, (c) branchedness between the genders of women's attractions and the genders of their sexual partners, and (d) variability across time of women's sexual attractions. These various operationalizations produced decidedly different pictures of participants' sexual fluidity. This maps onto SCT, which holds that a person's sexuality is not one singular entity, but rather a multifaceted configuration that may be branched or coincident (van Anders, 2015).

Work from feminist psychologist Bay-Cheng (2019) also highlights how concepts such as sexual agency, exploitation, and safety can exist simultaneously for young women. Researchers define sexual agency in terms of choice, control, freedom, and responsibility, and avoiding exploitation and maintaining safety (e.g., facilitating condom and contraceptive use, sexual negotiations with partners, health care service utilization). This can frame young women having unwanted sex with men who pressure them to do so as a problem of young women lacking sexual agency. Yet this diverges from the social and material reality of their lives, where some young women choose to have unwanted sex with partners to avoid threats of violence and instability at home, or because sex offers opportunities (e.g., housing, emotional or financial support) to pursue educational goals. In these cases, it becomes clear that sexual agency is present—these young women act to influence their immediate experiences and/or their lives through their sexuality. And, exploitation can be present when contextual factors limit women's options for exerting their agency (Bay-Cheng, 2019; Gavey, 2012; McClelland, 2010).

## **Empiricism**

Empiricism is the last meeting point we cover between feminism and science. A hallmark of science is to seek observations from outside one's own experiences to understand a phenomenon we want to learn more about, rather relying solely on our own existing knowledge, experiences, and intuitions. These observations become data, or the stuff of science, because we collect them systematically. The systematicity of observations is often an ideal rather than reality, as the many egregious "scientific" practices of racism, sexism, colonialism, and more have shown us and continue to demonstrate (Bailey, 2016; Fujimura, 2006; Jordan-Young, 2010; TallBear, 2015). What makes these practices often problematic is the selective – rather than systematic—collection of observations to suit the purposes of, say, white supremacy, patriarchy, cisgenderism, or settler colonialism (Riger, 1992). However, at its best, science uses empiricism—data, that is, collections of systematic observations—as part of its practice.

Yet observations, and even data, are also a hallmark of feminism. Feminists do not come to see the world as inequitable on the basis of gender and intersecting systems of power by accident, choice, or uninformed opinion. Feminists observe(d) the world and its inequitable treatments, share(d) these observations with each other, and then use(d) this information to draw evidence-based conclusions that provide the basis for naming inequities and working to change them. Feminism is inherently empirical.

Yet, empiricism is often seen as relevant to science only, and not by accident. Indeed, another hallmark of hegemonic science is, explicitly or implicitly, to claim that *only* science is empirical. Given who was allowed to produce science for most of its existence (majority men), and the value placed on scientific knowledge, this is not surprising. This sequestering of

empiricism has protected it for majority men scientists and excluded all others as knowledge producers.

Feminist science can use empirical approaches that include those from mainstream science, including hypothesis testing, as well as those from feminism. Indeed, feminism makes a provision to value knowledge that relies on the data an individual or community has already collected. This is because feminism recognizes knowledge gained from lived experience.

Lived experience as data within feminist science matters because it provides a way to acknowledge the expertise people have gained through focused, intensive, and systematic engagement with their experiences; knowledge that might not be gained in any other way and that contradicts a universalist approach that sees all people as potentially equal contributors to each and any aspect of truth. This epistemic privilege (Harding, 1986), or the knowledge that people have about socially located phenomena tied to their experiences of oppression from critically reflecting upon their lived experiences and its value over what those in power might conclude about the same phenomena, is crucial to feminist science. For example, intersex people have worked for decades to convey the truths of their medical experiences, that is, that forced surgeries, secrecy, stigmatization, objectification, and gender policing have harmed their lives—largely in ways not only unheard by those in power but actively pushed back against (Pagonis, 2017; Wall, 2015). Both science and feminism use empiricism—observations collected to form data we use to generate insights about the world. Feminist science just acknowledges the reality that there are multiple forms of empiricism that provide meaningful and impactful knowledge.

Qualitative research is an arena of psychology that clearly demonstrates the value of upholding lived experiences as important data to inform conclusions about issues of power, race/ethnicity, and gender/sex/uality. Brassel et al. (2020) exemplified this in a focus group study

with Black and white men exploring their relationships to power and masculinity. They found that, compared to women, men generally associated “manhood” with privileges and responsibility that results in both benefits (e.g., status) and costs (e.g., stress). Yet masculinity is also racialized: Black men expressed a masculinity that was more relational, and white men had narrower social networks of responsibility. This kind of feminist qualitative research demonstrates the value of paying attention to epistemic privilege and building psychological theories from people’s lived experiences for more empirical, accurate, and just truths.

### **Summary: Feminist Science**

Feminism and science have various meeting points that make for a feminist science. Our focus was limited to four: bias, truth, objectivity, and empiricism. In describing these, we highlighted gender/sex/uality research that could be said to fall within feminist science, as well as work from other feminist disciplines that explores principles of feminist science.

### **Challenges for Feminist/Queer Science**

Despite the promise of feminist/queer psychological science for understanding gender/sex/uality, there are a number of challenges, barriers, and potential pitfalls (Table 1). Some of these are epistemological, and related to issues that feminist/queer science tries to grapple with but cannot resolve or has not yet resolved within understandings of how to approach knowledge. Some are empirical, related to larger histories or presents of feminist/queer scholarship and hegemonic science. And, some of these are methodological, related to potentially clashing or unresolved approaches to knowledge production.

### **Epistemological Challenges to Feminist/Queer Science**

#### ***Conflicting and Problematic Understandings of Feminisms and Queer***

We have discussed feminist/queer science as if the intertwining of feminism and queer were conflict-free, but the terms have different definitions, histories, and practices that can exist in tension. For example, one of feminism's central commitments is addressing gender inequity, which typically involves attending to gender/sex/ual categories—and can be seen as reifying them. Yet, one of queer's central commitments is eradicating the categoricity or staticity of gender/sex/uality—which can be seen as dissolving the foundations for social action on these bases. These very different epistemological commitments can present a challenge to the actual doing of feminist/queer science.

One approach to or thread within feminism—essentialist feminism—is especially problematic for feminist/queer science (Spelman, 1991). Like sexism, essentialist feminism essentializes women and men, clashing with the antiessentialism of queer epistemologies. Essentialist feminism positions women as superior to men because of women's ostensibly “special” essence, and thus conflicts with other feminisms that recognize how gender/sex is not experienced in singular ways, and that oppression and privilege can be tied to intersecting social location axes (e.g., not just “woman” but “Black woman” or “disabled woman,” etc.).

Essentialist feminism presents other conflicts. For example, it often is used to restrict the rights of gender/sex minorities by policing who counts as women, rather than increasing gender/sex rights or loosening the normativities of gender/sex categories (B. Vincent et al., 2020; Williams, 2020). This includes biological essentialisms, for example, with excluding women with higher testosterone from competing in women's athletic categories, and thus defining “woman” by low testosterone against empirical evidence (Karkazis et al., 2012; Pape, 2019; van Anders et al., 2017). It also includes social essentialisms, as with excluding women from women's spaces if they have not lived their entire lives treated by others as women (and girls),

and thus defining women by “shared” experience, even though intersectionality makes clear that there is no one “woman’s experience” (Bettcher, 2013; Collins, 2000b).

Essentialist feminism is a pitfall for feminist/queer science; it focuses on the recognition of women’s supposed superiority and policing the boundaries of womanhood as goals. In contrast, feminist/queer science focuses on ending gender policing, redressing antifemininity/femaleness/womanhood, or pushing back against promasculinity/maleness/manhood wherever these appear. This feminist/queer science approach aligns with feminisms that focus on critiquing how patriarchy harms people of all gender/sexes, albeit not identically or equally (e.g., hooks, 2000; Serano, 2007). For example, Hoskin (2019) interviewed gender/sex/ual minorities of many gender/sex identities and experiences, finding that femmephobia, or the devaluing of femininity and the policing of “appropriate” femininity, was at the root of many of their experiences of discrimination. Focusing on women’s supposed superiority or policing the boundaries of womanhood would not help address the issues experienced around femmephobia.

Another form of feminism that presents pitfalls for feminist/queer science includes those that frame removing restrictions on women’s individual choices as the solution to feminist goals (for critiques of commercialized, post-, and neoliberal feminism, see Bay-Cheng & Eliseo-Arras, 2008; Goodkind, 2009; Hirshman, 2006; McRobbie, 2004). Such feminism posits that the primary obstacle presented by sexism is its limitation on women’s ability to make choices, such that the mere ability of women to make choices is (a) feminist and (b) reflective of the absence of sexism (Hirshman, 2006). This neoliberal take focuses on individuals—and typically what an individual can buy, what occupational choices they can make, or what labor they can put into their appearance—rather than systemic inequity, arguably serving to reregulate women’s

engagement with their own subjugation through a language of personal choice and empowerment (McRobbie, 2004). Insidiously, such feminism can create the false impression that any science a woman does is feminist because she is a woman who chose to do the science, rather than because her science met feminist goals like attending to inequities based on gender/sex/uality and intersecting axes of oppression. In contrast, feminist/queer science explores scientists' motivations, methodologies, epistemological commitments, and impacts. For example, Bowleg (2008) reflected on her methodological missteps while conducting research with Black lesbians that assumed participants could compartmentalize their identities into separate categories of Black, lesbian, and woman. Bowleg noted that her own identity shaped her research interests but, crucially, it was her engagement with Black feminist literature that helped her identify how her work had taken an additive approach, rather than an intersectional one—the latter of which better captured how participants conceptualized their identities as Black lesbian women.

One challenge to feminist/queer science reflects a shared issue within feminism and queer. In feminism, there is a long history and present of struggle to ensure that it does not center majority women's experiences, in part because so much of it has. This holds also for queer, where many queer scholars have focused on and elevated whiteness, able-bodiedness, and those of binary gender/sex. This is one reason why queer of color scholarship and/or quare (Ferguson, 2018; E. P. Johnson, 2001) work exists, because queer theory was excluding queer insights and labor from scholars of color, seeing them as marginal or irrelevant to the “main questions” of queer theory, which were largely defined by white scholars in positions of (relative) power. There is a similar reason why trans studies and intersex studies exist separately from queer scholarship, because queer largely ignored experiences related to embodiment yet embodiment is key to many experiences of oppression for intersex and/or trans individuals and communities

(Morland, 2009; Prosser, 1998). In contrast, feminist/queer science is built with insights that are from and meaningful to those on the margins *of the margins*, which is a key point. To make meaningful movement toward liberatory aims, forms of knowledge production about marginalized experiences—including feminism, including queer—need to avoid attending only or mainly to the most majoritarian of them (e.g., men in scholarship on racism, cisgender women in feminist scholarship, white people in queer scholarship).

Another challenge to feminist/queer science is the criticism of queer theory as being opaque, inaccessible, and purposively dense, an accusation also held against some feminist theory (especially queer feminist theory). This matters because, if theory is aimed to support, respond to, and promote praxis or social change but is inaccessible by those outside a limited circle, how can it meet its ostensible goals? One notable feature, however, is that many of these attacks are leveled *only* at queer and feminist scholars, as if they were the only academics to use dense, specialized language. Yet, most scholars in most disciplines use specialized language to discuss their work, language that requires specialized training and education, and few outside of feminist or queer authors are attacked for this. In fact, many majority men are celebrated for the intensity or denseness of their writing. The ability to read a physics article would require considerable knowledge of physics, but few would level an accusation of “denseness,” “unreadability,” or inapplicability to real-world problems because of this. Moreover, criticisms about queer theory were often leveled by those who seemed to feel they should be able to understand queer theory (e.g., feminist scholars who are not doing queer theory; philosophers who were not doing queer philosophy) but may not have understood that it reflected a new discipline and not merely a sub- or subordinate topic within the one they knew. Feminist/queer science is useful in this way, because it covers such a breadth of topic and disciplinary approach

that it does not take for granted that knowledge in another discipline or field will be easily or automatically intelligible.

### *Scientism*

Scientism is the belief that science is the only and/or best way to know about the world (Hayek, 1942). Scientism and science are not the same; in the same way that heterosexuality need not be heteronormative (i.e., positioning heterosexuality as better and more natural than minoritized sexualities), science need not be scientific. Yet it often is. Feminist/queer science instead sees science as (a) one of many partial and valuable ways of knowing about the world, (b) a good though imperfect way to approach some kinds of knowledge about some kinds of things, and (c) potentially the best though imperfect way to address some specific and discrete questions, as other ways of knowing are about other phenomena (Haraway, 1988; Harding, 1993). Moreover, far from being the best and/or only way of knowing about the world, feminist/queer science understands that research shows how mainstream/traditional science is deeply flawed, providing limited, distorted, and harmful knowledge if practiced in unaltered ways. Scientism thus presents an epistemological challenge to feminist/queer science. And, feminist/queer science's commitment to rejecting scientism presents a tension for dominant regressive approaches to science. However, it also provides valuable ways forward. For example, in moving beyond scientism, feminist/queer science makes clear that human sexual desire is not best explained by scientific theories that focus exclusively on androgens but by attending to lived experiences tied to oppression (Bay-Cheng, 2019; Tiefer, 2004; van Anders, Herbenick, et al., 2022).

### *Privileging of Theory/Basic Scholarship over Practice/Applied Scholarship*

Western cultures have long privileged certain types of labor over others, with material and conceptual value afforded to the intellectual (head labor) tied to higher socioeconomic status over either the physical (hand labor) or caring (heart labor) tied to (also gendered) labor of working class people (Rose, 1983). This replicates itself in mainstream science and in ways that intersect with gender/sex/uality and minoritized identity statuses. For example, though theory comprises a small portion of science, the highest levels of the most theoretical disciplines like mathematics or theoretical physics are dominated by men, are seen as the “harder” sciences, and their practitioners are vastly more likely to be valued as “brilliant” and “geniuses” (Leslie et al., 2015). In contrast, scientific disciplines that involve collecting data—which are still often dominated by men but include more women than disciplines seen as “hard” science—are valued less and seen as “softer,” perhaps reflecting hand labor (as ironic as that might be to physical laborers!; Light et al., 2022). Further yet, science that attends to living beings in social context, and especially affect of any kind, is typically seen as an even lesser form of science within dominant views of science, arguably reflecting heart labor. For these and many other reasons, research that attends to social context from the perspective of researchers who are marginalized by majority treatment of the phenomena they study (e.g., researchers of color studying racism) and/or occurs via collaboration with community stakeholders (e.g., critical participatory action research) has been historically suppressed within psychology (Fine, 2013; Neville et al., 2021). Hegemonic science’s privileging of head labor and antipathy toward the context dependency of knowledge claims can lead to a devaluation of feminist/queer science on gender/sex/uality because it relates to social context and intimacy. Moreover, it can be a context for some gender/sex/uality researcher to try to “remove” or “control for” as much social context as possible to share in the authority and respect afforded to the harder sciences.

Theory and basic scholarship are also privileged over applied work within many feminist and queer disciplines for the same reasons, that is, the privileging of intellectual labor. Accordingly, feminist/queer scholarship that directly measures inequities or seeks to materially support the oppressed is often devalued relative to more theoretical or general work (Spade, 2020). These kinds of devaluations can further marginalize marginalized scholars (e.g., scholars of color), who are more likely to conduct applied research than socially privileged scholars (Settles et al., 2021). Indeed, theory from or for these groups is often valued by majoritarian scholars only when it is seen as disentangleable from the very needs the theories were created to help meet. Feminist/queer science can thus be devalued within feminist/queer scholarship for similar reasons as within science.

In parallel, but for its involvement of practice (e.g., data collection, wrangling equipment, statistical analysis), feminist/queer science can be devalued compared to feminist/queer theory. Sometimes, this division is elided, as if the actions involved with science practice and theory could be collapsed by sheer will. Instead of trying to devalue theory, raise the value of practice, or elide their difference, feminist/queer science needs to subvert the underlying hierarchy of labor valuations, hopefully joining in shared project with others doing this work.

### **Empirical Challenges**

#### ***The Justifiably Hard Sell of Science in Feminist/Queer Spaces***

Hegemonic and mainstream science about gender/sex/uality has a sordid history of excluding, attacking, marginalizing, and restricting the rights of those in lower-power positions within social systems. Indeed, dominant approaches to science have long been a handmaiden of colonialism and an engine of racism (Gough, 1968), including around gender/sex/uality. This is not surprising, given that science in a sexist or homophobic society will tend to be sexist and

homophobic unless explicit antisexist and antihomophobic approaches are incorporated.

Consider, for example, that commonplace science was—and in some cases still is—used to justify giving lobotomies to men sexually attracted to other men, clitorectomies to women with sexual interests or clitorises deemed too large, and forced sterilizations on women of color, especially in the Global South (Katz, 1992; Smith, 1995; Smith & Hegarty, 2021). The notion that science somehow automatically sits outside ideology is a naïve and antiempirical view of science, unsupported by scholarship (e.g., Fujimura, 2006). Yet, mainstream science education rarely teaches this. Instead, dominant, scientific perspectives on science tend to valorize its practitioners and scientific outcomes. Feminist/queer scholarship is usually left to identify and document the harms of dominant forms of science around gender/sex/uality (e.g., Serano, 2010). Given this, many feminist and queer scholars have wondered if science around gender/sex/uality is recuperable at all.

Given science's baggage, feminist/queer skepticism toward or rejection of gender/sex/uality science is not only unsurprising, but warranted and rational. But there are no pure academic disciplines that carry no harm or baggage; from, for example, History's assumptions that women did not matter to or for it, to English's beliefs that gender/sex/ual minorities could not and did not write or speak about their existences in ways that mattered, to Anthropology's treatments of culture that ignored or exoticized gender/sex/ual minorities (Stone, 2006). Their epistemological commitments and methodological approaches are no less harmful than those of hegemonic science when used in the service of a majoritarian status quo. As such, the existence of feminist and queer successor versions of those disciplines carries promise for feminist/queer science.

Moreover, though canonical forms continue to carry and do harms like other disciplines, science also—like other disciplines—can be progressive as well. Like these other disciplines, other approaches to science have also been an important part of valuable antihomophobic fights or securing rights for women (Hull, 2017; Starheim, 2019). Feminist/queer approaches have transformed research within many disciplines, and provide a way forward for feminist/queer science.

### *Antagonism to/Ignorance of Feminism, Queer, and Science*

There is clear antagonism to and ignorance of feminist and queer approaches, as well as increasingly toward science. Even within science, there is a lack of mechanisms for scientists to learn about the tenets of science (vs. just learning to do science). As a result, some see science as a method, and feminism as an ideology, whereas both are epistemologies with methodological norms and ideological commitments. Yet, because “ideological” is frequently used as an insult, people often lose sight that “having an ideology” is not inherently problematic; it is the content of the ideologies and/or their deployment that can make them so. This is made clear with other ideologies that are justifiably welcomed by scientists, for example, ethics, conservation, safety, etc.

For example, attending to gender/sex/ual minorities is often seen as ideological (which it is) whereas the more common scientific practice of focusing on majorities is not seen as ideological (but it is). Yet both represent an ideological as well as methodological decision. Moreover, focusing on majorities and defending this as nonideological further marginalizes gender/sex/ual minorities, impoverishes our understanding of gender/sex/ual diversity, and denies self-knowledge to those already marginalized (Ashley, 2019; Blair, 2014; Dotson, 2012). Feminist/queer science carries an explicit ideological commitment to the world as it exists,

including acknowledging and attending to minoritization, which can make for more just, empirical, and accurate knowledge.

The antifeminist and antiqueer sentiment that pervades culture stems from cultural institutions that can include hegemonic approaches to science. And, it reflects the reality that most nonfeminists learn about feminism from those who are not feminists, often through negative cultural depictions of feminists (Robnett et al., 2012). Many mainstream scientists who do cite feminist scholars cite only one, often one whose views are outdated or even antithetical to many feminist projects. For example, scientists might cite feminists who see no value in science or materiality rather than those who do. This can (often intentionally) make feminist/queer science hard to imagine, understand, or appreciate.

Many believe that feminism is only about women (including some feminists), which can be a challenge for science. This is because almost all of science has traditionally excluded women as authorities from its practices and spaces. Even within the 20<sup>th</sup> and 21<sup>st</sup> centuries, women were not allowed into some science buildings or classrooms—and mainstream science has included focused efforts to erase women’s contributions to scientific knowledge (Schiebinger, 2004). Moreover, because gender is understood as synonymous with women by some, that feminism introduces women is also seen as introducing gender into spaces where social context and political considerations are supposed to be irrelevant because of scientific commitments, often unstated. Many see women, gender, and/or feminism as thus challenging the “neutrality” of dominant forms of science—for example, men who study women’s sexual desire are objective, but women who do are self-interested; cisgender people who studied trans people’s experiences are neutral, but trans people who do are biased (e.g., Ashley, 2019). Indeed, it is largely women who have often been the ones to bring feminist concerns to mainstream science, as it has largely

been trans people to bring concerns about cisgenderism and transphobia, and LGBTQ folks about heteronormativity and homophobia, since those experiencing oppression are the most likely to recognize it, name it, and work to redress it (Ansara & Hegarty, 2014; Brooks, 1981; Carpenter, 2018; Collins, 2000a; Haraway, 1988; Stewart & McDermott, 2004). So, the antagonism toward feminist/queer science from some within hegemonic science belies, in part, an antagonism toward women and gender/sex/ual minorities, as well as to issues of social justice and equity, rather than being about resisting ostensible challenges to science's neutrality. This antagonism also works to protect scientists in positions of institutional and/or social power who may feel challenged by the redistribution of power that can come from feminist/queer critiques of hierarchy; after all, those who benefit from inequities are rarely quick to give these benefits up.

The anti-queer sentiment within hegemonic science relies on more of a profound ignorance of queer approaches. Those who resist queer often do so out of unstated scientific commitments. For example, within academic spaces, queer scholarship most commonly comes from humanistic disciplines; what can they contribute to Science? And, queer is rooted in poststructuralist foundations; if science is "just" a story about the world like any other, where does that leave science as an authority, including as "the" authority? Yet feminist/queer science doesn't undermine the utility of science; it undermines the scientism of hegemonic science, highlighting the important contributions to knowledge—and to science—other disciplines have made and can make, and expanding our notions of who authorities are and can be—in ways that ultimately improve science and our knowledge.

### **Methodological Challenges**

#### ***Quantitative Versus Qualitative Methodologies***

Scientific approaches to gender/sex/uality tend to use methodologies characterized by systematization, experiments, and, in general, quantitation. This reflects mainstream science's epistemological commitment to one truth, and that a phenomenon can be best understood by averaging out error associated with various instantiations of it. In contrast, feminist and queer approaches to gender/sex/uality often use methodologies characterized by qualitative approaches that explicitly make space for contextual, structural, and/or individual experiences (Marecek et al., 1997). This reflects epistemological commitments to multiple truths, situated knowledge, and complexity and contextualization. But these methodologies can be as clashing as the epistemologies that inform them, raising tensions for feminist/queer science.

The use of methodologies associated with science can be seen as carrying the baggage of hegemonic, masculinist, and white supremacist science, including its scientism and harm. Even scientific (or scientific) terms like “capturing” data or “discovering” a phenomenon can reveal a commitment to pinning down or essentializing phenomena in ways that deny the importance of context and the active role of scientists as knowledge-producers rather than just “finders”. However, as most academic disciplines have had antiliberatory intentions, tendencies, or impacts, most methodologies have also been used in antiliberatory ways, and it is unlikely—and arguably essentializing—to position some as inherently more regressive than others rather than having had more regressive impact, for example (Hammersley & Traianou, 2012; Stacey, 1988). Following other recuperative efforts, feminist/queer science does use some of the methodologies of mainstream science, informed by feminist and queer political values (Fine, 2013; Riger, 1992). These include experiments and quantitation, which provide important insights into oppression around gender/sex/uality and ways for gender/sex/ual minorities to thrive. For example, feminist/queer psychologists studying prejudice have used experiments to reduce

gender/sex/ual majorities' prejudice toward minorities (e.g., Fry et al., 2020), and argued for the use of complex quantitative models to facilitate person-centered approaches to understanding patterns in prejudice (Grzanka, 2016).

### ***Minority-Inclusive Methods and Gender/Sex/ual Majorities***

Feminist and queer methodologies often attend to marginalization and try to minimize the disempowering impact of science on minoritized groups, in what might be called “minority-inclusive” approaches (van Anders, Schudson, et al., 2022). Yet not all feminist/queer science is conducted with minoritized groups. Focusing on majorities can be a critical way to understand gender/sex/ual diversity, including “studying up,” or how those in positions of power manage their and others' gender/sex/ualities (Nader, 1972; van Anders, Schudson, et al., 2022). Minority-inclusive methods that seek to empower participants and counter scientism can unintentionally *overempower* gender/sex/ual majorities who are *already* in positions of social power. This can work to reify gender/sex/ual majorities' sense of privilege and centrality, thereby countering the goals of feminist/queer science. For example, minority-inclusive methods that aim to facilitate participant agency, such as allowing participants to steer the conversation, can overempower heterosexual men to make unwanted sexual advances to women researchers (van Anders, Schudson, et al., 2022). And scholars have described how majority white men can feel “safe” enough in private interviews to comment in ways that retrench their masculinity and provide platforms and implicit support for their racist claims (Cabrera, 2019).

Feminist/queer science does need to be minority-inclusive, but it also needs to be “majority-situating” (van Anders, Schudson, et al., 2022). Majority-situating methods help majorities see they are situated in a larger context and decenters them, introduces them to experiences and terminologies outside their experience, and provides opportunities for them to

learn and grow. They may still resist this or push back, as privilege and power often does, but methodologies can be designed to curb this to some extent (van Anders, Schudson, et al., 2022). Thus, feminist/queer science need not only be defined only by the presence/absence of minority-inclusive methodologies but also by majority-situating methodologies. For example, by including terms familiar to most people as well as those minoritized on the basis of gender/sex/uality, research can be minority-inclusive and majority-situating, where majority participants leave feminist/queer science projects knowing more about the world, including gender/sex/ual diversity.

### *The Challenge of Materiality*

Many methods that scientists use introduce another challenge to feminist/queer science because they tend to involve materiality. Materiality might be defined as “thingness”; for example, things we can cut, or things (like forces) that can cut other things. Materiality has been a thorny issue within feminism and often ignored within queer scholarship, which is one reason why many scholars within trans, disability, crip, and/or intersex studies—whose lived experiences inform their attention to issues of materiality—criticize queer scholarship (Hale, 2008; M. L. Johnson, 2015; Morland, 2009). Queer scholarship that elides or invisibilizes materiality renders many trans lives, intersex lives, and disabled/crip lives irrelevant, yet people in these and other groups experience stigma and oppression in part tied to questions of and beliefs about materiality. Ignoring materiality can thus end up further marginalizing people in these groups and in scholarship about their existences and experiences. It also reduces the queerness of queer scholarship, because troubling materiality, taking joy in it, rethinking categoralities and categorizers in relation to it—especially all tied to gender/sex/uality—is a place where queer approaches should thrive.

Materiality poses problems within feminism because feminism has largely taken social constructions like sexism as its major subject matter. Obviously (though not always to everyone), materiality can be and is socially constructed, as with the notion that “breasts are for men” (Ward et al., 2006) or that bodies are sexed by social processes (Fausto-Sterling, 2020). However, materiality also carries material agency, a form and function that is not and cannot be controlled entirely (or sometimes at all) by human imaginaries or intervention even as it is interpreted and understood through them (Van Oyen, 2018). For example, testosterone is socially constructed by researchers who almost exclusively study it tied to masculinity, maleness, and/or manhood/boyhood; yet it also has material agency, for example, it can only bind to androgen receptors (and, after aromatization to estradiol, to estrogen receptors) and not just any receptor to influence the likelihood of a limited set of cellular responses and bodily impacts (Jordan-Young & Karkazis, 2019; van Anders, 2013).

Material agency has proven somewhat intractable within feminist scholarship because it resists complete deconstruction. This has made for little guidance for how to attend to materiality within feminist/queer science, and much pushback. This pushback comes from the very real feminist and queer concerns about the ongoing use of materiality to restrict people’s rights and oppose social justice (van Anders et al., 2017). It does seem rare to see materiality invoked about gender/sex/uality in ways that would increase rights rather than restrict them, making it—and thus feminist/queer science—suspect.

Yet, materiality matters, and ignoring it or denying material agency just means those who engage with either do so outside of feminist and queer epistemological commitments (Fausto-Sterling, 2000, 2005; van Anders, 2015). And, feminist/queer science engagements with materiality have explored dynamic engagements between bodies and our world. For example,

some research shows how gender socialization could change hormones like testosterone, challenging understandings of sex as fixed and innate, and gender as sociocultural and fluid (van Anders et al., 2015), and provides new definitions of sex and gender/sex that take materiality and lived experiences into account (van Anders, 2022). Other feminist/queer scholars in neuroscience have provided compelling engagements with materiality, including focusing on how gender/sex seems to be related to brains and biologisms in much less clear-cut and more complex ways than popular scientific assumptions about binaries and sexual dimorphism hold (Dussauge & Kaiser, 2012; Eliot & Richardson, 2016; Hird, 2004; Joel, 2012). Additionally, some feminist/queer scholarship has engaged with scientific practices of naming material phenomena tied to gender/sex/uality. These are shaped by scientists' own social locations and worldviews that include disgust for bodily features associated with womanhood and femaleness. For example, fluid from vaginas—but not penises—is referred to with negatively valenced and medicalized terms like “mucous” or “discharge” rather than neutral terms like “fluid” or even positively valenced ones, in stark contrast to fluid from penises, which is simply referred to as semen, and seen as neutral or positively-valenced (cf. “seminal”; van Anders, 2014).

### **Summary: Challenges to Feminist/Queer Science**

In this section, we discussed the challenges to feminist/queer science. To do so, we focused on those that are epistemological, empirical, and methodological, highlighting several of each. By using examples from gender/sex/uality, we also delineated how current and future research provides promising approaches for addressing these challenges, and moving forward to a feminist/queer science.

### **Conclusions**

Feminist/queer science challenges psychological science as typically practiced, yet reflects a coherent and progressive way forward for more comprehensive understandings of gender/sex/uality, and other phenomena. It pushes us to understand gender/sex/uality in terms of multiple truths and attend to the power dynamics among them, and question the power and value of categories and categorizers in transformative ways. Feminist/queer science highlights how phenomena are and can be dynamic, flexible, and fluid. They can be mobile and morph as they travel. With every study about gender/sex/uality, feminist/queer science asks us to consider: Why this category? What does this category do, and to whom? How might it be different? And, while feminist/queer science challenges normative conceptualizations, it does so with a curiosity and openness to the world as it is—and might be.

Feminist/queer science offers us explicit frameworks for doing the work. This includes ways to strategize about issues like bias and objectivity, highlighting situated science and strong objectivity as ways forward. Feminist/queer science offers a more a more expansive empiricism that includes, values, and attends to knowledge and expertise from those on the gender/sex/ual margins and attending to marginalization within those locations as well. By attending to these lived experiences, feminist/queer science sees people as more than “gaps” in our theories, and instead as sources of expertise and knowledge to work with, draw insights from, and make meaning with. Feminist/queer science helps us to think about gender/sex/uality itself; what constitutes these interrelated constructs, how and when materiality might be implicated, and how they may be connected to or disconnected from each other and other phenomena in “strange” and insightful ways that help us see or construct meaning anew. By asking about their construction and avoiding (or engaging with) a priori assumptions, feminist/queer science provides an

empirical way forward for science's contributions to understandings of phenomena like gender/sex/uality.

The uptake of feminist/queer science principles is strong and growing. There is increasing regularization of many feminist/queer scientific practices about gender/sex/uality in research as well as with various funding agencies, journal policies, and conference practices. And there are increasing opportunities for education and developing shared practices. This is important because much is at stake with feminist/queer science. It redefines what science can and should be, highlighting that science in all forms already and always is ideological whether it supports majority-privileging status quos or is explicitly liberatory and working toward a more just world. But it also shows that ideologies are neither inherently negative nor equally relevant, and asks us to consider how to value knowledge that contributes to liberatory and more truthful aims and identify biases and positionalities that hinder them. It rearticulates our responsibilities as scientists, asking us to reflect on whom we are accountable to, with answers that include those on the margins. It also demonstrates that epistemic justice is at stake (Fricker, 2007), or the ways that human rights and potentials around gender/sex/uality are bound up in the oppressive and liberatory ways that we define what counts as knowledge, who counts as knowers, and what gaps in knowledge and interpretive resources count as injustice (Dotson, 2012).

The best challenges, in the context of resiliency and flexibility, push for transformation. Feminist/queer science is dynamic, and one such approach that meets the needs of our time. It leads to a more empirical, accurate, and just knowledge, including of gender/sex/uality, and can shape science and its impact on the worlds we live in.

**Tables**

**Table 1**

*Summary of Challenges for Feminist/Queer Science and Potential Solutions*

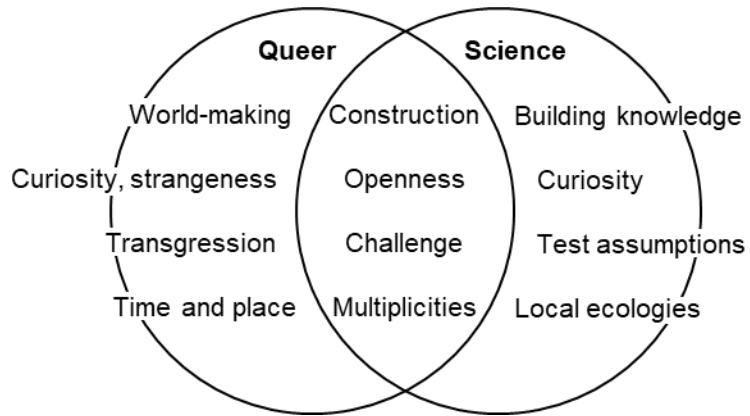
Challenges for feminist/queer science	Example of challenge	Example of solution from feminist/queer science
Epistemological		
Conflicting and problematic understandings of feminisms and queer	Essentialist feminism defining womanhood based on specific characteristics (e.g., testosterone levels)	Focusing on ending gender policing for people of all gender/sexes
Scientism	Viewing knowledge about a phenomenon as valuable only if it was derived through a conventional scientific lens that excludes social context	Viewing a phenomenon as embedded within its context, which can include oppression and privilege, and all knowledge to this end as valuable
Privileging of theory/basic scholarship over practice/applied scholarship	Devaluation of feminist/queer science because of its association with hand and heart labor (as opposed to head labor)	Deconstructing hierarchies that overvalue head labor and undervalue or devalue hand and heart labor
Empirical		
The justifiably hard sell of science in feminist/queer spaces	Historic and contemporary harms done to minoritized people in the name of science leading to justified skepticism towards or rejection of it	Feminist/queer successor science that acknowledges its own ideological embeddedness and is conducted with explicitly progressive approaches that counter biased status quos
Antagonism to/ignorance of feminism, queer, and science	Fallacies that view science as free from ideology and feminist/queer projects as inappropriately challenging this supposed “neutrality”	Being explicit about ideological commitments in all scientific endeavors and choosing progressive ones that carry fewer harms and provide more accurate and just knowledges
Methodological		
Quantitative versus qualitative methodologies	Viewing quantitative scientific methodologies as inherently	Combining methodologies, including quantitative ones,

	regressive and uniquely prone to harm	with feminist and queer political values
Minority-inclusive methods and gender/sex/ual majorities	Using minority-inclusive methods meant to empower minoritized people can <i>overempower</i> majorities who are already in positions of power	Using methods that are also majority-situating, decentering majority experiences and demonstrating that they represent one of many ways of being and identifying
Materiality	Focusing exclusively on social construction and ignoring the importance of materiality and issues of material agency	Understanding dynamic interplays between materiality and social constructs and feminist/queer possibilities for engaging with materiality

**Figure Captions**

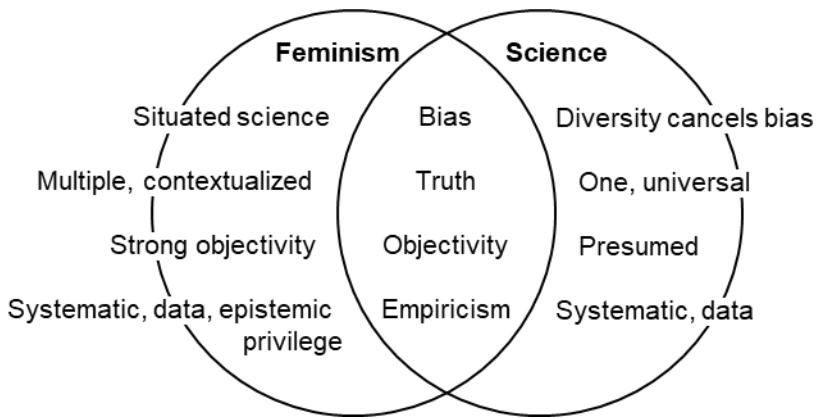
**Figure 1**

*Overlaps Between Queer and Science*



**Figure 2**

*Overlaps Between Feminism and Science*



### References

- Abed, E. C., Schudson, Z. C., Gunther, O. D., Beischel, W. J., & van Anders, S. M. (2019). Sexual and gender diversity among sexual and gender/sex majorities: Insights via sexual configurations theory. *Archives of Sexual Behavior*, *48*(5), 1423–1441. <https://doi.org/10.1007/s10508-018-1340-2>
- Adams-Santos, D. (2020). “Something a bit more personal”: Digital storytelling and intimacy among queer Black women. *Sexualities*, *23*(8), 1434–1456. <https://doi.org/10.1177/1363460720902720>
- Ansara, Y. G., & Hegarty, P. (2012). Cisgenderism in psychology: Pathologising and misgendering children from 1999 to 2008. *Psychology & Sexuality*, *3*(2), 137–160. <https://doi.org/10.1080/19419899.2011.576696>
- Ansara, Y. G., & Hegarty, P. (2014). Methodologies of misgendering: Recommendations for reducing cisgenderism in psychological research. *Feminism & Psychology*, *24*(2), 259–270. <https://doi.org/10.1177/0959353514526217>
- Ashley, F. (2019). Science has always been ideological, you just don’t see it. *Archives of Sexual Behavior*, *48*(6), 1655–1657. <https://doi.org/10.1007/s10508-019-01519-7>
- Bailey, M. (2016). Misogynoir in medical media: On Caster Semenya and R. Kelly. *Catalyst: Feminism, Theory, Technoscience*, *2*(2), 1–31. <https://doi.org/10.28968/cftt.v2i2.28800>
- Balzer Carr, B., Ben Hagai, E., & Zurbriggen, E. L. (2017). Queering Bem: Theoretical intersections between sandra bem’s scholarship and queer theory. *Sex Roles*, *76*(11), 655–668. <https://doi.org/10.1007/s11199-015-0546-1>
- Barad, K. (2007). *Meeting the universe halfway: Quantum physics and the entanglement of matter and meaning*. Duke University Press.

Barker, M. (2013). Gender and BDSM revisited: Reflections on a decade of researching kink communities. *Psychology of Women Section Review*, 15(2), 20–28.

<https://doi.org/10.53841/bpspow.2013.15.2.20>

Baum, J., Brill, S., Brown, J., Delpercio, A., Kahn, E., Kenney, L., & Nicoll, A. (2014).

*Supporting and caring for our gender expansive youth: Lessons from the human rights campaign's youth survey*. <http://assets2.hrc.org/files/assets/resources/Gender-expansive-youth-report-final.pdf>

Bay-Cheng, L. Y. (2019). Agency is everywhere, but agency is not enough: A conceptual

analysis of young women's sexual agency. *The Journal of Sex Research*, 56(4–5), 462–474. <https://doi.org/10.1080/00224499.2019.1578330>

Bay-Cheng, L. Y., & Eliseo-Arras, R. K. (2008). The making of unwanted sex: Gendered and

neoliberal norms in college women's unwanted sexual experiences. *The Journal of Sex Research*, 45(4), 386–397. <https://doi.org/10.1080/00224490802398381>

Beischel, W. J., Gauvin, S. E. M., & van Anders, S. M. (2022). “A little shiny gender

breakthrough”: Community understandings of gender euphoria. *International Journal of Transgender Health*, 23(3), 274–294. <https://doi.org/10.1080/26895269.2021.1915223>

Beischel, W. J., Schudson, Z. C., Hoskin, R. A., & van Anders, S. M. (2022). The gender/sex

3x3: Measuring and categorizing gender/sex beyond binaries. *Psychology of Sexual Orientation and Gender Diversity*. Advance online publication.

<https://doi.org/10.1037/sgd0000558>

Beischel, W. J., Schudson, Z. C., & van Anders, S. M. (2021). Visualizing gender/sex diversity

via sexual configurations theory. *Psychology of Sexual Orientation and Gender Diversity*, 8(1), 1–13. <https://doi.org/10.1037/sgd0000449>

- Bem, S. L. (1974). The measurement of psychological androgyny. *Journal of Consulting and Clinical Psychology*, 42(2), 155–162. <https://doi.org/10.1037/h0036215>
- Bem, S. L. (1995). Dismantling gender polarization and compulsory heterosexuality: Should we turn the volume down or up? *The Journal of Sex Research*, 32(4), 329–334. <https://doi.org/10.1080/00224499509551806>
- Berlant, L., & Warner, M. (1998). Sex in public. *Critical Inquiry*, 24(2), 547–566. <https://doi.org/10.1086/448884>
- Bernard, R. E., & Cooperdock, E. H. G. (2018). No progress on diversity in 40 years. *Nature Geoscience*, 11(5), 292–295. <https://doi.org/10.1038/s41561-018-0116-6>
- Bettcher, T. M. (2013). Trans women and the meaning of "woman." In N. Power, R. Halwani, & A. Soble (Eds.), *The philosophy of sex: Contemporary readings* (6th ed., pp. 233-250). Rowman & Littlefield Publishers.
- Billard, T. J., Everhart, A. R., & Zhang, E. (2022). Whither trans studies? On fields, post-disciplines, and the need for an applied transgender studies. *Bulletin of Applied Transgender Studies*, 1(1–2), 1–18. <https://doi.org/10.57814/pe84-4348>
- Blair, K. (2014). The state of LGBTQ-inclusive research methods in relationship science and how we can do better. *Relationship Research News*, 13(1), 7–12.
- Boone, C. A., & Bowleg, L. (2020). Structuring sexual pleasure: Equitable access to biomedical HIV prevention for Black men who have sex with men. *American Journal of Public Health*, 110(2), 157–159. <https://doi.org/10.2105/AJPH.2019.305503>
- Bornstein, K. (1994). *Gender outlaw: On men, women and the rest of us*. Routledge.

- Bowleg, L. (2008). When Black + lesbian + woman  $\neq$  Black lesbian woman: The methodological challenges of qualitative and quantitative intersectionality research. *Sex Roles*, 59(5–6), 312–325. <https://doi.org/10.1007/s11199-008-9400-z>
- Brassel, S. T., Settles, I. H., Jellison, W. A., & Dodson, C. (2020). Power and race in Black and white men's perceptions and experiences of manhood. *Translational Issues in Psychological Science*, 6(4), 325–343. <https://doi.org/10.1037/tps0000257>
- Brooks, V. R. (1981). *Minority stress and lesbian women*. Lexington Books.
- Brown, N., & Leigh, J. (2018). Ableism in academia: Where are the disabled and ill academics? *Disability & Society*, 33(6), 985–989. <https://doi.org/10.1080/09687599.2018.1455627>
- Burke, A. (2019). *Science and engineering labor force*. (NSB-2019-8). National Science Foundation. <https://nces.nsf.gov/pubs/nsb20198/>
- Butler, J. (1990). *Gender trouble: Feminism and the subversion of identity*. Routledge.
- Cabrera, N. L. (2019). *White guys on campus: Racism, white immunity, and the myth of "post-racial" higher education*. Rutgers University Press.
- Calabrese, S. K., Rosenberger, J. G., Schick, V. R., & Novak, D. S. (2015). Pleasure, affection, and love among Black men who have sex with men (MSM) versus MSM of other races: Countering dehumanizing stereotypes via cross-race comparisons of reported sexual experience at last sexual event. *Archives of Sexual Behavior*, 44(7), 2001–2014. <https://doi.org/10.1007/s10508-014-0405-0>
- Calisi, R. M., & a Working Group of Mothers in Science. (2018). Opinion: How to tackle the childcare–conference conundrum. *Proceedings of the National Academy of Sciences*, 115(12), 2845–2849. <https://doi.org/10.1073/pnas.1803153115>

- Carpenter, M. (2018). Intersex variations, human rights, and the international classification of diseases. *Health and Human Rights*, 20(2), 205–214.
- Carrillo, H., & Hoffman, A. (2018). ‘Straight with a pinch of bi’: The construction of heterosexuality as an elastic category among adult US men. *Sexualities*, 21(1–2), 90–108. <https://doi.org/10.1177/1363460716678561>
- Centre for Gender & Sexual Health Equity. (n.d.). *Gender & sex in methods & measurement toolkit*. Centre for Gender & Sexual Health Equity. Retrieved October 11, 2022. <https://cgshe.ca/practice/research-toolkits/gender-and-sex-toolkit/tools/>
- Chadwick, S. B., Burke, S. M., Goldey, K. L., Bell, S. N., & van Anders, S. M. (2017). Sexual desire in sexual minority and majority women and men: The multifaceted sexual desire questionnaire. *Archives of Sexual Behavior*, 46(8), 2465–2484. <https://doi.org/10.1007/s10508-016-0895-z>
- Chadwick, S. B., Francisco, M., & van Anders, S. M. (2019). When orgasms do not equal pleasure: Accounts of “bad” orgasm experiences during consensual sexual encounters. *Archives of Sexual Behavior*, 48(8), 2435–2459. <https://doi.org/10.1007/s10508-019-01527-7>
- Chadwick, S. B., Grower, P., & van Anders, S. M. (2022). Coercive sexual experiences that include orgasm predict negative psychological, relationship, and sexual outcomes. *Journal of Interpersonal Violence*, 37(23–24), NP22199–NP22225. <https://doi.org/10.1177/08862605211073109>
- Chen, M. Y. (2012). *Animacies: Biopolitics, racial mattering, and queer affect*. Duke University Press.

- Cipolla, C., Gupta, K., Rubin, D., & Willey, A. (Eds.). (2017). *Queer feminist science studies: A reader*. University of Washington Press.
- Clancy, K. B. H., Nelson, R. G., Rutherford, J. N., & Hinde, K. (2014). Survey of academic field experiences (SAFE): Trainees report harassment and assault. *PLoS ONE*, *9*(7), Article e102172. <https://doi.org/10.1371/journal.pone.0102172>
- Cole, E. R. (2009). Intersectionality and research in psychology. *American Psychologist*, *64*(3), 170–180. <https://doi.org/10.1037/a0014564>
- Collins, P. H. (2000a). *Black feminist thought: Knowledge, consciousness, and the politics of empowerment*. Routledge.
- Collins, P. H. (2000b). Moving beyond gender: Intersectionality and scientific knowledge. In M. M. Ferree, J. Lorber, & B. B. Hess (Eds.), *Revisioning gender* (pp. 261–284). AltaMira Press.
- Combahee River Collective. (1983). Combahee river collective statement. In B. Smith (Ed.), *Home girls, a Black feminist anthology* (pp. 264–274). Kitchen Table: Women of Color Press.
- Crenshaw, K. (1991). Mapping the margins: Intersectionality, identity politics, and violence against women of color. *Stanford Law Review*, *43*(6), 1241–1299. <https://doi.org/10.2307/1229039>
- Darwin, H. (2020). Challenging the cisgender/transgender binary: Nonbinary people and the transgender label. *Gender & Society*, *34*(3), 357–380. <https://doi.org/10.1177/0891243220912256>

- DeJesus, J. M., Umscheid, V. A., & Gelman, S. A. (2021). When gender matters in scientific communication: The role of generic language. *Sex Roles, 85*(9), 577–586.  
<https://doi.org/10.1007/s11199-021-01240-7>
- Diamond, L. M. (2020). Who counts as sexually fluid? Comparing four different types of sexual fluidity in women. *Archives of Sexual Behavior, 49*(7), 2389–2403.  
<https://doi.org/10.1007/s10508-019-01565-1>
- Diamond, L. M., & Butterworth, M. (2008). Questioning gender and sexual identity: Dynamic links over time. *Sex Roles, 59*(5–6), 365–376. <https://doi.org/10.1007/s11199-008-9425-3>
- Diamond, L. M., & Rosky, C. J. (2016). Scrutinizing immutability: Research on sexual orientation and U.S. legal advocacy for sexual minorities. *The Journal of Sex Research, 53*(4–5), 363–391. <https://doi.org/10.1080/00224499.2016.1139665>
- Dotson, K. (2012). A cautionary tale: On limiting epistemic oppression. *Frontiers, 33*(1), 24–47.  
<https://doi.org/10.5250/fronjwomestud.33.1.0024>
- Dussauge, I., & Kaiser, A. (2012). Re-queering the brain. In R. Bluhm, A. J. Jacobson, & H. L. Maibom (Eds.), *Neurofeminism: Issues at the intersection of feminist theory and cognitive science* (pp. 121–144). Palgrave Macmillan UK.  
[https://doi.org/10.1057/9780230368385\\_7](https://doi.org/10.1057/9780230368385_7)
- Eliot, L., & Richardson, S. S. (2016). Sex in context: Limitations of animal studies for addressing human sex/gender neurobehavioral health disparities. *Journal of Neuroscience, 36*(47), 11823–11830. <https://doi.org/10.1523/JNEUROSCI.1391-16.2016>
- Fahs, B. (2014). ‘Freedom to’ and ‘freedom from’: A new vision for sex-positive politics. *Sexualities, 17*(3), 267–290. <https://doi.org/10.1177/1363460713516334>

- Fahs, B. (2016). Methodological mishaps and slippery subjects: Stories of first sex, oral sex, and sexual trauma in qualitative sex research. *Qualitative Psychology*, 3(2), 209–225.  
<https://doi.org/10.1037/qup0000057>
- Fahs, B., & McClelland, S. I. (2016). When sex and power collide: An argument for critical sexuality studies. *Journal of Sex Research*, 53(4–5), 392–416.  
<https://doi.org/10.1080/00224499.2016.1152454>
- Fausto-Sterling, A. (2000). *Sexing the body: Gender politics and the construction of sexuality*. Basic Books.
- Fausto-Sterling, A. (2005). The bare bones of sex: Part 1 — Sex and gender. *Signs*, 30(2), 1491–1527. <https://doi.org/10.1086/424932>
- Fausto-Sterling, A. (2020). *Sexing the body: Gender politics and the construction of sexuality* (2nd ed.). Basic Books.
- Feinstein, B. A., Petruzzella, A., Davila, J., Lavner, J. A., & Hershenberg, R. (2020). Sharing positive experiences related to one's sexual orientation: Examining the capitalization process in a sample of gay men. *Psychology of Sexual Orientation and Gender Diversity*, 7(1), 40–45. <https://doi.org/10.1037/sgd0000350>
- Ferguson, R. A. (2018). Queer of color critique. In R. A. Ferguson, *Oxford research encyclopedia of literature*. Oxford University Press.  
<https://doi.org/10.1093/acrefore/9780190201098.013.33>
- Fine, M. (2013). Echoes of bedford. A 20-year social psychology memoir on participatory action research hatched behind bars. *The American Psychologist*, 68(8), 687–698.  
<https://doi.org/10.1037/a0034359>
- Foucault, M. (1990). *The history of sexuality: Vol. 1: An introduction* (Reprint). Penguin Books.

- Fricker, M. (2007). *Epistemic injustice: Power and the ethics of knowing*. Oxford University Press.
- Fry, K. M., Grzanka, P. R., Miles, J. R., & DeVore, E. N. (2020). Is essentialism essential? Reducing homonegative prejudice by targeting diverse sexual orientation beliefs. *Archives of Sexual Behavior, 49*(5), 1725–1739. <https://doi.org/10.1007/s10508-020-01706-x>
- Fujimura, J. H. (2006). Sex genes: A critical sociomaterial approach to the politics and molecular genetics of sex determination. *Signs, 32*(1), 49–82. <https://doi.org/10.1086/505612>
- Galupo, M. P. (2017). Researching while cisgender: Identity considerations for transgender research. *International Journal of Transgenderism, 18*(3), 241–242. <https://doi.org/10.1080/15532739.2017.1342503>
- Galupo, M. P., Davis, K. S., Gryniewicz, A. L., & Mitchell, R. C. (2014). Conceptualization of sexual orientation identity among sexual minorities: Patterns across sexual and gender identity. *Journal of Bisexuality, 14*(3–4), 433–456. <https://doi.org/10.1080/15299716.2014.933466>
- Galupo, M. P., Henise, S. B., & Mercer, N. L. (2016). “The labels don’t work very well”: Transgender individuals’ conceptualizations of sexual orientation and sexual identity. *International Journal of Transgenderism, 17*(2), 93–104. <https://doi.org/10.1080/15532739.2016.1189373>
- Galupo, M. P., Mitchell, R. C., & Davis, K. S. (2015). Sexual minority self-identification: Multiple identities and complexity. *Psychology of Sexual Orientation and Gender Diversity, 2*(4), 355–364. <https://doi.org/10.1037/sgd0000131>

- Galupo, M. P., Mitchell, R. C., Gryniewicz, A. L., & Davis, K. S. (2014). Sexual minority reflections on the Kinsey scale and the Klein sexual orientation grid: Conceptualization and measurement. *Journal of Bisexuality, 14*(3–4), 404–432.  
<https://doi.org/10.1080/15299716.2014.929553>
- Gavey, N. (2012). Beyond “empowerment”? Sexuality in a sexist world. *Sex Roles, 66*(11-12), 718–724. <https://doi.org/10.1007/s11199-011-0069-3>
- Gelman, S. A. (2003). *The essential child: Origins of essentialism in everyday thought*. Oxford University Press.
- Gill, R. (2007). *Gender and the media*. Polity Press.
- Goldey, K. L., Posh, A. R., Bell, S. N., & van Anders, S. M. (2016). Defining pleasure: A focus group study of solitary and partnered sexual pleasure in queer and heterosexual women. *Archives of Sexual Behavior, 45*(8), 2137–2154. <https://doi.org/10.1007/s10508-016-0704-8>
- Goodkind, S. (2009). “You can be anything you want, but you have to believe it”: Commercialized feminism in gender-specific programs for girls. *Signs, 34*(2), 397–422.  
<https://doi.org/10.1086/591086>
- Gough, K. (1968). New proposals for anthropologists. *Current Anthropology, 9*(5, Part 1), 403–435. <https://doi.org/10.1086/200925>
- Grzanka, P. R. (2016). Queer survey research and the ontological dimensions of heterosexism. *Women’s Studies Quarterly, 44*(3–4), 131–149. <https://doi.org/10.1353/wsq.2016.0039>
- Grzanka, P. R., Zeiders, K. H., & Miles, J. R. (2016). Beyond “born this way?” Reconsidering sexual orientation beliefs and attitudes. *Journal of Counseling Psychology, 63*(1), 67–75.  
<https://doi.org/10.1037/cou0000124>

- Gupta, K., & Rubin, D. A. (2020). Queer science studies/queer science. In S. Crasnow, & K. Intemann (Eds.), *The Routledge handbook of feminist philosophy of science* (pp. 131–143). Routledge.
- Hacking, I. (1986). Making up people. In T. Heller, M. Sosna, & E. Wellberry (Eds.), *Reconstructing individualism: Autonomy, individuality, and the self in Western thought* (pp. 222–236). Stanford University Press.
- Hagai, E. B., & Zurbriggen, E. L. (2022). *Queer theory and psychology: Gender, sexuality, and transgender identities*. Springer International Publishing.
- Hale, C. J. (2008). Whose body is this anyway? In A. L. Ferber, K. Holcomb, & T. Wentling (Eds.), *Sex, gender, and sexuality: The new basics* (Vol. 1, pp. 17–18). Oxford University Press.
- Hammack, P. L., Mayers, L., & Windell, E. P. (2013). Narrative, psychology and the politics of sexual identity in the United States: From ‘sickness’ to ‘species’ to ‘subject’. *Psychology & Sexuality, 4*(3), 219–243. <https://doi.org/10.1080/19419899.2011.621131>
- Hammersley, M., & Traianou, A. (2012). *Ethics in qualitative research: Controversies and contexts*. SAGE.
- Hammond, M. D., & Cimpian, A. (2017). Investigating the cognitive structure of stereotypes: Generic beliefs about groups predict social judgments better than statistical beliefs. *Journal of Experimental Psychology: General, 146*(5), 607–614. <https://doi.org/10.1037/xge0000297>
- 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>
- Harding, S. (1986). *The science question in feminism*. Cornell University Press.

- Harding, S. (1991). *Whose science? Whose knowledge? Thinking from women's lives*. Cornell University Press.
- Harding, S. (1993). Rethinking standpoint epistemology: What is “strong objectivity?” In L. Alcoff & E. Potter (Eds.), *Feminist epistemologies* (pp. 49–82). Routledge.
- Harding, S. (1995). “Strong objectivity”: A response to the new objectivity question. *Synthese*, *104*(3), 331–349. <https://doi.org/10.1007/BF01064504>
- Hargons, C. N., Dogan, J., Malone, N., Thorpe, S., Mosley, D. V., & Stevens-Watkins, D. (2021). Balancing the sexology scales: A content analysis of Black women's sexuality research. *Culture, Health & Sexuality*, *23*(9), 1287–1301. <https://doi.org/10.1080/13691058.2020.1776399>
- Hargons, C. N., Mosley, D. V., Meiller, C., Stuck, J., Kirkpatrick, B., Adams, C., & Angyal, B. (2018). “It feels so good”: Pleasure in last sexual encounter narratives of Black university students. *Journal of Black Psychology*, *44*(2), 103–127. <https://doi.org/10.1177/0095798417749400>
- Hargons, C. N., Thorpe, S., Malone, N., Wright, C. J., Dogan, J. N., Mizelle, D. L., Stuck, J. L., Sullivan, Q.-A., Sanchez, A., Bohmer, C., Stage, M., Bruther, K., Vigil, K., Cineas, M. R., & Gilbert, T. Q. (2022). Black people's constructions of good sex: Describing good sex from the margins. *Sexualities*. Advanced online publication. <https://doi.org/10.1177/13634607221101854>
- Hayek, F. A. V. (1942). Scientism and the study of society. Part I. *Economica*, *9*(35), 267–291. <https://doi.org/10.2307/2549540>

- Hegarty, P., & Golden, A. M. (2008). Attributional beliefs about the controllability of stigmatized traits: Antecedents or justifications of prejudice? *Journal of Applied Social Psychology, 38*(4), 1023–1044. <https://doi.org/10.1111/j.1559-1816.2008.00337.x>
- Hegarty, P., & Massey, S. (2006). Anti-homosexual prejudice... as opposed to what? *Journal of Homosexuality, 52*(1–2), 47–71. [https://doi.org/10.1300/J082v52n01\\_03](https://doi.org/10.1300/J082v52n01_03)
- Herbenick, D., Barnhart, K., Beavers, K., & Fortenberry, D. (2018). Orgasm range and variability in humans: A content analysis. *International Journal of Sexual Health, 30*(2), 195–209. <https://doi.org/10.1080/19317611.2018.1491920>
- Herbenick, D., van Anders, S. M., Brotto, L. A., Chivers, M. L., Jawed-Wessel, S., & Galarza, J. (2019). Sexual harassment in the field of sexuality research. *Archives of Sexual Behavior, 48*(4), 997–1006. <https://doi.org/10.1007/s10508-019-1405-x>
- Hird, M. J. (2004). Naturally queer. *Feminist Theory, 5*(1), 85–89. <https://doi.org/10.1177/1464700104040817>
- Hirshman, L. R. (2006). *Get to work: A manifesto for women of the world*. Viking.
- hooks, b. (2000). *Feminism is for everybody: Passionate politics*. South End Press.
- Hoskin, R. A. (2019). Femmephobia: The role of anti-femininity and gender policing in LGBTQ+ people's experiences of discrimination. *Sex Roles, 81*(11-12), 686–703. <https://doi.org/10.1007/s11199-019-01021-3>
- Hull, K. E. (2017). The role of social science expertise in same-sex marriage litigation. *Annual Review of Law and Social Science, 13*(1), 471–491. <https://doi.org/10.1146/annurev-lawsocsci-110615-084729>
- Intemann, K. (2010). 25 years of feminist empiricism and standpoint theory: Where are we now? *Hypatia, 25*(4), 778–796. <https://doi.org/10.1111/j.1527-2001.2010.01138.x>

- Jagose, A. (1996). *Queer theory: An introduction*. NYU Press.
- Jagose, A. (2010). Counterfeit pleasures: Fake orgasm and queer agency. *Textual Practice*, 24(3), 517–539. <https://doi.org/10.1080/09502361003690849>
- Joel, D. (2012). Genetic-gonadal-genitals sex (3G-sex) and the misconception of brain and gender, or, why 3G-males and 3G-females have intersex brain and intersex gender. *Biology of Sex Differences*, 3(1), Article 27. <https://doi.org/10.1186/2042-6410-3-27>
- Joel, D., Tarrasch, R., Berman, Z., Mukamel, M., & Ziv, E. (2014). Queering gender: Studying gender identity in ‘normative’ individuals. *Psychology & Sexuality*, 5(4), 291–321. <https://doi.org/10.1080/19419899.2013.830640>
- Johnson, E. P. (2001). “Quare” studies, or (almost) everything I know about queer studies I learned from my grandmother. *Text and Performance Quarterly*, 21(1), 1–25. <https://doi.org/10.1080/10462930128119>
- Johnson, M. L. (2015). Bad romance: A crip feminist critique of queer failure. *Hypatia*, 30(1), 251–267. <https://doi.org/10.1111/hypa.12134>
- Jones, A. (2019). Sex is not a problem: The erasure of pleasure in sexual science research. *Sexualities*, 22(4), 643–668. <https://doi.org/10.1177/1363460718760210>
- Jordan-Young, R. M. (2010). *Brain storm: The flaws in the science of sex differences*. Harvard University Press.
- Jordan-Young, R. M., & Karkazis, K. (2019). *Testosterone*. Harvard University Press.
- Karkazis, K., Jordan-Young, R., Davis, G., & Camporesi, S. (2012). Out of bounds? A critique of the new policies on hyperandrogenism in elite female athletes. *American Journal of Bioethics*, 12(7), 3–16. <https://doi.org/10.1080/15265161.2012.680533>

- Katz, J. (1992). *Gay American history: Lesbians and gay men in the USA: A documentary history*. Plume.
- Kinsey, A. C., Pomeroy, W. B., & Martin, C. E. (1948). *Sexual behavior in the human male*. W.B. Saunders Company.
- Kinsey, A. C., Pomeroy, W. B., Martin, C. E., & Gebhard, P. H. (1953). *Sexual behavior in the human female*. Indiana University Press.
- Kuhn, T. S. (2012). *The structure of scientific revolutions: 50th anniversary edition* (4th ed.). University of Chicago Press.
- Kuper, L. E., Nussbaum, R., & Mustanski, B. (2012). Exploring the diversity of gender and sexual orientation identities in an online sample of transgender individuals. *Journal of Sex Research, 49*(2–3), 244–254. <https://doi.org/10.1080/00224499.2011.596954>
- Kuper, L. E., Wright, L., & Mustanski, B. (2014). Stud identity among female-born youth of color: Joint conceptualizations of gender variance and same-sex sexuality. *Journal of Homosexuality, 61*(5), 714–731. <https://doi.org/10.1080/00918369.2014.870443>
- LaFrance, M. N., Stelzl, M., & Bullock, K. (2017). “I’m not gonna fake it”. *Psychology of Women Quarterly, 41*(2), 210–222. <https://doi.org/10.1177/0361684316683520>
- Leslie, S.-J., Cimpian, A., Meyer, M., & Freeland, E. (2015). Expectations of brilliance underlie gender distributions across academic disciplines. *Science, 347*(6219), 262–265. <https://doi.org/10.1126/science.1261375>
- Levitt, H. M. (2019). A psychosocial genealogy of LGBTQ+ gender: An empirically based theory of gender and gender identity cultures. *Psychology of Women Quarterly, 43*(3), 275–297. <https://doi.org/10.1177/0361684319834641>

- Levitt, H. M., Surace, F. I., Wheeler, E. E., Maki, E., Alcántara, D., Cadet, M., Cullipher, S., Desai, S., Sada, G. G., Hite, J., Kosterina, E., Krill, S., Lui, C., Manove, E., Martin, R. J., & Ngai, C. (2018). Drag gender: Experiences of gender for gay and queer men who perform drag. *Sex Roles*, 78(5–6), 367–384. <https://doi.org/10.1007/s11199-017-0802-7>
- Lewis, N. A. Jr. (2020, June 16). What I've learned about being a Black scientist. *Science*. <https://doi.org/10.1126/science.caredit.abd3589>
- Light, A. E., Benson-Greenwald, T. M., & Diekman, A. B. (2022). Gender representation cues labels of hard and soft sciences. *Journal of Experimental Social Psychology*, 98(3), 104234. <https://doi.org/10.1016/j.jesp.2021.104234>
- Loeser, C., Pini, B., & Crowley, V. (2018). Disability and sexuality: Desires and pleasures. *Sexualities*, 21(3), 255–270. <https://doi.org/10.1177/1363460716688682>
- Longino, H. E. (1996). Subjects, power, and knowledge: Description and prescription in feminist philosophies of science. In E. F. Keller & H. E. Longino (Eds.), *Feminism and science* (pp. 264-279). Oxford University Press.
- Love, H. (2007). Emotional rescue: The demands of queer history. In H. Love (Ed.), *Feeling backwards: Loss and the politics of queer history* (pp. 31–52). Harvard University Press.
- Marecek, J., Fine, M., & Kidder, L. (1997). Working between worlds: Qualitative methods and social psychology. *Journal of Social Issues*, 53(4), 631–644. <https://doi.org/10.1111/0022-4537.00040>
- McClelland, S. I. (2010). Intimate justice: A critical analysis of sexual satisfaction. *Social and Personality Psychology Compass*, 4(9), 663–680. <https://doi.org/10.1111/j.1751-9004.2010.00293.x>

- McClelland, S. I. (2016). Speaking back from the margins: Participant marginalia in survey and interview research. *Qualitative Psychology*, 3(2), 159–165.  
<https://doi.org/10.1037/qup0000061>
- McClelland, S. I., Dutcher, H., & Crawford, B. (2020). In the fabric of research: Racial and gender stereotypes in survey items assessing attitudes about abortion. *Journal of Social Issues*, 76(2), 239–269. <https://doi.org/10.1111/josi.12367>
- McRobbie, A. (2004). Post-feminism and popular culture. *Feminist Media Studies*, 4(3), 255–264. <https://doi.org/10.1080/1468077042000309937>
- McRuer, R. (2006). *Crip theory: Cultural signs of queerness and disability*. New York University Press.
- McRuer, R. (2011). Disabling sex: Notes for a crip theory of sexuality. *GLQ*, 17(1), 107–117.  
<https://doi.org/10.1215/10642684-2010-021>
- Medina, J. (2017). Varieties of hermeneutical injustice. In I. J. Kidd, J. Medina, & G. Pohlhaus (Eds.), *The Routledge handbook of epistemic injustice*. Routledge.  
<https://doi.org/10.4324/9781315212043.ch3>
- Molldrem, S., & Thakor, M. (2017). Genealogies and futures of queer STS: Issues in theory, method, and institutionalization. *Catalyst: Feminism, Theory, Technoscience*, 3(1), Article 1-15. <https://doi.org/10.28968/cftt.v3i1.28795>
- Morgenroth, T., & Ryan, M. K. (2018). Gender trouble in social psychology: How can Butler's work inform experimental social psychologists' conceptualization of gender? *Frontiers in Psychology*, 9(1320), 1–9. <https://doi.org/10.3389/fpsyg.2018.01320>

- Morgenroth, T., & Ryan, M. K. (2021). The effects of gender trouble: An integrative theoretical framework of the perpetuation and disruption of the gender/sex binary. *Perspectives on Psychological Science, 16*(6), 1113–1142. <https://doi.org/10.1177/1745691620902442>
- Morland, I. (2009). What can queer theory do for intersex? *GLQ, 15*(2), 285–312. <https://doi.org/10.1215/10642684-2008-139>
- Muñoz, J. E. (2009). *Cruising utopia*. New York University Press.
- Nader, L. (1972). Up the anthropologist- Perspectives gained from studying up. In D. Hymes (Ed.), *Reinventing anthropology* (pp. 284–311). Pantheon Books.
- Neville, H. A., Ruedas-Gracia, N., Lee, B. A., Ogunfemi, N., Maghsoodi, A. H., Mosley, D. V., LaFromboise, T. D., & Fine, M. (2021). The public psychology for liberation training model: A call to transform the discipline. *American Psychologist, 76*(8), 1248–1265. <https://doi.org/10.1037/amp0000887>
- Newman, R. Y. (Ed.). (2018). *Gender euphoria: A new collection*. <https://gumroad.com/l/GenderEuphoria>
- Pagonis, P. (2017). First do harm: How intersex kids are hurt by those who have taken the hippocratic oath. *Griffith Journal of Law & Human Dignity, 5*, 40–51.
- Pape, M. (2019). Expertise and non-binary bodies: Sex, gender and the case of Dutee Chand. *Body & Society, 25*(4), 3–28. <https://doi.org/10.1177/1357034X19865940>
- Pitts-Taylor, V. (2016). *The brain's body: Neuroscience and corporeal politics*. Duke University Press.
- Prosser, J. (1998). *Second skins: The body narratives of transsexuality*. Columbia University Press; U-M Catalog Search.

- Riger, S. (1992). Epistemological debates, feminist voices: Science, social values, and the study of women. *American Psychologist*, 47(6), 730–740. <https://doi.org/10.1037/0003-066X.47.6.730>
- Riggs, D. W., Pearce, R., Pfeffer, C. A., Hines, S., White, F., & Ruspini, E. (2019). Transnormativity in the psy disciplines: Constructing pathology in the Diagnostic and Statistical Manual of Mental Disorders and Standards of Care. *American Psychologist*, 74(8), 912–924. <https://doi.org/10.1037/amp0000545>
- Robnett, R. D., Anderson, K. J., & Hunter, L. E. (2012). Predicting feminist identity: Associations between gender-traditional attitudes, feminist stereotyping, and ethnicity. *Sex Roles*, 67(3), 143–157. <https://doi.org/10.1007/s11199-012-0170-2>
- Rose, H. (1983). Hand, brain, and heart: A feminist epistemology for the natural sciences. *Signs: Journal of Women in Culture and Society*, 9(1), 73–90. <https://doi.org/10.1086/494025>
- Rutherford, A. (2021). *Psychology at the intersections of gender, feminism, history, and culture*. Cambridge University Press.
- Rutherford, A., & Pettit, M. (2015). Feminism and/in/as psychology: The public sciences of sex and gender. *History of Psychology*, 18(3), 223–237. <https://doi.org/10.1037/a0039533>
- Scheim, A. I., Appenroth, M. N., Beckham, S. W., Goldstein, Z., Grinspan, M. C., Keatley, J. G., & Radix, A. (2019). Transgender HIV research: Nothing about us without us. *The Lancet HIV*, 6(9), e566–e567. [https://doi.org/10.1016/S2352-3018\(19\)30269-3](https://doi.org/10.1016/S2352-3018(19)30269-3)
- Schiebinger, L. L. (2004). *Nature's body: Gender in the making of modern science*. Rutgers University Press.

- Schrimshaw, E. W., Downing, M. J., & Cohn, D. J. (2018). Reasons for non-disclosure of sexual orientation among behaviorally bisexual men: Non-disclosure as stigma management. *Archives of Sexual Behavior*, 47(1), 219–233. <https://doi.org/10.1007/s10508-016-0762-y>
- Schudson, Z. C., Dibble, E. R., & van Anders, S. M. (2017). Gender/sex and sexual diversity via sexual configurations theory: Insights from a qualitative study with gender and sexual minorities. *Psychology of Sexual Orientation and Gender Diversity*, 4(4), 422–437. <https://doi.org/10.1037/sgd0000241>
- Schudson, Z. C., & van Anders, S. M. (2019). ‘You have to coin new things’: Sexual and gender identity discourses in asexual, queer, and/or trans young people’s networked counterpublics. *Psychology & Sexuality*, 10(4), 354–368. <https://doi.org/10.1080/19419899.2019.1653957>
- Schudson, Z. C., & van Anders, S. M. (2021). Gender/sex diversity beliefs: Scale construction, validation, and links to prejudice. *Group Processes & Intergroup Relations*, 25(4), 1011–1036. <https://doi.org/10.1177/1368430220987595>
- Serano, J. M. (2007). *Whipping girl: A transsexual woman on sexism and the scapegoating of femininity*. Seal Press.
- Serano, J. M. (2010). The case against autogynephilia. *International Journal of Transgenderism*, 12(3), 176–187. <https://doi.org/10.1080/15532739.2010.514223>
- Settles, I. H., Jones, M. K., Buchanan, N. T., & Dotson, K. (2021). Epistemic exclusion: Scholar(ly) devaluation that marginalizes faculty of color. *Journal of Diversity in Higher Education*, 14(4), 493–507. <https://doi.org/10.1037/dhe0000174>
- Sheldon, J. P., Pfeffer, C. A., Jayaratne, T. E., Feldbaum, M., & Petty, E. M. (2007). Beliefs about the etiology of homosexuality and about the ramifications of discovering its

- possible genetic origin. *Journal of Homosexuality*, 52(3–4), 111–150.  
[https://doi.org/10.1300/J082v52n03\\_06](https://doi.org/10.1300/J082v52n03_06)
- Sicurella, F. G. (2016). The approach that dares speak its name: Queer and the problem of ‘big nouns’ in the language of academia. *Gender and Language*, 10(1), 73–84.  
<https://doi.org/10.1558/genl.v10i1.20895>
- Smith, A. (1995). Women of color and reproductive choice: Combating the population paradigm. *Journal of Feminist Studies in Religion*, 11(2), 39–66.
- Smith, A., & Hegarty, P. (2021). An experimental philosophical bioethical study of how human rights are applied to clitorrectomy on infants identified as female and as intersex. *Culture, Health & Sexuality*, 23(4), 548–563. <https://doi.org/10.1080/13691058.2020.1788164>
- Somerville, S. (2000). Scientific racism and the invention of the homosexual body. In S. B. Somerville (Ed.), *Queering the color line: Race and the invention of homosexuality in American culture* (pp. 15–38). Duke University Press.
- Spade, D. (2020). *Mutual aid: Building solidarity during this crisis (and the next)*. Verso.
- Spelman, E. V. (1991). *Inessential woman: Problems of exclusion of feminist thought*. Beacon Press.
- Stacey, J. (1988). Can there be a feminist ethnography? *Women’s Studies International Forum*, 11(1), 21–27. [https://doi.org/10.1016/0277-5395\(88\)90004-0](https://doi.org/10.1016/0277-5395(88)90004-0)
- Starheim, R. (2019). Employing research to understand violence against women. *National Institute of Justice Journal*, 281. <https://nij.ojp.gov/topics/articles/employing-research-understandviolence-against-women>
- Stewart, A. J., & McDermott, C. (2004). Gender in psychology. *Annual Review of Psychology*, 55(1), 519–544. <https://doi.org/10.1146/annurev.psych.55.090902.141537>

- Stewart, A. J., & Newton, N. J. (2022). Devilish details: The importance of marginalia in personality research. *Journal of Research in Personality*, 97(5), Article 104189. <https://doi.org/10.1016/j.jrp.2022.104189>
- Stone, S. (2006). The empire strikes back: A posttranssexual manifesto. In S. Stryker & S. Whittle (Eds.), *The transgender studies reader* (Vol. 1, pp. 221–235). Routledge.
- Stryker, S. (2006). My words to Victor Frankenstein above the village of Chamounix: Performing transgender rage. In S. Stryker & S. Whittle (Eds.), *The transgender studies reader* (pp. 244–256). Routledge.
- Talbert, S. (2000). Introduction: Some contradictions and possibilities of “Thinking Queer.” In J. L. Kincheloe, S. Talbert, & S. R. Steinberg (Eds.), *Counterpoints: Vol. 118. Thinking queer: Sexuality, culture, and education* (pp. 3–13). Peter Lang Publishing. <https://www.jstor.org/stable/45136094>
- TallBear, K. (2015). An Indigenous reflection on working beyond the human/not human. *GLQ: A Journal of Lesbian and Gay Studies*, 21(2), 230–235. <https://doi.org/10.1215/10642684-2843323>
- Tate, C. C., Youssef, C. P., & Bettergarcia, J. N. (2014). Integrating the study of transgender spectrum and cisgender experiences of self-categorization from a personality perspective. *Review of General Psychology*, 18(4), 302–312. <https://doi.org/10.1037/gpr0000019>
- Thorpe, S., Malone, N., Hargons, C. N., Dogan, J. N., & Jester, J. K. (2022). The peak of pleasure: US southern Black women’s definitions of and feelings toward sexual pleasure. *Sexuality & Culture*, 26(3), 1115–1131. <https://doi.org/10.1007/s12119-021-09934-6>
- Tiefer, L. (2004). *Sex is not a natural act & other essays*. Avalon Publishing.

- Townes, A., Thorpe, S., Parmer, T., Wright, B., & Herbenick, D. (2021). Partnered sexual behaviors, pleasure, and orgasms at last sexual encounter: Findings from a U.S. probability sample of Black women ages 18 to 92 years. *Journal of Sex & Marital Therapy*, *47*(4), 353–367. <https://doi.org/10.1080/0092623X.2021.1878315>
- van Anders, S. M. (2013). Beyond masculinity: Testosterone, gender/sex, and human social behavior in a comparative context. *Frontiers in Neuroendocrinology*, *34*(3), 198–210. <https://doi.org/10.1016/j.yfrne.2013.07.001>
- van Anders, S. M. (2014). Nomenclature and knowledge-culture, or, we don't call semen 'penile mucous'. *Psychology and Sexuality*, *5*(4), 349–356. <https://doi.org/10.1080/19419899.2013.835743>
- van Anders, S. M. (2015). Beyond sexual orientation: Integrating gender/sex and diverse sexualities via sexual configurations theory. *Archives of Sexual Behavior*, *44*(5), 1177–1213. <https://doi.org/10.1007/s10508-015-0490-8>
- van Anders, S. M. (2022). Gender/sex/ual diversity and biobehavioral research. *Psychology of Sexual Orientation and Gender Diversity*, Advance online publication. <https://doi.org/10.1037/sgd0000609>
- van Anders, S. M., & Dunn, E. J. (2009). Are gonadal steroids linked with orgasm perceptions and sexual assertiveness in women and men? *Hormones and Behavior*, *56*(2), 206–213. <https://doi.org/10.1016/j.yhbeh.2009.04.007>
- van Anders, S. M., Goldey, K. L., & Bell, S. N. (2013). Measurement of testosterone in human sexuality research: Methodological considerations. *Archives of Sexual Behavior*, *43*(2), 231–250. <https://doi.org/10.1007/s10508-013-0123-z>

- van Anders, S. M., Herbenick, D., Brotto, L. A., Harris, E. A., & Chadwick, S. B. (2022). The heteronormativity theory of low sexual desire in women partnered with men. *Archives of Sexual Behavior*, *51*(1), 391–415. <https://doi.org/10.1007/s10508-021-02100-x>
- van Anders, S. M., Schudson, Z. C., Abed, E. C., Beischel, W. J., Dibble, E. R., Gunther, O. D., Kutchko, V. J., & Silver, E. R. (2017). Biological sex, gender, and public policy. *Policy Insights from the Behavioral and Brain Sciences*, *4*(2), 194–201. <https://doi.org/10.1177/2372732217720700>
- van Anders, S. M., Schudson, Z. C., Beischel, W. J., Abed, E. C., Gormezano, A., & Dibble, E. R. (2022). Overempowered? Diversity-focused research with gender/sex and sexual majorities. *Review of General Psychology*, *26*(1), 3–21. <https://doi.org/10.1177/10892680211034461>
- van Anders, S. M., Steiger, J., & Goldey, K. L. (2015). Effects of gendered behavior on testosterone in women and men. *Proceedings of the National Academy of Sciences of the United States of America*, *112*(45), 13805–13810. <https://doi.org/10.1073/pnas.1509591112>
- Van Oyen, A. (2018). Material agency. In S. L. López Varela (Ed.), *The encyclopedia of archaeological sciences* (pp. 1–5). John Wiley & Sons. <https://doi.org/10.1002/9781119188230.saseas0363>
- Vincent, B., Erikainen, S., & Pearce, R. (Eds.). (2020). TERF wars: Feminism and the fight for transgender futures [Special Issue]. *Sociological Review* *68*(4), 677–890.
- Vincent, B. W. (2018). Studying trans: Recommendations for ethical recruitment and collaboration with transgender participants in academic research. *Psychology & Sexuality*, *9*(2), 102–116. <https://doi.org/10.1080/19419899.2018.1434558>

- Wall, S. S. (2015). Standing at the intersections: Navigating life as a Black intersex man. *Narrative Inquiry in Bioethics*, 5(2), 117–119. <https://doi.org/10.1353/nib.2015.0046>
- Wang, A. Y., & Feinstein, B. A. (2022). The perks of being bi+: Positive sexual orientation–related experiences among bisexual, pansexual, and queer male youth. *Psychology of Sexual Orientation and Gender Diversity*, 9(1), 58–70. <https://doi.org/10.1037/sgd0000459>
- Ward, L., Merriwether, A., & Caruthers, A. (2006). Breasts are for men: Media, masculinity ideologies, and men’s beliefs about women’s bodies. *Sex Roles*, 55(9), 703–714. <https://doi.org/10.1007/s11199-006-9125-9>
- Ware, S., Thorpe, S., & Dyson, Y. D. (2020). “Knowing that you’re pleasing the other person makes it even better”: Perceived pleasure and motives for condom use among heterosexual Black college men in the South. *Journal of Black Sexuality and Relationships*, 6(3), 49–69. <https://doi.org/10.1353/bsr.2020.0000>
- Warner, M. (1991). Introduction: Fear of a queer planet. *Social Text*, 29, 3–17.
- Williams, C. (2020). The ontological woman: A history of deauthentication, dehumanization, and violence. *Sociological Review*, 68(4), 718–734. <https://doi.org/10.1177/0038026120938292>
- Yerbury, J. J., & Yerbury, R. M. (2021). Disabled in academia: To be or not to be, that is the question. *Trends in Neurosciences*, 44(7), 507–509. <https://doi.org/10.1016/j.tins.2021.04.004>