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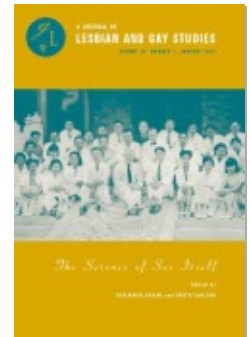
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## Gay Genes in the Postgenomic Era: A Roundtable

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# GAY GENES IN THE POSTGENOMIC ERA

## A Roundtable

**Stephanie D. Clare, Patrick R. Grzanka,  
and Joanna Wuest**

In a paper published in *Science* in September 2019 to global fanfare, geneticist Andrea Ganna and his multidisciplinary team's genome-wide association study (GWAS) identified five loci of genetic material associated with same-sex sexual activity among a large American and British sample of people of European ancestry (Ganna et al. 2019). First performed in 2002, the GWAS method identifies, across the entire human genome, genetic variations—mostly single-nucleotide polymorphisms (SNPs, pronounced “snips”)—that correlate with particular traits, such as behaviors or personality types (Ikegawa 2012: 221). This approach was made possible by the mapping of the human genome and the consequent widespread availability of complete human genome sequences; thus, the GWAS is designated as a postgenomic method. Unlike late-twentieth-century hereditary and monocausal explanations of “homosexuality” advanced by scientists including Simon LeVay, Dean Hamer, and J. Michael Bailey, a GWAS is able to estimate the influence of potential genetic markers across the entire human genome using staggeringly large sample sizes and statistical methods. That said, identification of common SNPs associated with a particular trait does not mean that people with these SNPs will necessarily exhibit that trait. In this case, drawing on over 450,000 individuals' genetic material from the UK Biobank and 23andMe, Ganna and colleagues' findings purportedly constituted groundbreaking evidence of the complex gene-environment interactions that produce phenotypes, though the aggregate percentage of variation in same-sex sexual behavior explained by the five genetic loci was very small (8–25 percent) and an unreliable predictor of sexual behav-

ior. Even then, the study framed itself as revealing the “genetic architecture”—which is to say the blueprint or design—of same-sex sexual behavior.

The study’s conclusions were unsurprising and unremarkable: ultimately the authors concluded that “many loci with individually small effects,” spread across the entire genome, contribute in statistically significant but highly unpredictable ways to an individual’s sexual behavior. In other words, genes contribute minimally, inconsistently, and complexly to human sexual expression. What is remarkable, however, is the authors’ and journal editors’ sense of the study’s importance and the ways the study’s self-identification as important was interpolated in the pages of *Science* and in broader public discourse. Regardless of whether geneticists or queer studies scholars interpreted the findings to be mundane, the study’s impact was practically predetermined to be deeply consequential and global in scope.

Ganna and colleagues consulted with activists and communications experts during the implementation and rollout of the study in an attempt to preempt both the co-optation of their work for political means and the misinterpretation of their findings. The research team organized workshops with groups such as the Peter Tatchell Foundation and London Pride, which helped to anticipate and minimize political fallout. Representatives from GLAAD and other national LGBTQ+ organizations read drafts, provided feedback, and helped frame the language of the findings and their public release. The team even worked with a professional consultant, UK-based science communicators Sense about Science, and subsequently pushed the editors at *Science* to use images, videos, and an FAQ on the genetics of sexual orientation to accompany the published article. The energy spent on communicating the findings betrays that at least some members of the team were concerned with the potential (mis)use of their findings in public discourse and social policy.

In this roundtable, we each offer a perspective on the GWAS informed by queer studies and our distinct disciplinary orientations and methods. Together, we argue that the 2019 GWAS marks a moment of both flux and continuity: a recognition of sexuality’s complexity and contingency alongside a continued belief in biology’s role in telling fundamental truths about behavior and identity. The roundtable begins with Patrick R. Grzanka, who suggests attention to affect reveals how the postgenomic science of sexuality is as mired in deep investments in biology and etiologial narratives of where sexual desires come from as are the earlier, monocausal explanations it supposedly jettisons. We then turn to Joanna Wuest’s political economic perspective, which uncovers both the truth *and* the absurdity in the notion that postgenomics has taken us beyond the “born this way” ideology. We

end with Stephanie Clare, who argues that the GWAS's treatment of "sex," defined as a binary system of male and female, is insufficient for understanding nonheterosexual sexual behavior and could be used to buttress arguments that use the legitimacy of science to fight trans rights. This treatment of "sex" indexes how, even as the GWAS breaks from a biocentric model of the human, at the same time it retains aspects of this model and maintains what Sylvia Wynter calls the "overrepresentation of Man." From our different vantages, our work converges around the notion that processes of reification—that is, those broader social forces that work before, after, and upon how the study is conceived, conducted, and published—best explain the persistent search for genetic determinants of sexual behavior.

### **Patrick R. Grzanka: "Programs of Life/Knowing Ourselves"**

I knew Ganna et al.'s study would be important, because it claimed to be so different from much of the sexual orientation science of the recent past, particularly the high-profile and highly controversial work of Hamer, Bailey, LeVay, and others, as well as prior studies with insufficient samples to detect significant effects. Since then, as part of my new book project, I have been conducting what Sara Ahmed (2006: 105) called an "ethnography of texts." Through interviews with study personnel and analysis of the paper's uptake in public discourse, I have been tracing the social lives of the GWAS. By following it around, I have shifted my own attention away from what *the data say* about the genetic foundations of sexual behavior and toward what is said *about and around the data*. Of course, data do not speak for themselves, but instead are spoken about and spoken for in the name of particular aims. I am especially concerned with discourse about Ganna et al.'s GWAS, including what the social actors who were involved in and encountered the GWAS say about it.

As we noted, the authors choreographed the study's release with input from nonscientist activists and science communications experts. Though the text of the study itself is vague, the authors reference the "long history of misusing genetic results for social purposes" (Ganna et al. 2019: 7). Sociologist and study coauthor Robbee Wedow wrote with biologist and study coauthor Stephen Phelps in the *New York Times* that "yes, your sex life is influenced by your genes. . . . The study's findings also complicate the relationship between genetics and sexuality" (Phelps and Wedow 2019). How precisely the findings would "complicate" this relationship became the focus of intense public relations work, practices that are relatively unusual for papers ostensibly about correlations between SNPs and traits. The work was always political, of course, because the authors sought to clarify a

scientific question about a socially contentious topic (i.e., what is the genetic contribution to same-sex behavior?), and the findings practically invite misinterpretation. Wedow and colleagues knew they were releasing their conclusions about the genetic architecture of same-sex behavior amid intense debates about the nature and origins of sexual orientation that play out in courts, laboratories, and broader popular discourse—what I called the “‘born this way’ wars” (Grzanka 2018).

Predictably, the headlines soon followed: “There’s no one ‘gay gene,’” (*Washington Post*), “Scientists quash idea of single ‘gay gene’” (*Guardian*), and “‘Gay gene’ ruled out” (*Telegraph*). Though the news coverage was typically more clarifying than the clickbait headlines suggest, the gestalt of reporting on Ganna’s findings announced the end of the hunt for the gay gene, as if a mythical odyssey had been abruptly interrupted by an inconvenient truth. Indeed, the thrust of the GWAS was that several parts of the genome contributed to some small amount of variance in same-sex behavior that appears to be context-specific, further invalidating the notion that a singular gene contained the secret of sexual orientation’s origins. Given the ubiquity of biological explanations of behavior (Panofsky 2014), the headlines could be read as contrarian or ironic. But another way of thinking about them is that they simultaneously evoke and confront an *affective investment* in bioessentialism: a public feeling, a structural, political, and deeply felt attachment to biomedical renderings of the self that have a contingent relationship to actual scientific knowledge.

For example, according to the scientific record, the gay gene had never actually been discovered, but the gay gene hypothesis nonetheless took on a mythic status during the 1990s and 2000s (Wuest 2021; see Hegarty 1997 for the related gay brain). The ascendance of the gay gene corresponded with a range of socio-historical and cultural factors that may have influenced a shift in attitudes toward gay and lesbian people. In the context of the HIV/AIDS pandemic, increased representation of white cisgender gay and lesbian people in popular culture (Schippa, Gregg, and Hewes 2006), the rise of attribution theory in psychology (Kelley 1967), and LGBTQ+ activists’ efforts to stop so-called conversion therapy (Waidunas and Epstein 2015), biogenetic explanations for homosexual behavior became hegemonic. As many others have elaborated (Epstein 1987; Walters 2014), the gay gene became a kind of biologizing trick, yoking a scientifically imagined biodeterminism to sexual minority rights. By the time Lady Gaga’s single of that name was released in 2011, “born this way” was as much a reflection of pervasive cultural beliefs as it was a political intervention, calcifying a doxa that was as much affective as empirical.

Even as public understanding of postgenomic science may be underin-

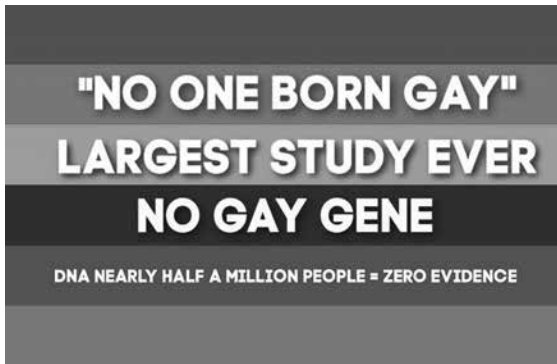


Figure 1. Image from First Stone Ministries, “New Study Reveals—AGAIN—No One Is Born Gay!” February 25, 2022. <https://www.firststone.org/articles/post/new-study-reveals-no-one-born-gay>.

formed or misguided, the GWAS both complicates and reiterates expert and lay sexual knowledges. On the one hand, the newsworthiness attributed to Ganna’s GWAS lies in its rejection of a singular genetic determinist account of sexuality in exchange for a scientifically sophisticated and empirically substantiated post-genomic paradigm. From this vantage, it may be tempting to position the GWAS as orthogonal to the gay brain, twin studies, and what Waidzunus and Epstein (2015) called earlier “truth devices” (e.g., phallometric testing), whereby the latter are determinist and reductionist and the GWAS is nuanced and multidimensional. From a strictly scientific perspective, this may indeed be an accurate characterization of how the evidence produced by the GWAS refutes earlier, invalid accounts of sexual orientation’s etiology.

Headlines in the popular press announcing the results of Ganna et al.’s GWAS index a public understanding of homosexuality that would be unsettled, if not threatened, by the disappearance of the gay gene. Whether or not the gay gene hypothesis had any actual effect on anti-LGBTQ+ religious conservative groups’ beliefs or behavior, its rejection was celebrated by at least some proponents of conversion therapy. For example, an evangelical Christian website produced this image (see fig. 1) alongside a column about Ganna’s GWAS. Reading the paper as proof that no one is born gay, sexual orientation change advocate Stephen Black said that “gay advocates will also try to spin this to communicate that ‘conversion therapy’—talk therapy to help people overcome homosexuality—is bad” (Otis 2019). Black, who identifies as having come “out of homosexuality 37 years ago,” said Ganna’s findings merely verify what “most Christians have been saying all along”: “When anyone engages in sexual immorality, it physically changes brain structure, not the other way around” (Otis 2019). Ganna and colleagues’ concerns about their work being weaponized—as justification for “discrimination on the basis of sexual identity and attraction” (Ganna et al. 2019: 6)—is at least partially

substantiated by Black's work *and* by headlines in the popular press. With no gay gene to be found and a burgeoning epigenetic framework that actually does reject the deterministic logic that gay people are born gay, the GWAS could buttress arguments for or *against* LGBTQ+ rights, particularly in terms of sexual orientation's perceived immutability (Diamond and Rosky 2016), despite well-intentioned efforts to mitigate against such a response.

While ex-gay Black's political ambitions and relationship to science are unquestionably divergent from geneticist Ganna's, there is a strange affinity within at least the rhetoric of their conclusions. For example, Ganna told me that, in contrast with lay beliefs in genetic determinism, he and his colleagues hope to use the GWAS to show how "if you change the environment, the genetics change." Specifically, he pointed to his team's findings that same-sex sexual behavior is associated with risk-taking, which he associated with societal heterosexism, that is, one has to risk social ostracism in order to act on same-sex desires. "But what if you live in a society where you don't need to be a risk taker to engage in same-sex behavior?" he proposed. "Then that genetic signal that was determining same-sex behavior is not going to exist anymore. It just disappears, because the environment has changed." Here, epigenetics, as viewed through the lens of the GWAS, help expose the profound mutability of the genome and of sexuality, though hardly the kind of conditioned mutability proposed by coercive sexual orientation change advocates. Ganna conveyed a strong sense of the genome's plasticity and of the immense amount of data required to estimate even small amounts of variance in outcomes. He told me that when it comes to sexual orientation, "some is environment, some is genetic, and I think it's nothing unexpected with that and fits my expectations and my observations." Wedow said similarly, "There shouldn't be anything shocking or unpredicted even [about the GWAS], given what we know about behavioral outcomes." These dispassionate accounts of "highly predictable" sexual epigenetics are in stark contrast with the bombast of evangelical conversion therapy proponents *and* LGBTQ+ activists, a point of which both Ganna and Wedow seemed acutely aware. Yet, these distinct constituencies, Christian conversion therapy proponents and postgenomic scientists, wind up in an epistemic affinity—"no one born gay," as a headline on Black's website put it (Otis 2019)—that might disquiet especially the scientists who view GWAS techniques as possessing a politically liberatory potential. Furthermore, if their findings were so obvious, then why was the study so important?

The explosion of attention directed at this paper sparked the mandatory questions for considering the politics of biomedical knowledge: what knowledge? Whose knowledge? For what ends? To borrow from Steven Epstein (2020), I also

think reactions to Ganna's GWAS demand an interrogation of the affective dimensions of our "epistemic attachments." Geneticist Shiro Ikegawa (2012: 240) wrote that the technology undergirding the GWAS has produced "the most spectacular results of the human genome study." Ikegawa asserted that the GWAS exposes our "program of life": "This knowledge (knowing ourselves) is revolutionizing medicine" (240). What kind of program of life had Ganna, Wedow, and colleagues actually uncovered? And how would these programs be taken up as knowledge (*knowing ourselves*)?

It is imperative to consider how lay and authoritative discourse about the mysteries of the genome and its associations with sexual behaviors rearticulate affective investments in sexuality's elusive biogenetic foundations (Grzanka 2019). The GWAS was received as groundbreaking, but its own authors described the findings as unsurprising and totally predictable. It was as if the mystery of sexual orientation was not a mystery at all; it was just hidden out of sight, waiting to be discovered. In that case, are the sexual epigenetics described by Ganna et al. (2019) actually a rejection of biogenetic essentialism as an epistemic framework—a new program of knowledge—or a reconstitution? Beyond the recalcitrant essentialist/constructionist or nature/nurture binaries, these new approaches to genomic mapping recalibrate long-standing "born this way" logics in terms of technoscientifically laden attachments to the science of sexual desires: inputs and outputs, on and off switches. The authors of the GWAS study do not claim to have discovered sexual orientation in the genome; epistemically, they do not think such a discovery is even possible. In turn, their work effectively circumvents questions about sexual *orientation* while nonetheless claiming (authoritative) knowledge about sexual *desires* and *behavior*. The evidence has shifted and the conclusions have been modified substantially from the work of Hamer, LeVay, and others who envisioned a much more hereditary and identitarian framing of sexuality (e.g., *gay* brothers beget *gay* brothers). And yet the GWAS still purports to identify the biological matter that influences what makes a body queer—or at least what makes some bodies have nonheterosexual sex. There's not one gay gene, and the GWAS negates even the possibility of such a proposition. Nevertheless, the practitioners of these genome-wide analyses herald the technology's capacity to reveal our program of life—to show us the knowledge of ourselves. Given the hegemonic status of "born this way" ideology and the alleged power of the GWAS to expose what has been obscured by earlier sciences, might the new sexual postgenomics fail to constitute what Michel Foucault (1970) referred to as an epistemic break in the order of things, and instead represent the evolution of a knowledge project rooted firmly, consistently, in the biomedicalization of everything?



### Joanna Wuest: “The Dream of Bioessentialism Is Alive in a Postgenomic Era”

What are we to make of a recent genomic investigation that—rather than concluding with a grand statement on biology and predestiny—stresses the significant role that *sociocultural factors* may play in shaping an individual’s penchant for same-sex relations? While public discourse about the 2019 GWAS has generally been framed in light of earlier quests for the fabled “gay gene,” the most striking parallels are actually between studies that balanced social and biological factors, which flourished between the mid-1960s and the early 1980s (Kendler 2019). In placing the Ganna et al. GWAS in the context of its antecedents, we might grasp which changes in the political economy of scientific research, civil rights advocacy, and culture writ large have led some to believe that biological origins stories for sexual orientation have lost much of their allure. To the contrary, a deeper inspection of the GWAS and its reception reveals how bioessentialist ideology—that is, the theory that genetics, hormones, or neuroanatomical factors play *the* determinative role in what it means to be a man or a woman, gay or straight, cisgender or trans—has endured. This perspective demonstrates how, despite an uptick in talk of “gender fluidity” and a renewed interest in the “spectrum of sexuality,” the domains of science, culture, and politics have not abandoned such essentialist thinking just yet.

Decades before geneticists would plumb the human genome in search of simple gene-to-trait relationships, psychiatrist and onetime president of the American Psychiatric Association Judd Marmor strove to understand homosexuality’s complex nature and origins. An early skeptic of the psychoanalytic notion that homosexuality constituted a pathology, Marmor’s multiple causes thesis was an attempt to oust the pathological model’s peddlers while balancing a range of etiological factors (including once-neglected biological hypotheses). In expounding sexuality’s sundry roots, Marmor (1965: 5) introduced his edited volume, *Sexual Inversion: The Multiple Roots of Homosexuality*, with the observation that researchers and clinicians “are probably dealing with a condition that is not only multiply determined by psychodynamic, sociocultural, biological, and situational factors but also reflects the significance of subtle temporal, qualitative, and quantitative variables.” In a preface to his collection *Homosexual Behavior*, Marmor (1980: xi) confirmed that “the complex issues surrounding the phenomenon of same-sex object-choice cannot be understood in terms of any unitary cause whether it be biological, psychological, or sociological.”

Despite this belief in multiple causes, Marmor steadily granted biological factors preeminence, thereby allowing socio-environmental determinants to recede

into the background. Even in his 1965 writings, Marmor (1965: 122–23) entertained the notion that a “chromosomal abnormality” might be a *primary* determinant of homosexuality. Throughout the 1980s, Marmor posited that intrauterine or early postnatal influence or the hypothalamic centers of the male brain might play some determinative role (Marmor 1980, 1985). By the turn of the millennium, Marmor had become convinced that sexuality was largely biologically determined. In an interview conducted the year before his death, Marmor observed that “we now know that, to a great extent, variations in sexual orientation are determined by the degree of androgenization of the fetal midbrain at a critical period of intrauterine development,” that is, neuroendocrinological causes were key (Rosario 2003: 28).

Marmor’s trajectory presents a microcosmic account of how biological renderings of sexuality came to pervade the discourse, though the shift stems from much broader societal transformations. Among these were novel scientific discoveries, an explosion of federal and private funding for biomedical research, and the burgeoning relationships formed between reformist scientists like Marmor and the budding gay and lesbian rights movement. Throughout the mid- to late twentieth century, the federal government encouraged biomedical research through expanded university grants and by slashing regulatory restrictions on public-private partnerships (Sunder Rajan 2006; Cooper 2008). Many of these ventures are specifically *biomedical* in nature and work by amassing vast quantities of human data (Elwell 2018). For example, biobanks of human DNA and tissues—which are ostensibly compiled for medical research—have functioned as low-lift data mines for testing hypotheses about human difference.

Buttressed by this availability of funding, research into the biologically determined nature of human behavior thrived (Panofsky 2014). Psychologists looking to distance themselves from discredited “social contagion” theories embraced biological hypotheses (Bayer 1981), while novel ventures like behavioral genetics and sociobiology capitalized on an influx of grant money. Notably, geneticist and author of the 1993 “gay gene” study Dean Hamer made use of this funding in his pivot from cancer research to a hunt for homosexuality’s genetic origins (Hamer and Copeland 1994). On the political front, Marmor and Hamer helped civil rights organizations like the American Civil Liberties Union (ACLU) and the Human Rights Campaign argue that, because gay identities were harmless and immutable, they were worthy of heightened judicial protections and social acceptance alike.

Given the biodeterministic enthusiasm of the past several decades, it was surprising to witness Ganna et al. interpret the 2019 GWAS findings with nuance and humility. Ganna and the other investigators were up front about the limita-

tions of measuring sexuality's incalculable complexities. According to their own hedging, the study's dichotomous variable for sexual behavior "collapses rich and multifaceted diversity among nonheterosexual individuals" (Ganna et al. 2019: 4). Additionally, rather than taking identity as a "thing" in itself, they conceptually distinguished attraction, behavior, and identity as correlated yet distinct. In their own words, the constraints of traditionally operationalized categories surely neglected "the intricacies of the social and cultural influences on sexuality" (3, 10). Could it be that this deep dive into the human genome may have discovered that sociocultural factors might play the greatest role in shaping human sexuality?

However, just as Marmor's balanced considerations belied an incipient bioessentialist turn, the Ganna et al. study was a sign of the biological perspective's tenacity. Although media outlets got the message that the search for a *singular* gay gene had ended years ago along with the most hubristic hypotheses of the Human Genome Project's boosters, they touted the discovery of these new genetic determinants, making scant reference to just how small a role those variants might ultimately play (Belluck 2019). As stalwart defenders of the biological thesis were quick to note, the GWAS did not slam the door on old-school biodeterminism. Indeed, on the study's two-year anniversary, the authors of a similarly designed undertaking trumpeted new insights into the "Darwinian paradox" of same-sex behavior (Zietsch 2021). Even Ganna et al. noted that future research may find additional genetic determinants and related hormonal factors. Ironically, some of the study's most vocal critics even repurposed biodeterministic assumptions for their opprobrium. Whereas Ganna et al. were emphatic that no statistical measure could predict an individual's orientation, researchers affiliated with the Broad Institute condemned the *Science* study for unwittingly inviting future discrimination in the form of gene editing or embryo selection (Gurjao 2019). In the timbre of their rebuke, one can hear an earlier generation of critics' fearful cries about the gay gene's neo-eugenic potential.

There is no shortage of political economic and legal incentives propping up bioessentialist inquiries and ideologies today. It is revealing that 23andMe provided Ganna's team with both personnel and data on the genetic profiles of over one hundred thousand individuals. The DNA home testing firm's economic imperative is to assemble data and market drugs to a consumer base taken by the epistemic promise of bioreductivism. When interviewed about the Ganna et al. GWAS, 23andMe senior scientist Fah Sathirapongsasuti explained that "the study is in part a response to gay, lesbian, and bisexual people's curiosity about themselves. . . . Research and information about sex and sexuality is among the categories most requested by 23andMe's customers" (McIntosh 2019). Just as the

race-targeted heart medication BiDil was infamously marketed to African American patients a decade ago, so too has biomedicine been able to make a buck off those eager to learn their genomic personhood (Kahn 2012). In other words, modern research into sexual orientation's genetic nature and origins is in large part a byproduct of the late neoliberal era nexus between investment-driven state policies and the private biomedical industry.

Additionally, LGBTQ+ advocacy organizations continue to find biological narratives useful in thwarting revanchist right-wing litigation groups and conversion therapists who insist that “rapid onset gender dysphoria” and the clinical specter of “irreversible damage” pose an existential threat to young Americans’ bodies and fragile psyches (Shrier 2020). In the face of such threats, the National Center for Lesbian Rights continues to promote its “Born Perfect” anti-conversion therapy campaign fit with a not-so-subtle rainbow-hued fingerprint logo, while the ACLU relies on studies of brain structures in transgender individuals in their challenges to anti-transgender policies (Wuest 2019, 2021).

So, what to make of this curious, seemingly incommensurate mixture of persistent bioessentialism on one hand, and Ganna et al.’s rhetorical emphasis on sociocultural factors? Consider that in one of the most robust self-report studies to date, nearly 10 percent of surveyed high schoolers identified as gender diverse, operationalized as any gender identity incongruent with their assigned sex at birth (Kidd et al. 2021). Similarly, a 2021 Gallup poll found that over 15 percent of Generation Z self-categorizes as LGBT (Jones 2021). Might this be evidence that queer identities *are* sensitive to cultural ebbs and flows, and that rising rates of legal protections and visibility have influenced individuals in ways that conservatives have always feared and that liberals—being so wedded to biopolitical legitimation—could hardly afford to consider? When it is less dangerous and more socially acceptable to stray from long-standing gendered and sexual norms, might there be more people who fit under the queer umbrella?

Whether this is an accurate depiction of reality, it has failed to garner influence either in mainstream scientific circles or among LGBTQ+ advocates. In its coverage of the high school gender identity study, the LGBTQ+-themed magazine *them* dismissed the notion that the world was becoming quantitatively queerer. “Experts believe it’s not the case that the percentage of people who are transgender is necessarily on the rise,” the magazine reported (de la Cretaz 2021). “Rather, as more language has developed for expansive gender identities, and LGBTQ+ visibility and acceptance have increased, more young people feel comfortable openly rejecting the limitations of cisgender identity at an earlier age than they would have otherwise.” The core premise here meshes well with bioessentialism,

if not an epigenetic variant of its core: more tolerant environments allow for the expression of an underlying queer disposition.

This commonsense sentiment resounds of classical determinism. It divorces a person's "true self" from the self's environment, rendering the two as wholly distinct entities separated by a metaphysical gulf. This is not even an accurate description of how animals and plants express traits in new environments, let alone a plausible account of how intricate human behaviors and identities might spring into being. Thus, the logic of identity with which we are left may be culturally inflected, but it is a closer cousin of its biological ancestor than we might assume. As the reworked narrative goes, we know that queer identity is both multifaceted and anything but inert; however, we also understand identity to be something that is somewhat stable and discernible under a microscope and constituted by an accompanying *telos* that is partially determined by a biological element. Recognitions of complexity and contingency aside, this ought not be mistaken as some wish fulfillment of queer theory. Rather, the postgenomic perspective owes its explanatory power to its inherent flexibility; it is labile enough to accommodate and absorb much critique. Thus, the dream of bioessentialism is still alive in a postgenomic era. What we've inherited is a composite essentialism; a capacious, less rigidly biodeterministic and more socio-culturally textured one, but a bioessentialism all the same.

### **Stephanie Clare: "Biological Sex and the 'Overrepresentation of Man'"**

While I read Ganna et al.'s 2019 GWAS as providing a bioinflected queer model of sexuality, one that makes room for some level of complexity and contingency, the study at the very same time treats "sex," as in "male" and "female," as straightforward and self-evident. In this essay, I argue that this treatment of sex clarifies how the GWAS continues in the tradition of the sciences of sexuality as they have been entangled in the coloniality of power (Terry 1999; Somerville 1994; Wynter 2003). Such an understanding of "sex" is both inadequate for understanding sexuality and is an ideological, historical, and culturally contingent effect, one that queer, trans, and scientific communities would do better to contest than to reproduce.

Within the GWAS, the difference between the ways that "sexuality" and "sex" appear is striking. The article describes sexuality as characterized by "multifaceted richness and complexity" (Ganna et al. 2019: 6). Eager not to simplify sexuality, the researchers consider "different aspects of sexual orientation and behavior," including the possibility that "attraction, identity, and fantasies" do not neatly align (6). One of their central research questions concerns to what extent genetic influences are the same for same-sex behavior, attraction, fantasy, and identity. In

contrast, the authors write that their “analyses and results relate to biologically defined sex, not to gender” (2). The researchers do not explain how they understand “biologically defined sex.” This definition is treated as self-evident, but it is foundational to the study: in order to identify same-sex sexual behavior, attraction, identity, and fantasy, they have to have a notion of “same-sexness.” Quite simply: the complexity of sexuality in the study rests alongside a framing of “sex” as straightforward and self-evident.

This treatment of sex is problematic for many reasons. First, by not explaining “biologically defined sex,” the scientists risk contributing to the understanding of “biological sex” that is often used to cloak intolerance, especially against trans people, with, as Katrina Karkazis (2019: 1899) puts it, the “veneer of science.” The study excludes samples from people whose “whose biological sex and self-identified sex/gender” do “not match” (Ganna et al. 2019: 2). The article allows that this is “an important limitation . . . because the analyses do not include transgender persons, intersex persons, and other important persons and groups within the queer community” (2). But it is not the exclusion of trans, intersex, and other people that is the problem (I’m not sure what we might have to gain through inclusion). Rather, the study’s representation of sex, especially as highlighted against its treatment of sexuality, gives fodder—likely inadvertently—to the discourses that cite “biological sex” in order to discriminate. For instance, in a leaked memo from 2019, the US Department of Health and Human Services proposed defining sex “on a biological basis that is clear, grounded in science, objective and administrable” and that is “based on immutable biological traits identifiable by or before birth” (Karkazis 2019: 1899). This understanding of biological sex would have nullified Title IX protections for both transgender people and people with differences in sex development. In contrast, Karkazis (2019: 1899) convincingly argues that “we understand sex not as an essential property of individuals but as a set of biological traits and social factors that become important only in specific contexts, such as medicine, and even then complexity persists.” Critically, her point is universal: it is not just for some people that sex is not an essential property, but for all of us. This complexity and contextuality are completely covered over in the GWAS.

Building on this point, it is especially striking that the language used in the GWAS makes room for something called “self-identified sex/gender.” The inclusion of the word “sex” here is notable. I read it as an implicit nod to the ways in which some transgender activist organizations have argued that constitutional and federal civil rights law ought to “recognize gender identity as a biologically constitutive element of sex” (Wuest 2019: 336). In the context of this GWAS, however, it is significant that the researchers maintain “sex as biologically defined” as

separate not only from “self-identified gender” but also from “self-identified *sex*.” In other words, while acknowledging the attempt to define gender identity as part of sex, at the very same time, the study maintains “sex” as something that exists separate from this. This is at once a nod toward and dismissal of transness, and it demonstrates how the study makes space for the contextualities and complexities of biology while also fixing biology.

This treatment of sex is not only problematic in the context of trans politics, however. I argue that it is also not adequate for understanding sexuality, including sexual behavior. The study purports to include only people whose “biological sex” and “self-identified sex/gender” “match” (Ganna et al. 2019: 2). This means that while the authors claim to analyze same-“sex” sexual behavior, in fact, they are presumably writing about same-cisgender sexual behavior, too. But notice that this is not what is claimed. One reason this might be the case is that sexual behavior, attraction, identity, and fantasy are not easily reducible to simple sexual dimorphism. Queer archives are full of examples of this, but I’ll give just one: here is Frieda, whose voice appears in the Sex Variant Study of the 1930s and whose story is recounted by Jennifer Terry (1999: 227):

At twenty-six I found Ursula, a woman I am actually in love with. . . . She is a big, bold, mannish, fat woman who heaves into a room like a locomotive under full steam. . . . To me this force, this energy, this bigness and boldness are tremendously attractive. My admiration for bulk is such that I really enjoy getting into bed with this mountain of flesh. . . . She is 100 percent masculine, both mentally and physically.

In this passage, Frieda might be describing her experience of “same-sex sexual behavior,” but how relevant is “same-sexness” to the sexual practice being described? Even though she seems to experience sex apart from gender (specifying that Ursula is “a woman,” though she is “100 percent masculine”), Frieda’s desire seems to be framed around masculinity and even aspects of embodiment more generally (in the form of bulk). If we were to turn to Ursula’s experience, it is likely that she would describe her sexual preference differently. Would it then really make sense to describe her sexual behavior as the same as Frieda’s? Quite simply, are both really practicing forms of “same-sex sexual behavior”? Is there even a sameness of sex here?

The GWAS’s concept of sex as defined by biology allows for an organizing binary, even if that concept covers over the wild slipperiness and play of sex/gender within (queer) sexual practice. Such an organizing binary requires distin-

guishing between “sexuality” or “sexual behavior” on the one hand and “sex” on the other, such that one can have queer sexuality alongside stable, dimorphic sex. The study, much like most social, behavioral, and medical sciences, treats the distinction between these realms as self-evident, but this is a cultural and historical effect, entangled in power relations. It has been tied to a politics of respectability and homonormativity. It has also contributed to racial and class inequalities and to colonial mentalities, as well. For example, during the 1950s, many homophile groups in the United States sought to promote gender normativity among “homosexuals” as a means of gaining credibility (356). Members of the Mattachine Society pressured its left-leaning founders to “abandon their radical class politics, while simultaneously rejecting ‘overtiness,’ ‘flamboyance’ and gender-transgressive markers of sexuality” (Valentine 2006: 43). In the 1980s, many lesbian feminists understood the category of “woman” as essential, which is to say determined and unchanging, but saw lesbianism as a choice: the embrace of a political ethos that rejects patriarchal heterosexuality (47). Butch-femme culture, a staple of working-class lesbian culture, was then viewed as a bad reproduction of patriarchy and anti-feminist. In each of these cases, sexuality becomes separate from sex and gender such that queer sexual practice does not interrupt the inhabitation of normative, binary sex and gender. To take one last example, many Native and Indigenous people have developed modes of self-understanding, such as two-spirit, that do not separate sex and gender from sexuality (McMullin 2011; Roen 2001). In fact, as Joanne Barker (2017: 13) explains, “Critical Indigenous studies scholars have uncovered multiple (not merely third genders or two-spirits) identificatory categories of gender and sexuality within Indigenous languages that defy binary logics and analyses. Within these categories, male, man, and masculine and female, woman, and feminine are not necessarily equated or predetermined by anatomical sex; thus, neither are social identity, desire, or pleasure.” In this framework, sex is not determined by anatomy, and sex, gender, and sexuality, in their entanglement, are “reckoned in social relationships and responsibilities” (13). Thus, while it is true that the GWAS’s separation of sex (as in male and female) from sexuality does not stand out from dominant Eurocentric modes of understanding, and is probably in line with the vision of the LGBTQ+ activist organizations the scientists consulted, it is worth pointing out that this distinction is not neutral or universal. It is not an essential property of the body or phenomenal experience.

This brings me, finally, to my last point: while racial typologies do not organize the study, racial logics inform the ways in which the research is communicated. In fact, the GWAS’s treatment of “sex” can be read as part and parcel of what Sylvia Wynter (2003: 257) calls the “overrepresentation of ‘Man.’” The



GWAS is based only on the analysis of the DNA of “participants of European ancestry” (Ganna et al. 2019: 7). In the field of genomics, the argument is that such an approach to human difference shifts from “typological notions of race to statistical notions of difference among populations” (Shim et. al. 2014: 505). Populations are understood as geographically based, produced through particular migrations and geographic dispersion, and therefore categorized by gradual variations across space rather than discrete biological types. Nonetheless, typological and geographic models often interweave with one another (Fullwiley 2008).

There may be reasons for a GWAS to focus on a particular, geographically based set of DNA samples: as a control, for reasons of internal validity, and in recognition that DNA is only meaningful within particular environments. However, in the published study and its paratexts, the limited sample is never explained; it is just recognized in passing as a limit. This naturalizes the choice, treating it as self-evident, without need for explanation. It is also notable that while the GWAS is based on “participants of European ancestry,” its conclusions consistently and repeatedly remain unmarked by ancestry. For example, in the one-page published research article summary, nowhere do we see mention of this sample. The summary of the study’s conclusions is posited in general, as well: “Same-sex sexual behavior is influenced by not one or a few genes but many” (Ganna et al. 2019: 1). The article’s title, “Large-Scale GWAS Reveals Insights into the Genetic Architecture of Same-Sex Sexual Behavior,” does nothing to alert the reader to the specificity of the sample. Both the summary article and the research article itself even begin with a specific nod to the universal: “Across human societies and in both sexes, some 2 to 10% of individuals report engaging in sex with same-sex partners” (1). White people often stand in for the universal, representative of the human while also becoming invisible as a particularity. This positioning of whiteness racializes others, who come to stand apart from the universal human. The research treats “participants of European ancestry” in the same way that whiteness is often framed. Because of this, I argue that racial logics inform how the DNA samples are represented, even if those samples are not, strictly speaking, organized according to racial typologies but rather to geographic population. It is not much of a jump then to argue that the study partakes in the “overrepresentation of Man,” as the European bourgeois becomes figured as the universal (Wynter 2003: 257). “Any attempt to unsettle the coloniality of power,” Wynter writes, “will call for the unsettling of this overrepresentation” (260). For Wynter, this unsettling will challenge the dominant “biocentric” model that “assumes we are, totally and completely and purely, biological beings, beholden to evolution” (McKittrick 2015: 2). This model, which finds its ascendancy with Darwinian science and

was “implemented by the West and by its intellectuals,” has been entangled in what Wynter (2003: 263, 260) calls the “coloniality of power.” That is, it is within the biocentric paradigm that we have the emergence of “race,” which legitimizes inequality within liberal democracy.

It would be unfair to argue that the GWAS assumes that we are “totally and completely and purely biological beings” (McKittrick 2015: 2). However, the biocentric model appears in this study in its reliance on “sex as defined by biology” and in its assumption that the separation of “sexuality” from “sex” is neutral and obvious—a fact of biology. This treatment of “sex” connects to the GWAS’s treatment of ancestry, because it is especially for a population of European ancestry that sex and sexuality are readily separable. Thus, while the GWAS makes space for the complexity and contextuality of the biology of sexuality, at the same time its understanding of “sex” returns to the biocentric model in its entanglement with the coloniality of power and its “overrepresentation of Man.”

## Note

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