

# Where Does Sexual Orientation Come From? Essentialism, Social Constructivism, and the Limits of Existing Epigenetic Research

By Matt Klepfer

**ABSTRACT.** Research and theory into the origins of sexuality has been dominated by essentialists and social constructivists. Essentialists argue that sexually is a culturally independent biological force, whereas social constructivists argue that sexuality is the product of a particular culture at a particular time. Epigenetics, which studies the effects of one's environment on their body, has the potential to provide new research into the origins of sexual orientation. By following essentialist assumptions on gender and sex, I argue that existing epigenetic research fails to produce convincing conclusions on the origins of sexual orientation.

The long standing debate on the origins of sexual orientation continues to be fought between essentialists and social constructivists. Epstein (1987) contends that the root of this debate is “the all-too-familiar terrain of nature vs. nurture.” Essentialists view sexual orientation as a culturally independent biological force and treat sexual orientation as “cognitive realizations of genuine, underlying differences.” Social constructivists believe that sexual orientation is the production of a particular culture at a particular moment in time and that sexual orientation belongs “to the world of culture and meaning, not biology.” Social constructivism is appealing largely because it shows that society is changeable based on its environment, whereas those with essentialist and biological deterministic views conceptualize differences as unchangeable givens; as

described by Sofoulis (2009), essentialism and social constructivism is a genes vs. environment dualism. New scientific research into epigenetics shows that environmental factors can influence genetic activity. This epigenetic research not only removes the genes vs. environment dualism, but has the potential to show how one's environment can shape one's body. Epigenetics has the potential to provide answers that are satisfactory to both essentialists and social constructivists, however, existing epigenetic research on homosexuality merely reinforces essentialist assumptions about gender and sex, as well as established notions of masculinization and feminization.

### **Essentialism**

Much of essentialist theory has been supported by scientific research into homosexuality. Many twin studies have been conducted that observe homosexuality among monozygotic and dizygotic twins. In the first, Kallmann (1952) observed that homosexuality rates were higher among monozygotic twins than dizygotic twins. Eckert (1986) studied twins who were raised separately and had similar findings. Further, Hamer (1993) studied families with two gay brothers, observing that gay men tended to have more homosexual males on the maternal side of their family tree. He concluded that homosexuality is probably carried by the mother.

LeVay (1991) studied the brains of dead AIDS victims, who he assumed to all be homosexuals, finding that a part of the hypothalamus in heterosexual brains was on average twice as large as the dead homosexuals. Sanders (2014) and his team conducted genome-wide linkage scans on homosexual brothers, finding that gay men share similarities in two areas of genome. They concluded that chromosome 8 and chromosome Xq23 influence the development of male sexual orientation.

For many essentialists, these studies and many more provide evidence that sexual orientation is a biological force engrained within our very being.

## **Social Constructivism**

Foucault (1978) pioneered the social constructivist theory of sexual orientation, theorizing that there is no inherent human sexuality, but rather changing levels of human ability to experience consciousness and physical behavior relative to societal forces of categorization and regulation. Sexuality changes through time and across societies that are shaped and reshaped by configurations of power. Perhaps similar to sexuality, Hacking (1986) points out that classifications of race change at least every ten years in the US as the census redefines racial categories. Foucault and Hacking argue that our identities change over time, sexual and otherwise, because of our methods of categorization.

Stein (1992) argues that social constructivist theory, if true, would have “deep ramifications” on many previous studies of sexuality because most have assumed the objects of their studies are “natural rather than cultural entities” (p. 5). Most research on sexuality has been “scientific,” or rather, looking for some sort of biological rationale for sexual orientation. Tiefer (1987) theorizes that “the domination of theory and research by the biomedical model” has created a monopoly on knowledge production related to sexuality. The domination of medicalized theory, combined with the public’s desire for medicalized discourse it commonly perceives to be value-free, produces knowledge that inevitably emphasizes the body as the source of difference. Social constructivist scholarship has a hard time receiving legitimacy and funding due to the medicalization of sexuality. McIntosh (1968) points out that lay people will “discuss whether a certain person is ‘queer’ in the same way as they might question whether a certain pain indicated cancer,” as if we inherently discuss sexuality in medical terms.

Vance (1989) points out that the mainstream gay rights movement adheres to essentialism as “an effective weapon against persecution.” This is not in a commitment to essentialist theory per se, but rather a realization of the political usefulness of the “born this way” ideology. She highlights politically appealing arguments made by essentialists; for example, if homosexuality is inborn, then homosexual school teachers cannot influence their identity on school children. For these reasons, Vance states that arguments against essentialism are perceived by some gay communities “as damaging to gay interests.” As Epstein (1987) observes, this is because gay communities view themselves as “legitimate minority group[s],” which solidifies the idea that their identity is a real difference. Social constructivist theories, Epstein hypothesizes, are “out of sync” with the self-understandings of gay communities; the communities are unaware of the constructedness of their identities, see difficulties in getting their communities to a consciousness, and fear the social constructivist threat to group identity and public legitimization.

### **The Black Box**

The process of scientific “fact” making can be helpful to analyze how scientific evidence supporting essentialist viewpoints has supported and developed mainstream views on the origins of sexual orientation. Epstein (1996) explains that many sociologists use the phrase “black box” to describe the construction of scientific facts. The black box has an input, in this case “What are the origins of sexual orientation?,” and an output, which from an essentialist viewpoint would be that “sexual orientation is a culturally independent biological force.” The black box itself is the “contingency, controversy, and uncertainty” it takes to go from input to output. Fact making is the closing of a black box, when “contingency is forgotten, controversy is smoothed over, and uncertainty is bracketed” (p. 28).

Epstein explains the process to close black boxes; “[scientists] take observations, present them as discoveries, and turn them into claims, which are accepted by others, and may eventually become facts, and finally, common knowledge” (p. 28). As scientific discoveries find “causes” for sexual orientation, black boxes are closed, and the mainstream United States gay community adopts scientific findings as facts. As Epstein states, “laypeople are almost always in the position of having to trust what experts tell them is true” (p. 15).

Conrad (2016) describes how gay rights activists from the 1980s on have supported essentialist theory because of its persuasiveness when demanding “equal rights.” As quoted by Vance (1989) earlier, essentialism is “an effective weapon against persecution” because a biological innocence would mean that gays are deserving of rights. Gay rights activists hoped to use science for social justice in order to gain greater liberties. In contrast, Conrad quotes bioethicist Edward Stein who is critical of a science for social justice approach, arguing that “lesbian and gay rights, respect for queer relationships, and so on, should be cast in terms of justice, rights, privacy, equality, liberty and the like,’ and not whether homosexuality is a choice or biologically innate” (as cited in Conrad, 2016). Science can be used as a tool to promote social justice, but what are the (un)intended consequences of doing so?

## **Science and Social Justice**

Lehr (2007) describes how science is often used as a tool for social justice because it “[establishes] credibility for social justice efforts by bypassing the need to establish the authority of certain moral or political claims over others. Instead, these moral or political claims become ‘objectified’ and thus less ‘objectionable’ within public and private spheres” (p. 1). In wake of attacks against the rights of LGBTQ people in the United States, Lehr points out that using science as a tool for social justice may seem as our

only tool to fight against oppression. She warns, however, that as those involved with social justice “it is never enough to ask what we gain through science, but we must also ask what we risk and what we lose” (p. 2). She warns that using science as a tool for social justice create “a situation in which the authority of science goes unchallenged, thereby limiting what counts as appropriate behavior... in relation to science and to the state” (p. 23).

## **Epigenetics**

Epigenetics studies the interaction between the social and the biological and could provide a more appropriate form of science as social justice, since it is capable of change overtime. It also may provide new answers on the origins of sexual orientation, since it combines both biological and environmental factors. Moore (2015) defines epigenetics as the “interactions between DNA and other molecules in [their] local environment, interactions that influence gene expression.” As described by Balter (2015), factors such as nutrition, stress, and exposure to environmental toxins leave “epi-marks,” which can remain in the body for life and be passed to offspring. Epigenetics shows environmental factors can influence genetic activity, and perhaps more importantly, that they can continue to be changed.

In one of the only epigenetic studies focusing on sexual orientation, Rice (2012) found that some “epi-marks” influence a fetus’s sensitivity to testosterone, which may “masculinize the brains of girls and feminize those of boys, leading to same-sex attraction.” The research is based off “a long succession of studies” which have concluded that “XY fetuses experimentally exposed to androgen antagonists during gestation develop feminized genitalia, brains, and behavior, whereas XX fetuses exposed to elevated androgens develop masculinized phenotypes for these same traits.”

A basic social constructivist argument is that gender, along with assigned roles of masculinity and

femininity, are social constructed. The “long succession of studies” that Rice is basing his research on are flawed when viewed upon from a social constructivist perspective. Kessler (1990) and Faust-Sterling (1993) use intersex patients as a case study to show how gender, and our gender binary, is primarily determined by social factors. Kessler emphasizes how sex assigned at birth is created to produce individuals capable of heterosexual sexual intercourse. Lorber (1994) describes how gender is a process, stratification, and structure, and how its process, complete with its existing hierarchies and composition, has been assigned to us socially. Lehr (2015) emphasizes how gender is sociohistorical and changes across time and location. As Lehr (2007) points out quoting Kessler (1990), “if sex as male and female is not natural, how can categories of sexuality be?” Vast literature supporting a social constructivist perspective on sex, gender, and masculine/feminine gender roles would disprove the notion that fetuses exposed to androgen would develop feminized genitalia, brains, and behavior since what we would consider to be feminized is a socially constructed product of one’s environment and changes over time by location and culture. Rice’s findings can be similarly challenged since he used flawed definitions of feminization and masculinization.

Epigenetics has the possibility to challenge the social constructivist and essentialist dualism of environment vs. genes. Since many epigenetic studies continue to rely on essentialist views on gender and sex, however, it does not appear that epigenetic research is yet ready to provide findings that are in line with strongly held social constructivist understandings.

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## References

- Balter, M. (2015). Can Epigenetics Explain Homosexuality Puzzle? *Science*, 350(6257), 148.
- Conrad, R. (2016). The Lure of the Gay Gene. *The Gay and Lesbian Review*, 25-28.
- Eckert, E. D., Bouchard, T. J., Bohlen, J., & Heston, L. L. (1986). Homosexuality in monozygotic twins reared apart. *The British Journal of Psychiatry*, 148(4), 421-425.
- Epstein, S. (1987). Gay Politics, Ethnic Identity: The Limits of Social Constructionism. *Socialist Review*, 9-54.
- Epstein, S. (1996). *Impure Science: AIDS, Activism, and the Politics of Knowledge*. Berkeley: University of California Press.
- Fausto-Sterling, A. (1993). The Five Sexes. *The Sciences*, 33(2), 20-24.
- Foucault, M. (1978). *The History of Sexuality*. New York: Pantheon Books.
- Hacking, I. (1986). Making Up People In T. Heller (Ed.), *Reconstructing Individualism: Autonomy, Individuality, and the Self in Western Thought*. Stanford, CA: Stanford University Press.
- Hamer, D., Hu, S., Magnuson, V., Hu, N., & Pattatucci, A. (1993). A linkage between DNA markers on the X chromosome and male sexual orientation. *Science*, 261(5119), 321-327.
- Lehr, J. (2007). Beyond Nature: Critically Engaging Science to Queer Straight Teachers In N. Rodriguez & W. Pinar (Eds.), *Queering Straight Teachers: Discourse & Identity in Education*. New York: Peter Lang International Academic.
- Lehr, J. (2015, September 24). *The Status of Women and People of Color in Science and Engineering*. Lecture



- presented at California Polytechnic State University, San Luis Obispo.
- Lorber, J. (1994). *Paradoxes of Gender* (pp. 13-36). New Haven: Yale University Press.
- Kallmann, F. J. (1952). Comparative Twin Study On The Genetic Aspects Of Male Homosexuality. *The Journal of Nervous and Mental Disease*, 115(1), 283-298.
- Kessler, S. J. (1990). The Medical Construction of Gender: Case Management of Intersexed Infants. *Signs: Journal of Women in Culture and Society*, 16(1), 3-26.
- Mcintosh, M. (1968). The Homosexual Role. *Social Problems*, 16(2), 182-192.
- Moore, D. S. (2015). *The Developing Genome: An Introduction to Behavioral Epigenetics* (pp. 18-23). Oxford University Press.
- Rice, W. R., Friberg, U., & Gavrilets, S. (2012). Homosexuality as a Consequence of Epigenetically Canalized Sexual Development. *The Quarterly Review of Biology*, 87(4), 343-368.
- Sanders, A. R., Martin, E. R., Beecham, G. W., Guo, S., Dawood, K., Rieger, G., . . . Bailey, J. M. (2014). Genome-wide scan demonstrates significant linkage for male sexual orientation. *Psychological Medicine*, 45(07), 1379-1388.
- Sofoulis, Z. (2009). Social Construction for the Twenty-first Century: A Co-Evolutionary Makeover. *Australian Humanities Review*, (46).
- Stein, E. (1992). *Forms of desire: Sexual Orientation and the Social Constructionist Controversy*. New York: Routledge.
- Tiefer, L. (1987). Social Constructionism and the Study of Human Sexuality. *Personality and Social Psychology Review*, 7, 77-94.
- Vance, C. (1989). Social Construction Theory: Problems in the History of Sexuality in D. Altman (Ed.), *Homosexuality, which homosexuality?* (13-34). Amsterdam: An Dekker/Schorer.