Is Human Sexuality and Gender Identity Fluid?

Human sexuality and gender is a topic that, until recently, hadn't had much study devoted to it from a psychological or neuroscientific lens. Theologians have debated the morality of homosexuality and non-cisgendered identities for a long while, but only until the 20th century was the subject even broached in scientific contexts. Therefore, my guiding question was, "To what extent are human sexuality and gender fluid?" Many conflicting views exist on this topic exist, and thus multiple factors must be taken into consideration.,

According to the National Study of Sexual Health and Behavior, a study perpetuated every year by the University of Indiana, nearly 10% of the population of the United States identifies as LGBTQI+. However, the actual number is purported to be higher, by a margin 5% at maximum (Reese). The study of sexuality was first given mainstream scientific study by Alfred Kinsey. Kinsey was a researcher who pioneered what became known as the Kinsey Sexuality Rating Scale in 1948. The scale measures a subject's sexuality with ratings ranging between 0, for exclusively heterosexual, and 6, for exclusively homosexual (Kinsey Institute). This was an important first step for the study of human sexuality, but it was not until 1973, when Fritz Klein began studying bisexuality with the Klein square, a system of measuring sexuality that had 27 options and was non-binary, that what is considered the modern study of human sexuality began. Definitions of terms used must also be explained, to prevent any confusion later on. For the purposes of this paper and this research, fluid was defined as possessing the capacity for permanent change. Sexuality was defined as an individual's sexual orientation or preference by GLSEN, the Gay Lesbian Straight Education Network, in their annual school climate survey,

while gender identity was defined as self-identification with a gender and its role in society (Palmer).

Two main debates exist within the study of human gender and sexuality: where it comes from, and how it exists. Some argue that sexuality and gender are fluid, and capable of long-term permanent change, while others argue that sexuality and gender are essentially set in stone, and incapable of any change. Likewise, some argue that deviant sexuality and gender are caused by genetic factors, and are innate, while others argue that sexuality and gender are a matter of the environment in which you exist, and are largely affected by external factors. In essence, this argument is nature versus nurture, and unlike the first, has been definitely answered. In J. Michael Boswick's case study of individuals who were born intersex, and assigned a sex at birth that did not match gender identity later in life, the theory that sexuality and gender were determined in utero was given its first serious scientific proof. However, the matter can be considered settled, thanks to Dick F. Swaab's body of research on gender and sexuality examined from a purely biological and neurological perspective. Swaab, a researcher at the Netherlands Institute of Brain Research, one of the most advanced neurological study facilities in Europe, is considered one of the most eminent authorities on the neurological divergence of LGBTQI+ individuals. In his most recent article cited, published in 2004, Swaab presents conclusive evidence that human gender and sexuality are determined in the womb, as evinced by hormone levels left in the womb and divergent structures in the hypothalamus. Therefore, that question can be definitely answered: human sexuality and gender are a product of nature, not nurture, and are genetic in nature.

However, the question of fluidity is far more complex, and the first factor to examine is the structure of the brain. However, before anything else, it first must be established that the human brain is capable of long term change, to avoid begging the question. Christopher Bergland's article, provided in the stimulus packet, on the effects of dancing on the development of ballerinas' brains, and Dan Hurley's article that postulates the theory that fluid intelligence, the capacity to solve problems and apply complex reasoning, can be improved through training, also provided, both prove that the human brain can change drastically over time. Therefore, there is a basis for the idea that gender and sexuality can change.

The physical structure of the brain is an important thing to examine here, and Swaab's body of research is a good place to start. In Swaab's 1995 article, entitled "Sexual Differentiation of the Human Hypothalamus in Relation to Gender and Sexual Orientation", he examined the physical structure of the brain, and the implications of certain divergent structures. Here, he postulated that structures in the human hypothalamus and adjacent areas were responsible for controlling gender and sexuality. It had been already established that the hypothalamus controlled certain actions specific to physical sex, such as triggering the onset of puberty and the monthly resurgence of menarche. However, his research conclusively proved that the structures that dictate sexual orientation and gender identity are located within. He then expanded upon this research in his 1997 article, in which he identified the specific structures which were divergent between homosexual, heterosexual, and other sexualities in individuals of the same sex and gender identity, as well as structures pertaining to gender within the brains of those who identify as the same gender, but possess different biological sexes. Finally, one last piece of evidence comes from Teresa Bernardez and her body of work. Within her studies of psychoanalysis of

abuse victims, she came across three rules for the changing of sexuality and gender. Gender and sexuality may only change in cases of physical trauma to the brain, severe and constant emotional trauma or abuse, and severe illness, whether mental or physical. With the data collected here, it would strongly suggest that gender and sexuality are immutable; however, the brain isn't nearly as simple as that would suggest.

Although the discussion of specific divergent structures is all well and good, the application of the structure of the brain, also known as psychology, provides complexity to this problem. Some elements of gender identity and sexual orientation are still very uncertain when viewed through a purely neurological lens. For example, why do some people identify as gender fluid, and shift among a multiplicity of identities? What can be made of the anecdotal evidence of sexuality adjusting during incarceration, only to revert when freed? Although gay curing camps have recently been harshly criticized for a failure to present any sort of conclusive results, some people still claim that they were cured. Are they just lying or in denial, or is something else going on? And why are more people not only identifying as LGBTQI+ in anonymous surveys (Reese), but the demographics within the community shifting as well, with fewer individuals identifying as gay or lesbian or bisexual, and many more identifying as pansexual, polysexual, demisexual, or asexual (Charbonneau)? The answer lies within psychological concepts that have only recently begun to be given deep study: sexual variance, erotic plasticity, and gender plasticity.

To begin, the concept of sexual variance was initially described by Fritz Klein in his work centering largely on bisexuality, *The Bisexual Option*, as a possible explanation for varying sexuality. Sexual variance is defined as the amount that an individual's sexual orientation shifts

away from its baseline under a situation of duress or repression. In essence, the principle of sexual variance only comes into play when an individual's sexuality is repressed or shut away in some fashion; for instance, a teenager in a conservative religious household. Sexual variance is a variable that is different for everyone, explaining why, for instance, some males in prison enter relationships sexual and physical with other male inmates, yet still identify as straight, while others abstain from same-sex relations. Erotic plasticity and gender plasticity are also related, and quite similar, but differ in an important way. Erotic plasticity and gender plasticity are defined as the amount that one's self perception of personal gender identity and sexual orientation are affected by societal norms, ideologies, and customs (Baumeister). For instance, in classical Greek and Roman societies, it is widely considered that same-sex attractions were a societal norm, and were committed by nearly all. The concept of erotic plasticity would explain this fact by stating that, essentially, the fact that same-sex relationships were so widely perpetuated and expected led to higher rates of individuals self-identifying as bisexual or pansexual. This also explains why so many more LGBTQI+ individuals, especially youth, are identifying in exotic ways like genderqueer, agender, or bigender. In essence, the fact that these concepts and words are becoming widespread is allowing more people to self-identify as such. The key difference here is that erotic plasticity and gender plasticity are the results of societal influences, while sexual variance is largely personal.

In conclusion, the answer to the earlier posed question,"To what extent are human sexuality and gender fluid?", is complex. Human gender and sexuality are constant throughout one's life. One cannot lose aspects of their identity, only grow into new aspects of it. Sexuality and gender can be changed in the short run by duress, but is largely immutable in the long run,

unless actual damage to cognition is caused. The simplest conclusion is this: is human gender and sexuality fluid? Only temporarily, or in an outwards direction.

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