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SEX IS NOT NON-BINARY (OR MUTABLE), AND NEITHER IS SEXUAL IDENTITY OR ORIENTATION

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ABSTRACT

Sex is defined functionally, in terms of gamete production, which is strictly binary and immutable. Traits thought sex-derived (or related), in being at some remove may not be sex-specific, utilising systems common across sex; however, apparently sex-overlapping traits serve to reinforce, not compromise sex binarity. Sexual identification and orientation might be expected to show degrees of sex non-separation, but seemingly through their very closeness in derivation from sex are themselves binary and immutable. Sexual orientation is of discrete (one majority and one minority aberrant) form; with bisexuality merely ostensible: male hypersexuality and female non-sexual tension reduction. Notions of sexual identity are chimeric: sex dysphoria is mostly latent homosexuality; the remainder intensified sexual self-orientation or psychopathology-driven social contagion of a condition imaginarily possessed.

Keywords: sex, (non-)binary, immutable, orientation, identity.



SEX PER SE IS BINARY, INCLUDING IN RARE DEVELOPMENTAL ABERRATION

That sex is strictly binary and immutable is long established, and applies just as strongly in the human case (e.g., most recently, Griffiths, 2020; Elliott, 2020; with Marinov, 2020, particularly stressing its immutability). Sex is defined functionally, in terms of gametes (sex cells), with individuals producing the small, motile gametes denoted male; those who produce the large, immotile gametes, female. These authors reaffirm this binarity and immutability, and that no individuals produce both types of gametes, in any proportion. Even when the inception or pre-embryonic development of sexed individuals goes awry, this holds nevertheless. Any of the extremely rare pre-natal aberrations giving rise to a variety of intersex conditions still entails an individual coming to possess only one type of potentially gamete-producing organ -- either ovaries or testes: *potential* being the operative word, as most intersex individuals are anyway sterile (infertile).

All intersex conditions ... arise from single-gene mutations or chromosomal aberrations on a genetic background that would have indisputably been producing male or female gametes had these mutations not occurred. ... True hermaphrodites possessing both sets of functional gonads and genitalia have never been observed in Homo sapiens. Therefore the “intersex” argument against the sex binary is simply not valid. Intersex individuals exist only because of continuous de novo reintroduction of the relevant mutations in the population, recessive genes becoming unmasked, or disruptions of normal embryonic development. (Marinov, 2020)

Marinov may not be completely accurate regarding hermaphroditism, in that this could exist in a tiny subset of cases of a vanishingly rare *intersex* condition, ovotestis, where there are *both* ovaries and testes, *and* individuals may be fertile, though nearly always only the ovaries actually produce gametes. In less than a handful of recorded cases instead there is spermatogenesis. The development of male or female reproductive system is mutually antagonistic, so that the male pathway being initiated then inhibits the female, or vice-versa, though as with all systems this is ultimately vulnerable to malfunction. One or two cases have been reported where both ovaries and testes appear to produce gametes, which might allow the possibility of self-fertilisation, though no such pregnancy has ever been reported in humans (Bayraktar, 2017).



In any case, such a freak event would not compromise the binarity of sex. It hardly would *disprove the rule*, as it were, as a highly rare exception indeed *proves the rule* here. Minuscule prevalence of an exception would attest to an extraordinary stability of sex in its resilience to the inevitable great array of possible malfunction occurring in the complexity of pre-natal development. All manifestation of sex entails to varying degree mechanism that is but derivative of sex, and, as with all mechanism, is liable to occasional malfunction. Even in that underpinning the creation of sexed individuals -- the sex chromosome system and the supporting cellular mechanisms -- there is the very faint possibility of generating male *cum* female. Whether male or female is *absolutely* invariable, or invariable to the extent that exceptions are so rare as to be practically invisible; either way, sex remains binary.

SEX BINARITY HOLDS AND STRENGTHENS IN WHAT IS SEX-DERIVED

Moving beyond aberration in immediately sex-derived mechanism of pre-natal development, there are all sorts of traits that are either sex-specific or sex-dimorphic that may either fully or partly distinguish the sexes. All is built upon sex in the sense that sex is the focus directly or indirectly of all adaptation, given sex is foundational to biological system (and social system, this being very much *part* of biology) in addressing the inherent most fundamental problem of gene replication error, that otherwise would accumulate across generations, leading to infertility and extinction. Sexual reproduction and the sexes evolved not to produce variation but to effect purging (elimination of deleterious genetic material) through male competition for rank according to genetic quality and corresponding female mate choice. [For reviews, see Moxon, 2016, 2012.]

Even so, at progressively further remove from sex *per se* it would be expected that mechanism is recruited that is not necessarily and likely not sex-specific. It doesn't need to be so in itself if it can be recruited for sex-specific utility. Many traits are of this ilk given evolutionary development is as economical as possible, depending as it does on the strength of selection pressure. Sex-neutral new or co-opted (*exapted*, to use the evolutionary biology term) already-evolved adaptations can evolve to be applied to both sexes (if differently in mode and function), as these require less selection pressure than would originating new sex-specific traits. That is, there may be selection pressure sufficient to lead to the evolution of new traits amorphous as to



sex rather than ones that are sex-specific, as the latter would entail more complex mechanism. Thus arise traits where the distinction between the sexes is progressively weaker the more distant is their derivation from sex.

The sum total of traits with their varying degrees of sex-separation produce an apparent overlap of the sexes, which sometimes is falsely considered a male-female continuum, as a spurious basis of refuting the binary nature of sex. This is neatly dismissed by Elliot (2020):

[To] aggregate all these traits together and put them on a bimodal distribution, with two big peaks we call male and female ... is not how sex differences work. The two big peaks are not male and female. Rather, the two big peaks represent the average of a given trait for males and average of a given trait for females. The correct bimodal graph shows a separate bell curve for males, and a separate curve for females. ... male and female are not averages of anatomy and physiology, but rather, describe the two evolved reproductive anatomies (Hilton & Wright, 2020). ... A bimodal distribution for males and females means that there is variation within males and variation within females. A short male does not suddenly become a female, and a female with a lot of testosterone does not suddenly become a male. Thus, variation does not equal sex (Schmitt, 2017). ... The only reason we have a bimodal distribution for males and females in the first place is because sex is binary.

In any case, the binary and immutable nature of sex is not refuted, because the complete functional distinction of gamete production remains unaffected. Moreover, the functional divide of sex becomes *further elaborated and entrenched*, given that the evolution of subsequent adaptation to build on what already has evolved *cannot but function to fine-tune and reinforce the very original set of adaptations that gave rise to it*. Otherwise there would be no basis of the evolution. There is no going off at some novel tangent that does not better serve from whence it sprang, and this applies just as much to culture, so there is no possibility that sex binarity will ever be undermined. [See Moxon, 2010, for a fuller outline.]

SEXUAL ORIENTATION IS ALSO BINARY AND IMMUTABLE

Fairly immediately derived from sex is sexual orientation, though to the extent that it is but derivative, it might be expected to be non-binary (and not immutable), or at least significantly less than perfectly so. If instead this turns out not to be the case, then sex would be revealed to be even more strictly binary (and immutable) than has been supposed.



First, it's necessary to establish aetiology. Homosexuality is regarded both by investigators and homosexuals themselves as not a matter of choice or environmental causation but as being inborn. Swaab, Wolff & Bao (2021) state: "There is no evidence that one's post-natal social environment plays a crucial role in the development of gender identity or sexual orientation". Bailey et al. (2016) conclude: "There is considerably more evidence supporting non-social causes of sexual orientation than social causes. This evidence includes the cross-culturally robust finding that adult homosexuality is strongly related to childhood gender non-conformity". [Note that by orientation is (nowadays) meant attraction rather than behaviour, as the latter could be merely situational (as, for example, in the case of heterosexual males in prison environments engaging in homosexual acts).] In keeping with still no tenable hypothesis for even a frequency-dependent adaptive value of homosexuality, only a relatively minor genetic contribution is revealed in family and twin studies, with no candidate genes identified (Roselli, 2018). We are left with aberration in foetal development. One or a number of potential malfunctions would have a statistical probability of occurrence, providing a steady very low prevalence.

Long suspected in the case of male homosexuality has been a birth order effect (having a number of older brothers), thought to be a result of the impact on the foetus of a maternal immune response to a Y-chromosome protein. However, a meta-analysis of studies reveals this would apply in the case of only a minority proportion of *gays* (Rao & Andrade, 2019), which other research shows are those who prefer a receptive anal position, dubbed *bottoms* (Wampold, 2018; Swift-Gallant, Coome, Monks & VanderLaan, 2018). So this concerns erotic roles within male homosexuality, not sexual orientation.

The other longstanding hypothesis is abnormal pre-natal testosterone level, but evidence has been at best mixed, and Breedlove (2017) concludes that there is no evidence of this for males; only in respect of females -- that testosterone levels, compared to heterosexuals, are not lower in gays, though they are higher in lesbians. Commenting on Breedlove, it's argued by Skorska & Bogaert (2017) that there likely is a role for pre-natal androgens in male homosexuality but that it is complex, and Pasterski (2017) speculates that it may be due to disruption of *peri*-natal testosterone, which Swift-Gallant, Shirazi, Puts & Breedlove (2021) posit is responsible for the sub-group of male homosexuals dubbed 'tops', who prefer an insertive anal position. [They also



suggest peri-natal *ovarian* steroids augment female heterosexuality, with disruption of these precipitating lesbianism.] With all the data merely correlational, then in any case androgens may not be causal but merely part of a cascade producing the end effect; that is, merely proximally causative.

The aetiology -- the distal causation -- instead is clearly epigenetic, the (normally) non-heritable modification of gene expression. A foetal developmental aberration of epi-marks that normally protect the developing foetus from natural considerable variation in testosterone levels (buffering the XX foetus from masculinisation by excessive androgen exposure, and XY foetuses from feminisation by insufficient androgen exposure). If, unusually, these are not erased and instead carry over across a generation, then opposite-sex offspring have an homosexual orientation (Rice, Friberg & Gavrilets, 2012; Gavrilets, Friberg & Rice, 2018). This aetiology appears to apply to females as well as to males (Ngun & Vilain, 2014). The epigenetic markers can be detected and are predictive of sexual orientation (Ngun et al., 2015). Mathematical modelling in the studies shows small-minority homosexual orientation does not undermine the adaptive value of the epi-marks, and likewise the genes underpinning them. These easily spread in the population given that they always increase parental fitness and only reduce offspring fitness in the unusual instances of non-erasure. They are adaptive: there is no evolutionary puzzle. It's an inadvertent occasional biological *switch* whereby in a very small minority is initiated a same-sex sexual orientation, leaving the great majority unaffected. Consequently, sexual orientation is not a continuum whereby an individual is mostly homosexual and subsidiarily heterosexual or vice-versa. It is not bipolar.

The notion of a hetero-to-homosexual continuum, as imagined in the Kinsey Scale of a trade-off to varying degree between hetero- and homosexuality, is undermined by analysis showing that the Kinsey Scale is not a measure of a single construct, but instead that opposite-sex and same-sex orientation are orthogonal (Zietsch & Sidari, 2020); that is, entirely independent of each other. That there is no continuum is the implication, Ganna et al. (2019) conclude, of the absence of any genetic basis; as shown by that underpinning why *ever* versus *never* engaging in homosexual behavior is not the same as what underpins the proportion of an individual's sexual behaviour that is homosexual. The seeming complexity of sexual orientation has prompted some



to argue it is not simply a matter of genital arousal (Zivony, 2020; Feinstein & Galupo, 2020), but this is the proxy for if not the definition of sexual orientation, so anything escaping this measure hardly can be considered sexual orientation. Diamond (2021) interprets Ganna et al.'s findings as an orthogonal distinction between sexual orientation per se and some other factor. In other words, individuals who seem in the main heterosexual (or homosexual) but not exclusively so, actually *do* have a binary sexual orientation, notwithstanding behaviour that at times may suggest otherwise. Whatever this other factor may be, it is not sexual *fluidity*, Diamond points out, which is a capacity for variation in sexual expression, and not evident in Ganna's data. The notion of *fluidity* comprises variation of very different forms, whereas Ganna's data shows specifically greater openness to unfamiliar, even taboo experiences, and (perhaps or) greater risk tolerance. This would reflect *hypersexuality*, that neuroscientific findings by Li, Fernández-Guasti, Xu & Swaab (2021) indicate is misinterpreted as *fluidity*.

OSTENSIBLE BISEXUALITY IS NOT A SEXUAL ORIENTATION

With sexual orientation being binary, and minority aberration in foetal development creating homosexuality, there is further scope for developmental malfunction to create apparent bisexuality; that is, ostensible though not actual bisexuality. There may be several kinds of malfunctions, which would account for the classification by Savin-Williams (2021) of four types of bisexuality: primary, closet, transitional or situational; with the attraction to both sexes in the case of the primary sub-group being "to varying degrees".

Given the either-or basis of epigenetic pre-setting of sexual orientation, it's unlikely that there is a potential fault whereby sexual orientation can be set to be *both* hetero- and homosexual. A more likely potential fault is simple failure to set a sexual orientation, so that by default there would be no distinguishing between the sexes as targets of sexual interest; instead an indiscriminate sexual interest to encompass both the opposite and the same sex, with perhaps a generally lower level of sexual interest irrespective of target. Much the more likely basis of ostensible bisexuality is, however, the impact of non-sex-derived (or more distally-sex-derived) traits tending to obscure the clarity of sexual orientation, rendering it ostensibly *fluid*.



As regards males, there has been much doubt that bisexuality exists, but Jabbour et al. (2020) in a meta-analysis of several studies conclude, contrary to much previous research, that bisexual males are indeed sexually aroused by both sexes, though in varying proportion, *not equally*. The qualification is illuminating, as true bisexuality would mean just as much attraction to one sex as to the other. Also enlightening is that almost a third of subjects had to be excluded by Jabbour et al. through “insufficient genital arousal for meaningful analysis”. This may indicate two distinct populations of bisexuals. It’s also what Stief, Rieger & Savin-Williams (2014) conclude, with one population, recruited using stringent selection criteria, found (as similarly by Rosenthal, Sylva, Safron & Bailey, 2011) indeed to exhibit sexual arousal to both males and females; whereas the other population, which would be included in sampling by much more relaxed selection criteria (as also by Rieger, Bailey & Chivers, 2005), has sexual arousal patterns indistinguishable from those of either heterosexuals or homosexuals. The latter individuals are really either homosexual or heterosexual, and not actually bisexual (though some may be in effect asexual). The population that instead is sexually arousable by both sexes, Stief, Rieger & Savin-Williams reveal to possess elevated levels of sexual sensation-seeking and sexual curiosity, so are “proceptivity-driven”; *hypersexual*, as it were, not sexually *fluid*. There is no variability in sexual orientation, therefore. It’s binary. Instead there is simply greater sexual motivation and consequent expression. In line with this, Lippa (2020) finds that “higher sex drive, sociosexuality, and neuroticism and lower conscientiousness distinguished bisexual men from other groups”. Bisexuals also have more pronounced *dark triad* traits: psychopathy and narcissism, according to Jonason & Luoto (2021).

Male bisexuality is here revealed to be not a sexual orientation per se but the result of what are personality factors raising the intensity of sexual interest to the point it overrides the usual restriction to targeting one sex. In some circumstances the range of sexual targets can widen to encompass both sexes, notwithstanding that sexual orientation per se is unchanged. Apparent sexual *fluidity* is thus explained. Note, as aforesaid, that there isn’t *equal* attraction to both men and women, but that these men are more aroused by other men than are heterosexual men, and more aroused by women than are homosexual men, so that compared to men of either sexual orientation they are more equally attracted to both sexes. This is what would be expected if these ostensible bisexuals actually have an underlying either heterosexual or homosexual orientation,



but through being unusually ‘proceptivity-driven’ (*hypersexual*) their sexuality *spills over*, partly overcoming the usual discrimination between appropriate and inappropriate sexual targets.

In respect of the above-mentioned possibility of a malfunction to produce no sexual preference for either sex -- no sexual orientation at all -- there may also be a population of male ostensible bisexuals who reflect this, identified by implicit association testing (Snowden, Fitton, McKinnon & Gray, 2020). This species of bisexuality also would be ostensible rather than real.

Overall, then, male bisexuality, in however it manifests, appears not to be a sexual orientation per se, so is no challenge to the binary (and immutable) nature of sex, even though issues of sexual orientation are but *sex-derived* -- at some remove from sex itself.

SPECIFICALLY FEMALE OSTENSIBLE BISEXUALITY IS NON-SEXUAL

Turning to female (apparent) bisexuality, it is well recognised that whereas for males homosexuality is much more prevalent than (apparent) bisexuality, for females it is the inverse. That is, “women are more likely to report as bisexual than an exclusively same-sex orientation; men show the opposite pattern” (Bailey et al., 2016). Indeed, in women, “bisexual behavior is an order of magnitude more common than exclusive homosexuality” (Luoto & Rantala, 2020). According to Diamond (2021), “Instead of describing women as ‘more bisexual’, it is actually more informative to describe women as ‘less exclusively same-gender attracted’”. It appears to be a much looser phenomenon. So it is that Stief, Rieger & Savin-Williams (2014) find that bisexuality in women is not just through elevated levels of sexual sensation-seeking and sexual curiosity, as it is for men, but also, unlike for men, because of elevated levels of sexual excitability. *Hypersexuality* and not *fluidity*, again. Luoto & Rantala similarly find that bisexual women have “more male-typical personality traits, more unrestricted sociosexual attitudes and behavior, and higher sexual responsiveness”.

There is something more profound afoot, however. According to Baldwin et al. (2016), “bisexual women say that their attraction to other women is mainly emotional and their attachment to men more sexual”. This completely undermines the notion of female bisexuality. Bailey et al. (2016) additionally point out that “women appear more likely than men to experience same-sex attraction in the context of close affectionate relationships”. Few would dispute that



female intra-sexual affiliation -- women's same-sex friendship -- is notably very close and physical, such that distinguishing between the platonic and not entirely platonic is not easy. It is quite clear that (apparent) bisexuality in women is even more a misnomer than it is in men. Furthermore, this appears to apply to female sexual orientation more generally, not just to ostensibly bisexual women. It has long been well established that whereas men's sexual orientation is clearly indicated by their sexual arousal to erotic stimuli, this is not the case for women, who show physiological sexual arousal to both sexes, irrespective of sexual orientation (e.g., Holmes et al., 2021).

There would seem to be an explanation (at least in part) for generally weak female sexual orientation in women's sexuality being predominantly non-relational, in *erotic self-focus* (e.g., Fertel, 2015), which is ubiquitous for women, far greater than it is for men, and with large effect sizes. This is the internalisation of oneself as the object of desire: a woman is in substantial part her own erotic subject, as she focuses on her own desirability without consideration for the experience or even the attributes of the partner (Symons, 1990; Zurbriggen & Yost, 2004; Bogaert, Visser & Pozzebon, 2015; Lehmler, 2018). With such deep narcissism and irrelevance of partner, then it should not be too surprising that indifference as to partner might to a degree extend even to the partner's sex.

Chivers (2017) explores the complexity of female sexual orientation, presenting and discussing several hypotheses, but finds no basis of choosing between them. Diamond (2021) cuts through the impasse in concluding that heterosexual women's genital arousal pattern is uniquely *fluid*. However, this is unlikely to reflect *hypersexuality* and a positive widening of sexual orientation, but instead mere relative laxity (compared to the case for males) through sexual orientation not being imperative as it is for the male. After all, compared to males there is less of an evolutionary biological imperative for females to be canalised in sexual behaviour and cognition specifically regarding the opposite-sex, considering it is the male who is the agentic sex, seeking out the female (the limiting factor in reproduction) and being the penetrative party. As the party receptive to sexual penetration and in general the one actively sought after rather than seeking, the female need be no more than passive, then allowing selective sexual access to her from a range of suitors. However, there is scope for a positive basis to such laxity: a factor atop binary sexual orientation.



This is plasticity in the nature of female same-sex friendship, that Kanazawa (2017) proposes is adaptive in diffusing the strong tension and conflict between co-wives in polygynous pair-bonding. The severity of this tension and conflict is very well-attested (e.g., Essien, 2018; Jankowiak, Sudakov & Wilreker, 2005), characterised by Madhavan (2002) in the paper's title, *Best of friends and worst of enemies: competition and collaboration in polygyny*. More fundamentally, there is a cross-species major problem in social groups of female intra-sexual conflict, that cannot be addressed by group fission, given the need for increased group size in the face of predation risk. It's long been known that low level agonistic interactions between female gorillas increase dramatically in frequency with the number of females, and *not* with group size (males and females both) per se (Watts, 1985); likewise in the case of baboons (Hill, Lycett & Dunbar, 2000), causing elevated stress levels. The stress caused by female coalitions attacking other females results in reproductive suppression -- more cycles before conception and longer inter-birth intervals (Wasser & Starling, 1988). Lone males interpolated between small sub-groups of females in order to reduce female-female fractiousness is the basis of the social pattern in the gorilla, according to Dunbar (2020): "Conflicts between neighbouring *harems* are usually initiated by one, occasionally two, females; if the conflict escalates, more females will become involved, until eventually the *harem* males are drawn into the dispute and force the separation of the two groups of females (Dunbar 1983b, 2018)". Indeed, this is thought to be the basis of the harem in the first place, and pair-bonding in many species (Gowaty, 1996). Given this female fractiousness being such a fundamental problem, and requiring solutions that are foundational to social structure, then it surely must have been adaptive for females to have evolved modes of same-sex amelioration of tension that co-opted intimacy-promoting features of their sexual repertoire to bolster non-sexual affiliation. As is the case generally with co-option in evolution, mechanism is re-dedicated to a different function: the original function is not retained in the co-option. For example, aspects of male dominance display in courtship clearly is in no way itself dominance behaviour (towards the female being courted). It's symbolic of male mate value, which is rank (dominance relative to other males). Drawing on aspects of the sexual repertoire for an adaptation concerning friendship is not some weak form of bisexuality.



SEXUAL IDENTITY VARIATION IS CHIMERIC, WITH CHILDHOOD-ONSET SEX DYSPHORIA BEING LATENT HOMOSEXUALITY

Sexual orientation of course does not entail any issue about which sex the individual considers him/herself to be. The question of sexual identification arises, supposedly, with the notion of *trans-sexuality*, that an individual can be in the process of or may actually achieve change from one sex to the other. [The term has generally changed to *trans-gender*, which is to obfuscate when what is meant is a biological sex change, and *gender* anyway is a confusing, ideologically-derived term that should not have a place in science.] *Trans* is a misnomer, as there is no transition towards anything. Any wish or effort is to *maintain* sexual identification, and any desired change to the body, ostensibly to try to match it to the sexual identification, is impossible, as no individual can ever change the type of gametes he/she produces, so no individual can be *in the process of* such a change. Any so-called *sex change* can be nothing more than very superficial. Not only does a *sex-change* operation not lead to gamete production, but the crude remodelling of genitalia cannot render them functional, notably in respect of orgasm. No sex-specific physiology of any kind is changed: for example, stress response mechanism, which is almost entirely sex-dichotomous. [For a review, see Moxon, 2015.] As is now popularly appreciated from the controversy in sports over those dubbed *male-to-female trans-sexuals*, foetal sex hormones lay down gross body changes that no post-natal administering of opposite-sex sex hormones can reverse.

Underpinning the misnomer of *trans-sexuality* is the medically acknowledged condition of *gender dysphoria*, that was almost unheard of, and in surveys vanishingly rare prior to its recent politicisation. Nevertheless, that at least a minuscule minority experience some sort of significant discomfort is a real phenomenon that should not be dismissed. [Note, again, that with *gender* a confusing, ideologically-derived term, henceforth I will substitute *sex dysphoria*.] However, it too a misnomer, to the extent of there being no evidence of the notion of a *female brain* within an otherwise male body, or vice-versa. Indeed, it's contradicted by findings of no anticipated anomalies in the very parts of the brain that exhibit sex dimorphism (Savic & Arver, 2011). It's theoretically possible for rare *sex dysphoria* to result from an aberration in one of the surges of organising hormones at different points during foetal development (as suggested by Holmes et al, 2021). Given that an early testosterone surge governs the development of genitalia and only later,



after aromatisation to estradiol, does testosterone masculinise the brain (e.g., Panksepp, 1988), then if something goes awry in one of these, it may be possible that some sort of disjunction occurs that is experienced or is interpreted as *sex dysphoria*. Yet as there is no evidence of such a phenomenon, the notion of a female brain in a male body is a caricature of *sex dysphoria*: a widespread (mis-)apprehension that is understandable in arising as a simple and not too implausible way to describe *sex dysphoria*, to try to establish it as a profound and immutable phenomenon akin to homosexuality.

A more likely aetiology and characterisation is a compounding by other mental disorders of a simple, weak conceptualisation of *sex dysphoria* as the disconcerting body and brain changes of puberty quite rapidly turning the child into a sexually mature adult, that might be misconstrued as an instability in sexual identity. As Evans (2021) points out: “The experience of being dislocated from one's body, which is changing rapidly in many ways, is not uncommon in adolescence.” While adolescent bodily changes are unlikely to be problematic for the vast majority, it would be anticipated for a small minority at the extreme of normal distribution this is not so, and that very rarely this presents as a clinical psychological condition, especially or perhaps necessarily if in conjunction with one or more other mental disorders, notably autism, which is a well-known major co-morbidity of *sex dysphoria* (Kallitsounaki, Williams & Lind, 2021; Dutton & Madison, 2021).

An account at length of this topic is the book by the sexologist, Debra Soh: *The End of Gender: Debunking the Myths About Sex and Identity in our Society*. Soh's outline is in terms of typology by seasoned sexologists Blanchard (Blanchard, 2005) and Bailey & Blanchard (2017), as endorsed by others. As this is the only scientific account available, and there has been no cogent scientific challenge to their position (only non-cogent, ideologically driven critique), then this typology is the scientific position, and what is briefly summarised in what follows.

There is a typological distinction between early- and late-onset *sex dysphoria*. The former, in both sexes, arises in childhood, long before puberty, with individuals exhibiting *gender non-conforming* -- opposite-sex-typical -- behaviour from a very early age, and exhibiting an exclusively homosexual orientation already by puberty. It's latent homosexuality. Thus, the male version of this early-onset form is known as *androphilic sex dysphoria*, or simply the *gay* sub-type.



This explains why “the vast majority of children who voice the desire to be the opposite sex will eventually change their minds, growing up to be *gay* and comfortable in the body they were given” (Soh, 2020, p164). Singh (2021) concurs. Four decades of research is summed up by Soh: “across all eleven long-term studies ever done of gender dysphoric children, between 60% and 90% desist by puberty (Davenport 1986; Drummon, Bailey, Bedali-Peterson & Zucker, 2008; Green 1987; Kosky 1987, Lebovitz 1972; Money & Russo 1979; Singh 2012; Steensma, McGuire, Kreukels, Beckman, Cohen-Ketennis 2013; Wallien & Cohen-Ketennis 2008; Zuger 1978; & Zuger 1984). ... Regardless of whether you look at older or newer studies, no matter how large or small the sample size, or where in the world and which research team conducted it, the data are irrefutable” (p141) ... “... even when you remove kids who are less severe from the study analysis, the rate of desistance is still over 80 percent” (p144) ... “Even after removing the number of children lost to study attrition from analysis, the desistance rate was still more than 50 percent” (p146). And these statistics don’t include those who desisted after puberty. With these cases added, the total amounts to the “vast majority”, Soh claims.

OSTENSIBLE SEXUAL IDENTITY INVERSION IS SEXUAL *SELF*-ORIENTATION

The late-onset form (not arising until puberty at the very earliest) is also not what it may seem, being a sexual *self*-orientation: that is, it’s inwardly directed. *Erotic-target identity inversion*, as it is labelled by Hsu & Bailey (2021) and Brown, Barker & Rahman (2020), is not an actual changed identification or orientation, but a narcissistic intensification combining existing sexual identification and orientation. In males this is an heterosexual fantasy of being oneself female; that is, imagining oneself as the object of one’s own sexual desire, but remaining heterosexual. This is termed *autogynephilic sex dysphoria*, which typology by Blanchard and Bailey is endorsed by other researchers, notably Lawrence (2017), who pointedly rejects what are minor or non-cogent critiques by Serano (2010) and Moser (2010b).

Presumably, adding an extra dimension to a male sense of knowing and being *inside* the female further eroticises the male sexual role; the male thereby achieves a fuller male sexual expression and experience. What has been missed (or at least not spelt out) is an interesting paradox here, in that although the male fantasises about being the female object of his desire, he cannot actually *become* the female, as it’s a fantasy *from the vantage of the male*, in whom, of



course, is vested all the eroticism here. Consequently, albeit the male indeed wants to become the female *in the fantasy*, he hardly can want *actually* to become female. To do so would remove the very basis of the fantasy, and hardly would create any satisfaction. The reality is revealed in what Bailey & Blanchard (2017) say about the female equivalent of this type of *sex dysphoria* (see below), that “becoming ... appears to be the primary goal or very close to it”. *Very close* -- In other words *not quite* -- is the operative aspect of the phenomenon here. It seems, then, that *autogynephilic sex dysphoria* is an elaboration on top of male identity & male heterosexual orientation, and not some change in either. Any feeling that an actual sex change is required would be a case of ideation running away with itself, as it were, through the recruitment of various cognitive resources in the considerable effort of upholding the fantasy, in the likely service of unmet psychological needs evident in co-occurring mental illness.

The corresponding (though possibly subtly different) female form is *autohomoerotic sex dysphoria*, which is an heterosexual fantasy of engaging in male homosexual sexual activity. Specifically this would be receiving penetration from a male homosexual, facilitated by an imagined morphing from a female to a male homosexual ‘bottom’ (a male homosexual with a receiving anal sexual role), the object of desire for a male homosexual ‘top’ (a male homosexual with an insertive anal sexual role). So the female receptive sexual role is maintained, and as with *autogynephilic sex dysphoria* it looks like an intensified eroticisation of one’s own sex. As mentioned above, Bailey & Blanchard (2017) write that “becoming a gay man appears to be the primary goal or very close to it”. Again, that this is *not quite* is revealing. The desire hardly can be to *become* an homosexual male, given this would destroy the perspective of the female who is the author of the fantasising in the first place. As with *autogynephilic sex dysphoria*, in getting ‘inside’ the object of the fantasy -- here, the male homosexual ‘bottom’ perspective -- the female achieves fuller (female) sexual expression and experience. It seems, then, that just as with the male (near) equivalent, it’s an elaboration on top of female identity & female heterosexual orientation, and not some change in either.

SOCIAL CONTAGION OF FALSELY ASSUMED SEX DYSPHORIA

A further form, rather than *sex dysphoria* per se is a phenomenon of merely assumed hitherto hidden *sex dysphoria*, as a means of simply accounting for if not pathologising



experienced problems. The individual believes she/he has a *sex dysphoria* she/he does not have. Unlike other forms, its onset is not gradual but sudden and rapid, with no prior *sex dysphoria*, and is designated *rapid onset gender dysphoria*. [As before, I will reject the term *gender* and substitute *sex*: *rapid onset sex dysphoria*.] This form is overwhelmingly female and may be female-specific, though a very small proportion of diagnoses are of males. As established by Littman (2018, and, in trivial correction after non-cogent critique, 2019), whose findings are endorsed by clinicians (e.g., Hutchinson, Midgen & Spiliadis, 2019; Zucker, 2019), it's a classic social contagion. Susceptibility is linked to psychological disorder: most of these children having at least one, such as autism, and, according to Soh (2020), citing the sex dysphoria expert, Susan Bradley, many having a diagnosis of borderline personality disorder, or a history of obsessional behaviour.

There is a remarkable similarity in all key characteristics to the supposed *recovered memory* and *multiple personality disorder* epidemic in the 1990s of alleged child sex abuse (and even ritual satanic sex abuse) in imaginary adult recollection as a simple way to account for, pathologise and gain sympathy for individual experienced problems. Despite there being no scientific basis to either *recovered memory* or *multiple personality disorder*, only when they were exposed as fictions (notably by Ofshe & Watters, in their 1995 book, *Making Monsters: False Memories, Psychotherapy & Sexual Hysteria*) did the nonsense even of ritual satanic child sex abuse cease to be taken seriously. The whole protracted, very well-publicised mania is today as if it never had existed, such is its loss to popular memory. Indeed, it is currently recapitulated as long-after-the-event putative recall of early-adult or peri-adult sex abuse in the *#metoo* bandwagon of exaggerating often flimsy complaint not made at the time. Albeit less implausible than *recovered memory* and *multiple personality disorder*, it's no more scientific, with reliance on putative accurate recall after several decades -- despite voluminous scientific evidence this is impossible and almost guaranteed to produce *false memory*. Likewise unsupported by any scientific research, and counter to all experience, is the supposed invariable, irrevocable harm (post-traumatic stress disorder) taken to result from even the most trivial sexual assault (or mere poor communication within a sexual encounter).

Rapid onset sex dysphoria has nothing to do with sexual identification. Neither do the forms of actual *sex dysphoria*, given that even in the minority of cases where the dysphoria doesn't



subside and disappear, the individual is either homosexual (having the other binary sexual orientation) or has simply intensified identification without changing it, combining it with orientation. That some individuals feel so strongly that they need to (and imagine that it is feasible to) change sex, and choose to take the drastic step to supposedly *transition* through so-called *gender reassignment* (hormone treatment and, eventually, crude surgical work to produce a rough superficial facsimile of opposite-sex genitals), is not evidence against the scientific understanding of *sex dysphoria* herein outlined, especially as only a minority opt for full transition (Hall, Mitchell & Sachdeva, 2021). Neither is the relief sometimes attested by those who *transition*, given commonly expressed dissatisfaction after transitioning. Many such cases, and those of *detransitioners*, have been studied, but, given the major problems following-up cases, there has been no proper attempt to quantify these cases as proportions of the whole set of those who are minded to or actually *transition*. Soh discusses *detransitioning* at length, showing progressive attrition of samples at different junctures of large numbers of cases, as would be expected with a high rate of dissatisfaction. The vast bulk of *detransitioning* is invisible to official data -- not least because unlike with *transitioning* there is no requirement to see a doctor -- which are therefore meaningless. An unknown but a suspected large, very rapidly growing proportion of those who complete or have embarked on *transition* have *transition regret*, and of these many may then *detransition* (Donym, 2018; Soh, 2020). Nevertheless, many individuals would be expected to maintain their belief, given a *placebo* effect and that *focus* on what appears to be a solution can be itself cathartic of co-occurring, likely predisposing mental health conditions; the more cult-like and ideological is the belief. Furthermore, once embarked upon, jettisoning the belief would entail abandoning the salving of cognitive dissonance the belief affords, just as the psychic *crutch* fades with the dawning reality that it doesn't thus function, if indeed it isn't a chimera.

The virulent objections of activists to a scientific understanding is to be expected as these usually are not objections on behalf of those with *sex dysphoria* (most of whom see this as hijacking by those who have their own political interests at odds with theirs). It's instead part of the relentless perpetration of the extreme ideology of *identity politics*, which is not the concern for minorities it purports to be, but a mode of political *revenge* against the mass of ordinary people (Moxon, 2014). Just as homosexuality was hijacked by activists and misrepresented as



being not part of the biological binary nature of sex but instead belonging to a supposedly socially constructed continuum of sexual orientation / identity, the same has occurred in respect of *trans-sexuality*. To this end, just as the prevalence of homosexuality was deliberately inflated to be an order of magnitude greater than the reality, so too (and far more) has *trans-sexuality*. All is manifestation of the exponential growth of a totalitarianism, that as it grows and proliferates, diversifies and gets bolder, confident that notions ever more distant from reality can be foisted on the populace, brooking no dissent. The bigger the lie -- the more widespread, all-encompassing and in-depth it is -- the harder it is to have the perspective from which it is easily refutable.

CONCLUSION

Just as with ostensible bisexuality and a putative sexuality continuum, there is nothing in the misnomer *trans-sexual(gender)* nor in *sex(gender)-dysphoria* that actually is any change in sexual identification or sexual orientation, never mind raising any binary versus non-binary issue. With no challenge to the binary or immutable nature of sex, it is clear that not only is sex per se binary and immutable, but so too are sexual orientation and identification, notwithstanding they are but derivative of sex, and therefore might be expected, through confounding by other traits, to provide a fuzzier, non-binary, mutable picture. That a binary and immutable nature is clear even in what is sex-derived as well as in sex per se, confirms the profundity of the binary, immutable nature of sex.

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