

Gender Variance (Dysphoria)

Gender Identity Research and Education Society

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Gender variance is an *atypical* development in the relationship between the **gender identity** and the visible **sex** of an individual. In order to understand this atypical development, it is necessary, firstly, to understand something of the *typical* development of these elements of our make-up. Many in the scientific and medical professions recognise the terms ‘gender’ and ‘sex’ as having distinct meanings. ‘Gender identity’ describes the psychological recognition of oneself, as well as the wish to be regarded by others, as fitting into the social categories: boy/man or girl/woman. These social categories generate expectations of gender roles, that is, how we are expected to behave in society. ‘Sex’, on the other hand, is usually understood to represent the physical differentiation as male or female, indicated by the external appearance of the genitalia and the presence of gonads (testes in a boy/ovaries in a girl) which will determine reproductive function, and differences in brain structure and function. *Typically*, gender identity, **gender role** and sex characteristics (known medically as the ‘phenotype’) are consistent with each other and with the underlying chromosomal^[1] pattern: 46,XX for a girl, 46,XY for a boy.

Typically, every fetus^[2] derives one sex chromosome from the mother; this is always ‘X’. The second sex chromosome is provided by the father and may be either ‘X’ or ‘Y’. Typically, a fetus having one X and one Y chromosome will develop as male because genes on the ‘Y’ chromosome play a vital role in triggering the complex cascade of hormones which masculinise (virilise) the fetus, ensuring that his brain, genitalia and gonads are congruent. Typically, a fetus having two X chromosomes will develop as a female so that her brain, genitalia, gonads and organs of reproduction are congruent with each other. So, the way the fetus develops and functions, in terms of sex and gender identity depends, in part, on its innate sensitivity to particular hormones,^[3] as well as the availability of the relevant hormones.^[4] These influence the sex development of the brain^[5] and other sex characteristics in a way that is consistent with, and typical of, each gender. Animal experiments have indicated that there may be, in addition, direct genetic effects on the brain development which are not mediated by hormone input.^[6] Whatever the various routes leading to differentiation, typically, an XY baby, showing the external characteristics consistent with the male phenotype will grow to adulthood identifying himself as a man. Conversely, an XX baby, showing the external characteristics consistent with the female phenotype will typically grow up comfortably identifying herself as a woman.

This scenario applies to the majority of us. Despite considerable gradations, we are close enough to one end or the other of the gender/sex

spectrum that we never question whether or not our gender identity is consistent with our gonadal and genital sex. Since this is true for most, it is assumed to be true for all babies—that what you see is what you get. So, despite the fact that the baby's gender identity cannot be discerned accurately at birth—since it depends, to a large extent, on the early development of the brain which is invisible—it is assumed to be consistent with the visible sex. So when 'male' or 'female' is entered on the Birth Certificate, a consistent and unchanging gender identity is inferred and, effectively 'assigned', at that time, on the basis of external appearance alone. Typically, this inference is accurate enough. . .

...but it is not always so. The gender/sex spectrum is complex. A few individuals do not fit comfortably into what we think of as typically male or female. For a variety of reasons, one in 100 or so babies is born with some kind of sex differentiation anomaly.^[7] This could be, for instance, because the pregnant mother has additional hormones in her system, which she has absorbed from, say, medication or the environment, and which she has passed on to the fetus, or the fetus, itself, may be insensitive to the influence of certain hormones. Occasionally, sex/gender anomalies may be associated with unusual chromosomal patterns, for instance, 47,XXY, 47,XYY, 45,XO, 49,XXXYY, or even a mosaic (more than one chromosome pattern in different tissues of one individual). The possible permutations are numerous. The degree of discomfort any resultant variation may cause to an individual depends on the nature and the degree of that variation from the typical. In a few instances, there can be a serious risk to health. On the other hand, in many cases the effect is so slight that the condition remains undiagnosed or, at least, requires no medical intervention. In some, the manifestations may not be discernible at birth or for many years, so diagnosis is delayed.^[8]

One example of such a condition will demonstrate just how complex this subject is. An individual with *complete Androgen Insensitivity Syndrome* (cAIS) has XY chromosomes so one would expect the presence of a 'Y' chromosome to be associated with an individual who has a penis rather than a clitoris, whose gonadal material develops into testes rather than ovaries and whose brain takes on 'male' characteristics. However, in the case of cAIS, despite the presence of the 'Y' chromosome, the fetus has a degree of insensitivity to androgens (*testosterone, dihydrotestosterone*)^[9] and is, therefore, not subject to their masculinising influence. The result is a mixture of female and male characteristics: the baby is born with the external appearance of a girl and retains female brain characteristics; she grows up identifying herself as a woman. It may be only at puberty,

when the failure to menstruate is apparent, that the underlying condition is diagnosed. This XY female has no uterus, often a shortened vagina, or none, and undescended testes. 'Partial' AIS will lead to varying degrees of the condition, including one where assignment of sex (and, therefore, inferred gender identity) is not straightforward owing to the ambiguous appearance of the genitalia at birth. Some paediatricians would assign the baby as a boy, others, as a girl.

Many anomalies such as AIS can arise causing inconsistent development between the various elements by which we know ourselves to be either a man or a woman. Among the larger group embracing all these varieties, there is a small subgroup of individuals who experience **gender variance**. The personal experience of this state is sometimes known as gender dysphoria (dysphoria means 'unhappiness'). The impact of genetic and/or hormonal factors on their fetal development appears to cause parts of the brain to develop in a way which is inconsistent with their genitalia, gonads and, usually, with their chromosomes. This may give rise to another, rather different, example of XY women, that is, individuals whose visible physical sex appears to be that of a man, but whose brain has some female characteristics and whose gender identification is, therefore, that of a woman. Or, conversely, gender variance may occur the other way round. An individual having XX chromosomes and the visible physical sex of a female, may have some male brain characteristics and therefore, identify as a man. So the issue of one's gender identification, whether as a man or as a woman, or even neither (which occurs only rarely), is rooted in the brain,^[10] and is regarded by the individuals concerned, and is demonstrated by research, to be largely determined pre-birth and more or less stable thereafter.

Thus the experience of extreme gender variance is increasingly understood in scientific and medical disciplines as having a biological origin. The current medical viewpoint, based on the most up-to-date scientific research, is that this condition, which in its extreme manifestation is known as **transsexualism**, is strongly associated with unusual neurodevelopment of the brain at the fetal stage. Small areas of the brain are known to be distinctly different between males and females in the population generally. In those experiencing severe gender variance, some of these areas have been shown to develop in opposition to other sex characteristics and are, therefore, incongruent with the visible sex appearance.^{[11].[12]}

Very rarely, children may express this incongruence between gender identity and the genital sex, but their discomfort is not always easy to identify. Symptoms of unease with the assigned gender role and the visible sex

appearance are often only apparent to the individuals concerned and may not be understood even by them. If these children are unable to articulate their unease, their discomfort may grow through adolescence and into adulthood, as their families and society, in ignorance of their underlying gender identity, relentlessly reinforce gender roles in accordance with their physical appearance alone. However, some children are able to express a strong cross-sex identification, and sometimes insist on living in the opposite role. In particular, the increasing disgust with the development of secondary sex characteristics experienced by young people during puberty may be taken as a strong indication that the condition will persist into adulthood as transsexualism. Therefore, in carefully screened individuals, hormone blocking treatment may be given, before pubertal changes become apparent, so that these young people have more time to decide in which gender role they can achieve lasting personal comfort. There is no evidence that raising children in contradiction to their visible sex characteristics causes gender variance, nor can the condition be overridden by raising children in strict accordance with a gender role that is consistent with their visible sex.^[13]

Those who are not treated in adolescence may continue to struggle to conform; they may embark on relationships, marriages and parenthood in an attempt to lead 'normal' lives by suppressing their core **gender identity**. Ultimately, however, they may be unable to continue with the charade of presenting themselves as something they know they are not. The artificiality of their situation drives individuals to seek treatment to minimise the mismatch between the brain and the bodily appearance. They experience an overwhelming need to be complete, whole people and to live in accordance with their internal reality. Until this is achieved, the personal discomfort is such that it leads to great unhappiness and sometimes to suicidal feelings.

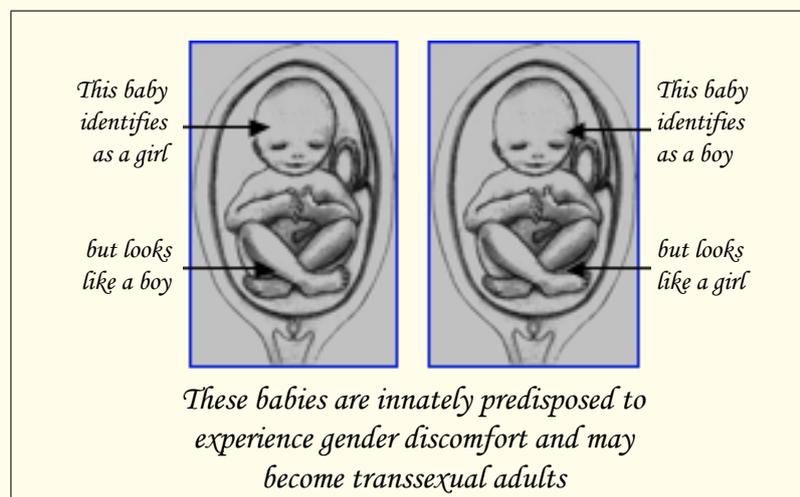
For many, '**transition**' to live in the **gender role** dictated by the brain may be the only way forward if they are to avoid a life of psychological torment. This will often be assisted by treatment to achieve physical re-alignment of the sex characteristics, involving hormone therapy and corrective surgery. Transition marks the change in social status from man to woman or woman to man but the process does not change the gender identity of the individuals concerned, rather, it confirms their core gender identity by bringing their **sex** characteristics, especially their visible ones, and their gender role into line with it. Research indicates that this treatment is highly successful.^[14]

However, the level of discomfort varies widely from individual to individual, and personal circumstances also impinge on how those experiencing

the condition respond: for instance, some may take hormones, but not have surgery or undergo transition of their gender role; some may become reconciled to their discomfort and learn to live with it. So, psycho-social factors may play a role in outcomes, though they appear to play no part in the causation, of the condition.

Gender variance, whilst it may be associated with a great deal of stress, is not caused by psychopathology or mental illness, rather, the stress may be understood to be a normal response to the internal biological conflict. The condition cannot be overcome by psychological or psychiatric treatments alone.

A person seeking to undergo, in the process of undergoing or having already undergone 'transition' may be described as a trans man (female to male) or a trans woman (male to female). A trans individual may be said to experience the condition of **transsexualism**.^[15] In the UK, driving licences and passports may be re-issued according to the individual's post-transition gender status. The **Gender Recognition Act** (2004) has been in operation since 2005. This Act enables trans men and women to obtain a Gender Recognition Certificate and (as long as the birth was originally registered in the UK) they may obtain a new birth certificate. They are now able to marry in their newly recognised gender. The Sex Discrimination Act (Gender Reassignment) Regulations protect trans people against discrimination in the workplace.



Sexual Orientation among Transsexual People

The term transsexualism does not indicate, or refer to, sexual orientation, *i.e.* a person's preference for a sexual partner of the opposite, or of the same sex/gender. Trans people may identify as straight, gay, lesbian, bisexual, or asexual. Some trans people say that, until the process of transition is complete, they cannot tell what their future sexual preference will be. It may remain the same; it may change. A trans person who has always been attracted to women may remain so. Or not. A trans person who has always been attracted to men, may remain so. Or not. During the process of transition, the issue of sexual orientation may be of little interest to the individual concerned, since the issue of **gender identity** is uppermost in his or her mind.

References and Notes

- [1] Chromosomes are in the nuclei of all the cells in the body. There are 23 pairs of which one pair are the sex chromosomes X (female) and Y (male). A viable fetus must have an X chromosome. Chromosomes are made up of genes that carry inherited characteristics, and are the blueprint for development. Genes are sequences of DNA shaped in a spiral helix.
- [2] 'foetus'—is the more usual but etymologically unsatisfactory spelling (Chambers, 1999) 'fetus' [often miswritten foetus] (The Shorter Oxford English Dictionary 1990).
- [3] Kawata, M (1995) 'Roles of Steroid Hormones and their Receptors in Structural Organisation in the Nervous System'. *Neuroscience Res.* **24**:1-46.
- [4] Greenberg JA (1999) "...unless the body is triggered by hormonal production to follow the male path, the fetus will normally develop as a female. Therefore, although chromosomes generally control the hormones that are produced, it is actually the hormones that directly affect sexual development". Cited in Arizona Law Review. (Re:estate of Gardiner)
- [5] Maclusky NJ, and Naffolin F. (1981) Sex Differentiation of the Central Nervous System. *Science* **211**:1294-1302.
- [6] Dewing P, Shi T, Horvath S, Vilain E. (2003). Sexually Dimorphic Gene Expression in Mouse Brains Precedes Gonadal Differentiation. *Molecular Brain Research* **118**:82-90.
- [7] Fausto-Sterling A (2000) Sexing the Body in Behavioural Genetics 2nd New York, p 144.
- [8] Greenberg JA (1999). Cited in Arizona Law Review (Re: estate of Gardiner)
- [9] Androgens are hormones produced by the testes and the adrenal glands. They are, by definition, hormones that masculinise.
- [10] Reiner WG. (1997) To be male or female—That is the Question. *Archives of Pediatric Adolescent Medicine*, **151**: 225."the organ that appears critical to psychosexual development and adaptation is not the external genitalia, but the brain".
- [11] Zhou J-N, Swaab DF, Gooren LJ & Hofman MA. (1995) Sex Difference in the Human Brain and its Relation to Transsexuality. *Nature* **378**, 68-70. "... in one of the human brain structures that is different between men and women, a totally female pattern was encountered in six male to female transsexual (people)... This was not due to cross-sex hormone treatment. These findings show that a biological structure in the brain distinguishes male to female transsexuals from men"; Cited by Gooren LJ, University Hospital, Vrije Universiteit of Amsterdam, affidavit in *Bellinger v Bellinger*, TLR 22-11-2000.
- [12] Kruijver FPM, Zhou J-N, Pool CW, Hofman MA, Gooren LJG and Swaab DF. (2000) Male to female transsexuals have female neuron numbers in a limbic nucleus. *The Journal of Clinical Endocrinology & Metabolism* **85**(5):2034-2041. "Regardless of sexual orientation, men had almost twice as many somatostatin neurons as women. The number of neurons in...male to female transsexuals was similar to that of the females. . . In contrast, the neuron number of female to male transsexuals was found

to be in the male range. . . The present findings of somatostatin neuronal sex differences in the BSTc (a part of the brain) and its sex reversal in the transsexual brain clearly support the paradigm that in transsexuals sexual differentiation of the brain and genitals may go into opposite directions and point to a neurobiological basis of gender identity disorder“.

- [13] Green R, Affidavit in *Bellinger v Bellinger*, Court of Appeal Judgment, July 17th 2001. TLR 22-11-2000.
- [14] Kipnis K and Diamond M. (1998) Pediatric Ethics and the Surgical Assignment of Sex. *Journal of Clinical Ethics*(Winter) 9(4):398-410
- [15] Terminology: The term ‘transsexualism’ rather than ‘transsexuality’ is preferred, since the latter misleads by giving the impression that the issue here is ‘sexuality’, which it is not. Some individuals prefer to describe themselves as **transgender**, as a catch-all description of many gender/sex variations across a broad spectrum. Although the term ‘transsexual’ is still used as a noun, it is preferable to use it as an adjective—transsexual people—or, better still, is the use of the more up-to-date terminology, trans men and trans women, as used in this paper. The usage of all these terms is continuously changing, especially as our understanding and perceptions of the condition change. Some, having **transitioned** from assigned to core gender, do not identify as trans at all; understandably, they identify simply as men and women. The clinical definition of the condition is Gender Identity Disorder. This is regarded as stigmatising and should be avoided.

Glossary

Gender Identity

Gender Identity describes the psychological identification of oneself as a boy/man or as a girl/woman. There is a presumption that this sense of identity will evolve along binary lines and be consistent with the sex appearance.

Sex

Sex refers to the male/female biological development—the phenotype. In an infant, the sex is judged entirely on the genital appearance at birth. Other phenotypic factors such as karyotype (chromosomal configuration) are seldom tested unless a genital anomaly is present. There is a presumption that an apparently male infant will identify as a boy, and vice versa.

Gender Role

The gender role is the social role—the interaction with others which both gives expression to the inner **gender identity** and reinforces it. Despite the greater gender equality in modern Western culture in terms of: the subjects studied in school and at university; the choice of friends; work and domestic arrangements; dress and leisure pursuits, there is still a presumption of conformity with society's 'rules' about what is appropriate for a man or a woman, a boy or a girl, especially in terms of appearance. Too great a transgression often causes anxiety and discomfort in those who witness it.

Gender variance/ gender dysphoria / gender identity disorder

It is now understood that the innate gender identity, although powerfully influenced by the sex of the genitalia and the gender of rearing, is not determined by these factors. There is evidence that sex differentiation of the brain may be inconsistent with other sex characteristics, resulting in individuals dressing and/or behaving in a way which is perceived by others

as being outside cultural gender norms; these unusual gender expressions may be described as gender variant. Where conforming with these norms causes a persistent personal discomfort, this may be described as gender dysphoria. In many, this includes some level of disgust with the phenotype, since this contradicts the inner sense of gender identity. Gender dysphoria is not a popular term with those experiencing the condition since it has become associated with the **DSM-IV** 'clinical diagnosis' of gender identity disorder published by the American Psychiatric Association. Both these descriptions imply a diagnosis of 'pathology' and mental illness, whereas the more neutral term, *gender variance*, denotes that these departures from stereotypical gender experience and expression are part of a natural, albeit unusual, human development.

Transsexualism

When **gender variance** is experienced to the degree that medical intervention is necessary to facilitate a permanent transition to a **gender role** that accords with the **gender identity** thus alleviating the intense discomfort, it may be regarded as *transsexualism*. In the United Kingdom, those who are intending to undergo, undergoing or having undergone gender reassignment, under medical care are protected in law. Those who have changed their role permanently may obtain legal recognition of their new gender status in accordance with the **Gender Recognition Act**.

Gender Confirmation Treatment

Those **transitioning** permanently usually have gender confirmation treatment that includes hormone therapy and often surgery to bring the sex characteristics of the body more in line with the gender identity. Such surgery is sometimes referred to as gender reassignment surgery.

Transgender

Transgenderism has had different meanings over time, and in different societies. Currently, it is used as an inclusive term describing all those whose gender expression falls outside the typical gender norms; for example, those who cross-dress intermittently for a variety of reasons including erotic factors (transvestism), as well as those who live continuously outside

gender norms, sometimes with, and sometimes without, medical intervention. There is a growing acknowledgement that although there is a great deal of difference between say, a drag artist and a **transsexual** person, there are nonetheless areas in the transgender field where the distinctions are more blurred; for example, a person who cross dresses intermittently for some years, may later transition fully to the opposite role.

Transition

Transition is the term used to describe the point at which a permanent change of gender role is undertaken, in all spheres of life—in the family, at work, in leisure pursuits and in society generally. Some people make this change gradually, however, others emerge overnight.

Trans men and trans women

The expression *trans* is often used synonymously with **transgender** in its broadest sense. Sometimes its use is specific; for instance, those born with female phenotype but identifying as men may be referred to as *trans men*; and those born with male phenotype but identifying as women may be referred to as *trans women*. Where trans people have **transitioned** permanently, many prefer to be regarded as ordinary men and women.

Sexual Orientation

Sexual Orientation is a separate issue from **gender identity**. Trans people may be gay, straight, bisexual or, occasionally, asexual. Their sexual relationships may remain the same through the transition process, or they may change.

Gender Recognition Act (2004)

Under the **Gender Recognition Act**, trans people who experience severe **gender variance** described above, and have medical treatment for the condition, may apply to the **Gender Recognition Panel (GRP)** for a **Gender Recognition Certificate (GRC)**. The GRC then entitles them to recognition of the gender stated on that certificate "for all purposes". Where the birth was originally registered in the UK, the GRC may be used to obtain

a new birth certificate. Over 2,000 people have now made successful applications for legal recognition of their new gender status to the Gender Recognition Panel (GRP). Those seeking a change of gender status must provide the GRP with evidence of a 'diagnosis' of persistent gender dysphoria, and must convince it of their intention to live in the new role for the rest of their lives. This is a paper exercise and does not require the applicant to appear in person. Details of medical treatment and relevant dates are required. Genital surgery is not a requirement, although where it has taken place, applicants must supply details.

The distinctions between those who qualify for GRCs and those who do not, are not necessarily medical. Trans individuals who are legally married, and do not wish to dissolve that marriage, are not permitted to have a GRC. An Interim GRC of 6 months duration may be obtained, but it confers no legal rights and serves only as a way of dissolving the marriage, whereupon it may be converted immediately to a full GRC.

The GRC gives trans people the right to marry someone of the opposite sex, and to have a civil partnership with someone of the same sex (Civil Partnership Act, 2004).