Foreword by Dr Lynne Jones MP. PhD.
Chair of the Parliamentary Forum on Gender Identity

In view of the uninformed opinion expressed by some of the members of the House of Lords and the House of Commons during the debates on the Gender Recognition Bill, the following document was sent out, from my office, to all members of the House of Commons Standing Committee on the Bill prior to the Committee stage (2004). It was prepared to promote the understanding that transsexualism is not a mental illness, and to explain, briefly, something of the extreme complexity of natural variation in the field of sex differentiation, of which gender dysphoria forms a small part.
Lynne Jones

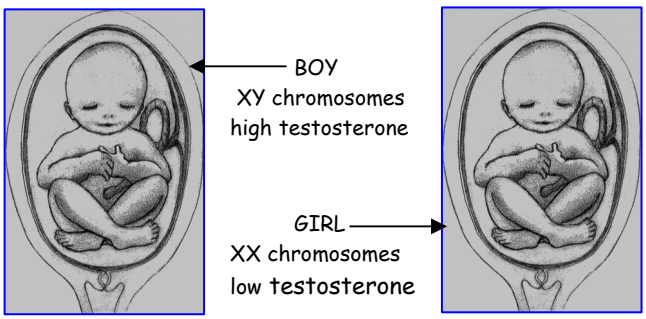
TRANSSEXUALISM – THE INSIDE STORY

Information for MPs

Atypical gender development may give rise to a psychological experience of oneself as a man or as a woman, that is, a *gender identity*, which is incongruent with the *phenotype* (the sex differentiated characteristics of the body). Individuals experiencing this rare condition will have been raised, from birth, in the *gender role* (the social category of boy or girl) which is consistent with their phenotypic appearance. In extreme cases, both the appearance of the body and the associated gender role give rise to great discomfort. The personal experience of this severe gender variance is sometimes described medically as gender dysphoria.

This condition may be experienced in varying degrees, but in its profound and persistent form, individuals may need to 'transition', to live in the gender role which is consistent with their core gender identity. This degree of discomfort may be described as transsexualism. Individuals experiencing this condition may be referred to as trans men (those transitioning from living as women to living as men) and trans women (those transitioning from living as men to living as women). Transsexualism should not be confused with cross-dressing (transvestism); the broader range of varied gender expression, including transsexualism may be referred to as transgenderism. It should be noted that issues of gender identity are *not* the same as sexual orientation, that is, the sexual preference for a male or for a female partner, both or neither.

The process of sex differentiation is initiated in the fetus in the early stages of pregnancy. Typically, this differentiation is associated with the chromosomes: all fetuses have an X chromosome; the second chromosome in a boy will be Y, and in a girl will be X. Certain genes on the Y chromosome trigger the cascade of masculinising hormones from the testes (androgens - testosterone and MIH, a hormone antagonistic to female internal genitalia) which move the fetus from its female (default) status towards the male status. Differentiation of sex characteristics: genitalia, gonads (testes/ovaries) and of the brain, and the apparently binary male or female outcome in all these areas is, therefore, driven by the genes and the hormone environment – especially the presence or absence of testosterone. The latter depends partly on the pregnant mother and partly on the hormone (endocrine) system of the fetus itself.



It is assumed that the baby's development is consistent, that all the sex characteristics will be congruent with each other, and that a child assigned as male will identify as a boy, and that a female infant will identify as a girl. This assumption is – usually – accurate.

'M' or 'F' is entered on the birth certificate in accordance with genital appearance at birth.

May 2009: This document has been updated to take account of recent research, and of changes in terminology since it was written in 2004 .Gender Identity Research and Education Society (GIRES); contact GIRES 01372-801554: e-mail bernardgi@aol.com or Terry2reed@aol.com Website: http://www.gires.org.uk

However it is not always so; by the time of birth, approximately 1 in 80 babies will have developed conditions known generally as intersex or disorders of sex development. These arise where there is some degree of sex or gender anomaly, owing to a disturbance in the genetic code and/or the hormone environment impacting on the process of sex differentiation.

The possible anomalies are many and varied. There may be visible ambiguities of the genitalia so that the assignment of the baby as a boy or girl is problematic; there may be inconsistencies between genitalia and gonads, and/or internal reproductive organ anomalies. In some cases, where the fetus is insensitive to the masculinising influence of androgens, an individual may develop as a phenotypic girl despite having XY chromosomes. However, she will have undescended testes, no uterus or ovaries and a short, or more-or-less non-existent, vagina.

So, transsexualism does not stand alone, but may be understood as part of a complex spectrum of related conditions, an interpretation acknowledged by Lady Butler-Sloss, (Court of Appeal, 2001): "There is, in informed medical circles, a growing momentum for the recognition of transsexual individuals for every purpose and in a manner similar to those who are intersexed".

Factors which may be implicated in causing inconsistent fetal development may include genetic influences, environmental influences and/or medication to the mother during pregnancy. Rarely, unusual chromosomes configurations, e.g. XXY, XYY, XXYYY etc. or even a mosaic of more than one chromosomal pattern within different tissues in one individual, may also be associated with atypical development of gender identity and sex characteristics.

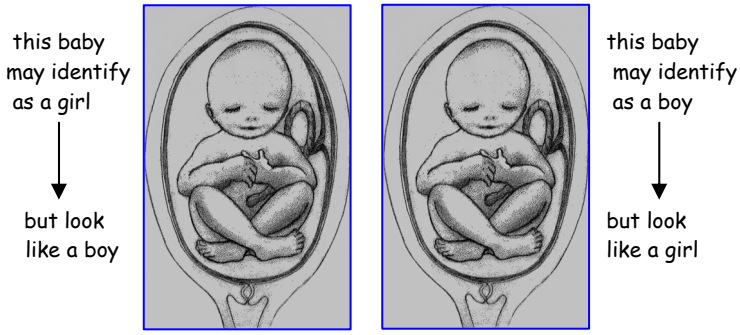
Some brain processes have been shown to be dissimilar in men and women in the population generally; hearing, for instance is 'hard-wired' differently. A recent study on the hearing of trans women demonstrated that it resembles the non-trans *female* pattern rather than the male pattern (Govier *et al*. 2009).

Previous research has established that small areas in the hypothalamic region of the brain are anatomically differentiated into male and female, in the general population. More recent research published in 1995, 2000 and 2008 undertaken by J-N Zhou *et. al.;* Frank Kruijver *et. al.* and Garci-Falgueras and Swaab respectively, demonstrated that in three small, but statistically robust, post-mortem studies of individuals experiencing transsexualism, two sex dimorphic areas - the central subdivision of the bed nucleus of the stria terminalis (BSTc) and the uncinate nucleus - are differentiated in opposition to the chromosomal, genital and gonadal sex characteristics. This was found not to have been caused by cross-sex hormone administration nor by sex hormone variations in adulthood. These findings support the view that these nuclei are elements involved in the development of gender identity and that their reversed sex-differentiation is associated with a strong predisposition towards transsexualism.

Professor Louis Gooren states that this research, undertaken at the Dutch Brain Research Institute and published in prestigious peer-reviewed scientific journals, supports the paradigm that transsexualism is a condition in which the sex-differentiation of the brain follows a pattern typical of the opposite sex.

Where the predisposition for transsexualism exists, psycho-social factors may subsequently modify the outcome. However, there is no evidence that socialisation in contradiction to the phenotype causes transsexualism, nor that socialisation which is consistent with the phenotype can prevent it. Most trans men and trans women struggle to conform to stereotypical gender role behaviour from early childhood, through adolescence and into adulthood.

This may create intolerable stress which, in some individuals, can only be resolved by undergoing transition from the gender role imposed since birth, to the role consistent with the gender identity. **This process does not change the underlying gender identity, but confirms it by aligning the phenotype with it, thus ending the mismatch**. Trans people often delay transition to live in the opposite role, until they are adults, but a few do so during childhood or adolescence.



These babies are innately predisposed
to experience gender discomfort.

In conclusion, although the processes of sex differentiation of the brain are not yet fully understood, the evidence suggests that transsexualism is not a mental illness but rather a neuro-developmental condition. Treatment that is regarded as highly successful usually includes an integrated programme of hormones and corrective surgery to achieve realignment of the phenotype with the gender identity, accompanied by such psychological support as the individual may need to assist in adaptation to the appropriate gender role.

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