

## **The Council of Europe 23rd Colloquy on European Law - April 14-16, 1993**

Transsexualism, medicine and law

Closing speech by Professor L.J.G. Gooren University Hospital, Amsterdam

The transcript of this speech (delivered to an international audience of government representatives, lawyers, doctors and transsexuals at the end of the three day conference) is taken from the official proceedings, published by the Council of Europe. ISBN 92-871-2805-7 Professor Gooren is an endocrinologist and holds the world's only chair in transsexuality, at the Vrije Universiteit, Amsterdam (Netherlands)

Ladies and Gentlemen

When I address this audience as ladies and gentlemen, it is not my first association that I am addressing a group of human beings with vulvas and vaginas on the one hand, and a group with penises on the other hand. This introduction, this approach might sound abrupt, or even odd to you, but it brings us right to the core of the matter.

When I address you as ladies and gentlemen, I am referring to the kind of person - woman or man - that you became after your birth, when your sex was determined by the criterion of the external genitalia. This being established, your boyhood or girlhood, your manhood or womanhood, became a matter of indirect evidence. Your genitalia are normally not apparent or obvious in your social environment. Clues as to your being a man or a woman come from indirect sources. When we group up, we develop a sense of being a man or a woman, on which we hardly ever reflect. We are what we are, either a man or a woman. For this sense of belonging to one sex of the other the term gender identity has been coined. We communicate this sense of belonging to the one sex and not to the other to the outside world in our gender role. At the roots of this gender identity/role development lies the criterion of the external genitalia, as determined immediately after birth, but along the course of development of the gender identity/role, the genital criterion is not the first association when we talk about men and women in daily life. The reason why I am so elaborate on this subject is that most legal systems pertaining to the determination of sex pay absolute reverence to this one criterion of external genitalia, while there are several criteria or characteristics of sex, such as the genetic and the gonadal ones, the criteria of the internal and external genitals and of the sexual differentiation of the brain. The latter one, the sexual differentiation of the brain, is a rather new issue. I cannot say we have a complete picture, but the scientific information can no longer be ignored, and it goes without saying that it has relevance for the subject of transsexualism.

What I said earlier about the relatively loose connection between the genital criterion of sex on the one hand and the gender identity on the other, is not at all new information. Let us have a look at a very nice piece of tapestry made in Alsace

(presently France) in the 16th century. It is now in The Cloisters Museum in New York City. It depicts the wise King Solomon. The lady in the picture has decided to put his wisdom to the test. She has two flowers in her hand, one a false, artificial one, the other a true flower. They look very much alike. The King is asked whether he is able to tell which is the true one and which is the false one. He says: "Wait and see to which one a bee will go. That is the true one". The next question pertains to the sex of two children, a pair of twins, one male, one female. They are dressed exactly the same. Can the King distinguish the male twin from the female twin? He can, he throws an apple at each of them. The girl twin will catch the apple with her knees together leaning slightly backwards, whereas the boy twin will move his knees apart, and move slightly forward to the King. Next they are asked to throw the apple back to the King. The girl twin will throw the apple back moving her arm in the lower half of a circle, whereas the boy will hurl the apple back moving his arm in the upper half of a circle. The lesson to be learnt here is that the wise King Solomon, in order to determine the sex of the two twins, did not use the criterion of the genitalia. He could easily have asked the children to lift their skirts. He did not! He relied on the indirect information of the body language of both twins. Which is what we do in our daily lives. Nothing new under the sun.

Let us now pay some attention to the biology of becoming a man or a woman, or sometimes, and this is unfortunate, becoming something in between. This slide shows the entrance of the cathedral of San Gimignano in Tuscany (Italy), and God taking a rib out of Adam, this creating Eve. This story undoubtedly applies to the first lady on earth, but you in the audience have a different history of becoming men or women.

At conception it was decided - let us assume by the laws of chance - that your chromosomal pattern was 46,XY or 46,XX. Except for the chromosomes, there is no distinguishable difference between a future boy and a girl in the first 6 weeks of development. After the first 6 weeks, the indifferent gonad becomes a testis in the case of a 46, XY pattern, and an ovary in case of a 46, XX pattern. All the following steps in the differentiation process are dependent on the hormones produced by the testis before birth. The next step in the differentiation process is that of the formation of the internal genitalia. These are completely identical ducts in boys and girls. In the presence of testicular hormones produced by the boy foetus, one pair of ducts will become prostate and deferential duct, while the other pair goes into regression. In a girl foetus, the development is the contrary: there are no testicular hormones, so one pair does not develop, the other pair becomes the uterus and oviducts. A couple of weeks later, the external genitalia develop from a common principle. In the presence of testosterone, as is normal in a boy, the external genitalia become a penis and a scrotum in a boy. In girls there is no testosterone around, and the external genitalia develop into a vulva and vagina.

It has always been assumed that the sexual differentiation was completed with the formation of the external genitalia. But it is NOT. Since the beginning of this century we have known that the brain, too, undergoes a sexual differentiation. This has been firmly established scientifically in lower animals, and it occurs relatively late in

development, in most species just before or shortly after birth. Let us take the example of a rat. If a normally developed male rat is castrated on the first day after his birth, his brain will have a female sexual differentiation; if, by contrast, a female rat is given testosterone immediately after birth, she will have a male sexual differentiation of her brain. This implies that the female rat with her female genitalia will copulate in the pattern of a male rat, and conversely, the male rat, deprived of testosterone after birth, will assume the typical copulation position.

What we see here is that male animals, through hormonal manipulation, can be led towards female sexual patterns, and conversely, female animals towards male sexual patterns. Again, this is firmly established sexology of lower mammals such as the rat and the guinea pig.

What do we know about man, the human species? We know that the human brain, too, undergoes a degree of sexual differentiation. Three areas of the brain have now been documented as being sex-dimorphic. One of them is the so-called sex-dimorphic nucleus in the lower part of the brain, the hypothalamus. Surprisingly, the sex difference becomes manifest only 3 to 4 years after birth. This is amazing information. Long after you were born and after your sex had been determined by the criterion of the external genitalia, your brain still had a long way to go to become sexually differentiated; it does not do so not before the age of 3 to 4 years. These scientific findings may shed light on the problem of transsexualism where we find a contradiction between the genital sex on the one hand and the gender identity on the other hand.

The process of sexual differentiation is characterised by the following: Sexual differentiation is a multi-step process, not a one point decision

Each step is characterised by a bi-potentiality; each time the developing organism is at a bifurcation of the male or female development

Each step has a critical period in the course of development. Only during a window of time can this particular step take place. No backtracking

The sexual differentiation process has not been completed at birth: the sexual differentiation of the brain occurs between the age of 3 to 4 years.

So far I have described the orderly normal sexual differentiation of becoming a boy or a girl, a man or a woman. It is unfortunate that this process is liable to errors. In about 5 in every 1000 individuals this process has shown some errors. It is also a bit of an admonition to those who always state: so God created man in His own image: male and female created He them. Doctors can testify: in the vast majority of cases

with impeccable result, in about 5 in every 1000 individuals there are sex errors. The sexual differentiation has not followed its normal course.

I will now show some of these sex errors, and the list is by no means exhaustive. It can be concluded that there may be contradictions between the genetic sex on the one hand and the other criteria of sex on the other hand.

In the clinical syndrome of androgen insensitivity, for instance, all the cells of the body are intense to the action of testosterone. While the first two steps of sexual differentiation are normal (the chromosomes, the formation of the gonads) the other steps follow the path of the other sex. These subjects are identified as girls at birth and are raised as girls. They are infertile, they have no ovaries, they have no uterus; but they do have testes. They are legally registered as female and almost always engage in a marriage with a man.

Another example is the clinical syndrome of the congenital virilising adrenal hyperplasia. If this occurs, the first steps of sexual differentiation follow the pattern of a girl: a 46,XX chromosomal pattern and ovaries, but due to abnormal production of androgens by the adrenal, the external genitalia virilise, become more or less male, depending on the degree of the severity of the disease. In severe cases, these children are taken for boys at birth and raised as boys. They marry women, but cannot become fathers because they have no testes. Instead, they have ovaries.

Whereas the above clinical syndromes are relatively easy to comprehend, some cases of hermaphroditism are difficult to interpret. What can be done with these children at birth? A person cannot grow up without a sex. What decision should be taken? A decision must be taken! The social environment requires it, and the law requires it. What criterion of sex must take precedence, certain predominances over others? Would it be the genetic, the gonadal, or the external or internal genitals? It has become accepted clinical practice to assign the baby to that sex in which it will in all likelihood function best in childhood and adulthood, so in general the criterion of the external genitalia prevails. It is medically assessed to what sex the function of the external genitalia will lend themselves best, sometimes after surgical corrections. It has particularly been Dr. John Money who has built up a vast experience with this category of children, and the policy described above has proved successful. It can be summarised as follows: In a follow up of children with ambiguous genitalia at birth for whom decisions had to be made as to sex assignment, sex of assignment and rearing was more accurate than any other variable as a prognosticator of the gender identity/role established in life. The other variables were chromosomal and gonadal sex, sex hormones, and genital anatomy.

Now back to transsexualism. It is likely from the available evidence that in transsexuals the pattern of sexual differentiation of the brain has not followed the pattern typical of that sex: in other words, the nature of the chromosomes, the gonadal and genital development are in contradiction with the brain sex; at least with the sexual self-image of which we assume the substrate to be in the brain. There is some evidence to confirm this assumption. In a collaborative study with the

Dutch Brain Research Institute, Professor Swaab could demonstrate in postmortem investigations that in two male-to-female transsexuals the sexual-dimorphic nucleus of the brain showed a similarity with the female pattern. This was not the case in a third transsexual. The suprachiasmatic nucleus was unusually large and showed a similarity with the pattern found in homosexual men.

There are some interesting findings with regards to brain functions. Women do better on verbal tasks than men; and men, by contrast, do better than women on spatial ability. Men are better at finding the way than the average women. Several studies indicate that transsexuals show similarities in verbal and spatial performance with the sex they view as their own.

In conclusion, there is now evidence which needs further corroboration that in male-to-female transsexuals the sexual differentiation of the brain is cross-sex to the other characteristics of sex, and vice versa in female-to-male transsexuals.

Transsexualism manifests itself early in life. On this slide you see two brothers of the same family. The younger boy feels and presents himself to the world as a young man. His brother, a future candidate for a sex change, is showing clear signs of cross sex behaviour, look at the body angle. The next slide shows that this cross-sex behaviour persists in time. Here you see the same person a couple of years later, persisting in cross-sex behaviour.

I come to the end of my talk. As a biomedical expert I arrive at certain conclusions and I arrive at certain recommendations for legislators. In summary, legal and sex assignment by the criterion of the morphology of the external genitalia:

Is based on only one of the five criteria of sex presently known; the other criteria are gonadal, genital and brain sex

The criterion of the external genitalia does not imply that chromosomal sex or the sex of the internal genitalia are concordant

Sexual differentiation of the brain is not completed at the moment of birth. This takes place between the ages of 3 to 4 years, well after birth

Assignment to sex on the criterion of external genitalia is an act of faith, but well founded and time-honoured. Only 1 in 10,000-30,000 will be a false prognostication

Such an expedient practise does not require a change

It works extremely well in daily life

In order to do justice to the rare individuals in whom sexual differentiation of the brain postnatally has not followed the path prognosticated, for example, by the

external genitalia, the law must make provisions. If we have the constitutional right to be treated equally and the same by the law, the law must do justice to the rare individuals in whom sex errors of the body occur. This is a personal misfortune, but no ground for unfair treatment.

Ladies and Gentlemen.

I hope I have been able to communicate to you that transsexualism is not an isolated phenomenon in the area of sex errors of the body. It is one on a sliding scale. In some people you will find contradiction between their genetic sex and the other variables of sex. In other people between their genetic sex and gonadal sex on the one hand, and their genital and brain sex on the other. Finally in transsexuals there is a contradiction between the genetic, gonadal and genital sex on the one hand, and the brain sex on the other. For all these people who have had the misfortune to incur a sex error of the body in their development, solutions have to be found. It is part of our anthropology, and of our human existence, that we recognise only men and women in our social system, which reflects on our personal status. In other words, there is no room for intersexes, socially, legally and psychologically. Medical experience teaches that being intersex makes a person subject to social abuse; such a person becomes a freak. It would be absolute medical ignorance, medical incompetence, even abuse NOT to rehabilitate a person with a sex error of the body. Sex errors of the body cannot be corrected in the true sense of the word. The only option is a rehabilitation to one sex or the other. Rehabilitation does not pretend to be a cure. It is exactly what the word says: rehabilitation makes the best of a condition that cannot be corrected essentially and fundamentally.

The guiding principle in this rehabilitation process is to assign a person with sex errors of the body to the sex in which he/she will function best, psychologically, socially, erotically, sexually. Again, I want to stress that reassignment of transsexuals is a medical intervention on a sliding scale. It is not essentially different from procedures in other sex errors of the body. The same interventions including genital surgery are done in other cases of sex errors of the body. This brings me to the issue raised in some of the legal material I have been reading in this context: Can it really be done? Sex reassignment in transsexuals? In other words: is the feminisation of the body by hormones and the construction of a neovagina, a true authentic sex change or is it a construct, an artefact, a modification only of the body? My answer would be that it is as much a sex change as it is in other cases of intersex. Many of the intersex cases will have contradictions between the variable, the criteria of sex. Many will be unable to produce children; it is a rehabilitation to the best of our ability, not a cure.

There can be no psychomedical ground not to treat these people respectfully; we must provide them with reassignment treatment which meets their needs. In the cases of intersex, and this is particularly true of transsexualism, medical treatment does not bring resurrection from one's ashes; it is not a cure. It is not a completely

new start, it is a rehabilitation process. We must accept the given fact of sex errors of the body and continue from there. We must create the conditions for successful rehabilitation to the male or female sex as much in cases of transsexualism as in other cases of intersex subject.