

NATURE AND CULTURE: SOME THOUGHTS ON
RACE, SEXUAL ORIENTATION AND SCIENCE

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Abstract: Nature and Culture: some thoughts on race, sexual orientation and science

This paper contemplates three dichotomies and the role of science in their generation and reproduction: nature / culture; heterosexuality / homosexuality; and black and white races. It is hoped that comparing them will provide yet more examples of how the objectivity of science is constituted by the social context in which it develops: how “race” may be denied by theoretical genetics but reinstated by pharmacogenetics and the drug industry, based on the folk categories of Western Europe and North America, which also define the variables used by researchers into sexual desire. In both cases, we find in operation what Robert King Merton termed the self-fulfilling prophecy or what the philosopher Ian Hacking termed the looping effect. The basic though implicit premise that race and homosexual and heterosexual orientations exist *in nature* acts as a prophecy for the research results that inevitably end up ratifying their existence as natural entities.

Key words: Nature/culture, heterosexuality/homosexuality, “race”, genetics, sexual desire.

Resum: Natura i cultura: algunes reflexions sobre la raça, l'orientació sexual i la ciència

Aquest treball contempla tres dicotomies i el paper de la ciència en la seva generació i reproducció: natura / cultura, heterosexualitat / homosexualitat, i les races blanca i

negra. Amb la seva comparació s'espera proporcionar encara més exemples de com l'objectivitat de la ciència està constituïda pel context social en què es desenvolupa: com la "raça" pot ser negada per la teoria genètica, però reinstaurada per la farmacogenètica i la indústria farmacèutica, a partir de les categories folk d'Europa occidental i Amèrica del Nord, que també defineixen les variables utilitzades pels investigadors sobre el desig sexual. En ambdós casos, ens trobem davant el que Robert King Merton anomena la profecia que s'autocompleix, o el que el filòsof Ian Hacking anomena l'efecte de bucle. La premissa bàsica i potser implícita que la raça i l'orientació homosexual i heterosexual existeixen en la naturalesa actua com una profecia per als resultats de la investigació que, inevitablement, acaben de ratificar la seva existència com a entitats naturals.

Paraules clau: naturalesa/cultura, heterosexualitat/homosexualitat, "raça", genètica, desig sexual.

Males do not represent two discrete populations, heterosexual and homosexual. The world is not to be divided into sheep and goats. It is a fundamental of taxonomy that nature rarely deals with discrete categories...
The living world is a continuum in each and every one of its aspects.
(Alfred Kinsey, 1948: 639)

Introduction

When Verena Stolcke asked me to participate in a conference on Nature and Culture, I was lost for a topic. After all, she was asking me to talk about the very fundamentals of anthropology. So I decided to bring together two of my research concerns, one at the beginning of my time in Brazil in the 1970s, when I wrote about sexual orientation, the other, much more recently, on race.

Both have everything to do with the relationship between what are generally understood to be nature and culture. Most people in Western Europe and North America think that people can be categorized unambiguously as straight, gay or bisexual. Most people, including those who prefer members of their own sex for love and sex, think they form a natural category, that they were born as such, and share much more than their common desire for sexual and/or affective relationships with people of the same sex. By the same token, most people believe that people are born either black or white and that as such each "group" has its own distinct and common cultural and biological heritage.

Cassandra, in the guise of anthropology, thrust a spanner in the works: the spanner of social constructivism. “Nonsense!” declare we anthropologists (and more recently those who espouse a perspective called queer theory). Race, we claim, and sexual orientation, are both historically constructed categories. The conjuring of sex and phenotype may vary radically from social situation to social situation, or, if you like, from culture to culture.

The arrival of contemporary genomics has complicated the picture even further. But here lies an irony, which is where I would like to start and end my talk. Mainstream genetics denies the existence of discrete races. And yet, mainstream genetics (if we take as mainstream articles published in mainstream journals) seems to be telling us that there are two sexual orientations IN NATURE, homosexual and heterosexual. In both cases, there remains a remarkable consensus around the idea that liberation from racism and homophobia lies in the celebration of “racial” and “sexual” identities respectively.

But the nature/culture dichotomy, like the heterosexual/homosexual and black/white dichotomies, is itself also a product of society. Furthermore, those who claim to be the arbiters of the natural are social beings and as such may only think with the categories which they construct *as social beings*. Where better to follow the example of Stolcke (1997) and look at science itself?

By so doing, I hope to provide yet more examples of how the objectivity of science is constituted by the social context in which it develops. How “race” may be denied by theoretical genetics but reinstated by pharmacogenetics and the drug industry, on the basis of the folk categories of Western Europe and North America, which also define the variables employed by researchers into sexual desire. In both cases, we find in operation what Robert King Merton termed the self-fulfilling prophecy (Merton 1948), or what the philosopher Ian Hacking termed the looping effect (Hacking 1995). The basic yet maybe implicit premise that race and homosexual and heterosexual orientations exist *in nature* acts as a prophecy for the research results that inevitably end up ratifying their existence as natural entities.

Science and Race

The arguments of contemporary theoretical genetics against the concept of “race” are by now so familiar that they do not need reproducing here.¹ What I find more

1 See the American Anthropological Association’s “Statement on Race”, approved on May 17, 1998 (<http://www.aaanet.org/issues/policy-advocacy/AAA-Statement-on-Race.cfm>).

interesting for this essay is that when we look at science in action, especially pharmacogenetics, we find research that includes “race” as an important and independent variable in the search for specific drugs for specific genetic configurations.

In 2005, the U.S. Food and Drug Administration approved BiDil “for the treatment of cardiac problems or as an adjunct to standard therapies in patients self identified as blacks”. According to anthropologists Joseph Jones and Alan Goodman, who witnessed the ritual of approval, the approval owed more to politics than science (Jones and Goodman 2005). The tests involved 1050 black patients, that is, patients who declared themselves African-American. Of these, 42% showed less chance of developing heart problems. There was no control group of so-called whites! All the same, the lobbies of the Association of Black Cardiologists and the National Association for the Progress of People of Color and the National Foundation for the Health of Minorities weighed in and the drug was approved, the patent extended to 2020. Jones and Goodman summarized this episode as follows: “The ‘fact’ of genetic blackness that is read into health disparities may be managed with medication, and so long as it remains good business to do so, the underlying social insult of racialized difference will be reproduced.”

I would propose a more radical interpretation. Although there can be little doubt that pills for African-Americans are “good business,” it is also true that in spite of the findings of genetics that “race” is not a scientific concept and the knowledge that neither social identities nor certain phenotypes correspond to genomic differences, the common sense of most American citizens, including their scientists, continues to understand race as a natural category which they take for granted when they are not explicitly addressing it.

A dramatic example of what I am arguing is recent research conducted by anthropologist Duana Fullwiley in two pharmaceutical research laboratories, both of which included “race” as a variable in their research (Fullwiley 2007). When she asked the scientists what they understood race to be, they were mightily perplexed. Here is an excerpt from one of the conversations between Fullwiley and the head of one of the laboratories:

DF: One thing that I want to ask every scientist is how he or she defines race. KG: [laughs]

DF: And how you as a scientist explain the concept? KG: You know—probably I haven’t given that as much thought as I should have. But my guess would be—I mean my feeling ... of race ... [pauses for 14 seconds] ... versus ethnicity? Or just race? DF: Just race.

KG: [pauses for 2 seconds] DF: As you understand it. KG: My understanding of race is . . . is . . . and I don’t even know what the broad definition of race . . . what the acceptable definition of race is. But my understanding of race is that there are three major races—that

there's a Caucasian race, that that is a race—as opposed to European, OK. And there's an, an, an African race. And, um, and there is an Asian race. That is my understanding of race, that those are racial groups. Now are you going to ask me what characterizes a race? Are you going to ask me those kinds of things [laughing shyly]?

DF: No. Just in terms of the science that you do, how do you understand it scientifically? Does your science give you a certain vantage to understand race in a particular way?

KG: Oh, OK, yes. So there, I think there are populations that have been geographically isolated and then formed—have their own, over the years, have their own variants, SNPS, things that they carry within their own population because they were isolated from other populations that allowed these specific isolated populations to have their own— [well] share a common genetic make-up, but have their own particular variants that they carry within that population. So yeah, I guess I do see race as sort of a genetic definition. I certainly saw it when I started re-sequencing these genes. You do see very population-specific variants along with a background of cosmopolitan variants (Fullwiley 2007: 229).

This example shows quite clearly that the naturalization of the categories of race contaminates the scientific field with or without lobbies.

Another important example comes from policies put into place in the 1960s to combat a disorder known as sickle cell anaemia. Although it had been known since 1949 that this form of anaemia resulted from a genetic mutation transmitted by a recessive gene, it was still treated *as if* it were a disease associated with the black body, which had been the common belief ever since the condition had been first diagnosed in a young black Caribbean man in 1910. According to Melbourne Tapper and Keith Wailoo (Tapper 1999; Wailoo 2001), the U.S. government directed its programme towards the “black community” *as if* there had been no productive sexual encounters between people of distinct “races” in the U.S.

A similar programme surfaced in Brazil at the beginning of the 21st century with the introduction of affirmative action in favour of the “black population” that included interventions in the field of health. While in the U.S. Jim Crow laws never annulled sex between people of different origins, in Brazil relative permissiveness and even deliberate government policy has led to intense mixture of descendants of Amerindians, Africans and Europeans. It therefore came as something of a surprise to find that government-sponsored campaigns against sickle cell anaemia were included in affirmative action programmes for “the black population”, and that much of the non-medical side of the campaign was to be carried out by black activist organizations. Furthermore, while there was and still is little dispute over the basic black/white racial dichotomy in such societies as the United States, South Africa and the United Kingdom, Brazilian

society, like most of its Latin American neighbours, is much more complex.² While the official census divides the population into five categories (black –*preta*–, brown –*parda*–, white –*branca*–, yellow –*amarela*–, and indigenous –*indígena*–), day-to-day life is much less coherent or consistent. A plethora of terms are used for describing individuals and attributing identity on the basis of phenotype more than genotype, or on “mark” as opposed to “origin”, to use the terminology in a seminal article on this issue by Oracy Nogueira (2008 [1954]).

The sickle cell programme that has as premise a bipolar racial taxonomy may be interpreted as part of a growing tendency to *naturalise* a simple black/white dichotomy. While epidemiologists, sociologists, anthropologists, psychologists and their like recognise the social dimension of sickness, and while religious people, in particular the followers of the myriad possession religions in Brazil, may interpret the onset of affliction as due in part to divine retribution or the workings of sorcerers, most of these and the population at large also associate illness with things natural. To speak of “the health of the black population” is to posit (a) the existence of a discrete “black population” and (b) relate it to the natural order of health and sickness. It has the consequence of placing one of the rival taxonomies as part of the natural order of things, a fundamental *démarche* for the construction of its truth. (Durkheim and Mauss 1969 [1903]).³

Again we see science in action condoning the use of a category in health politics which science as theory denies. And on this point Brazil is again no exception. For some years now, since at least 2000 with the publication of “Retrato Molecular do Brasil” in 2000 (Pena, Carvalho-Silva et al. 2000), Brazilian geneticists have given a new legitimacy to the old Brazilian self-image as a society that developed out of the mixture of Europeans, Africans and Amerindians. More recently, J. Alves-Silva, Sérgio Pena and others have insisted on the fact that phenotype conveys little information about genotype (Parra, Amado et al. 2003; Pena and Birchal 2006). At least 40% of the genetic markers found in Brazilians who see themselves as white are of African origin, for example (Alves-Silva, Santos et al. 2000). Pena goes so far as to suggest that concepts of “race” should be entirely banned from the practice of medicine (Pena 2005). A research project among school children in Rio showed quite clearly that the way the children classified themselves and others in terms of their African, Amerindian and European ancestry did not correspond to the distribution of these three ancestralities as revealed by DNA testing (Santos, Fry et al. 2009).

2 For recent discussion on race and sex in Latin America see Wade, P. (2009). *Race and sex in Latin America*. London, Pluto Press, and Wade, P. (2010). *Race and Ethnicity in Latin America*. London, Pluto Press.

3 For a more details analysis see Fry, P. (2005). “O significado da anemia falciforme no contexto da ‘política racial’ do governo brasileiro 1995-2004.” *História, Ciências, Saúde*. Manguinhos V.12(2): 347-370.

So, to sum up, theoretical genetics denies the scientific validity of the concept of “race”, both in the U.S. and in Brazil. In both societies, however, “race” finds its way back through science in action, in pharmacology and in certain attitudes to treatment. In the case of the United States I argue that race creeps in through the back door, as it were, due to its status as a cultural “taken-for-granted” category, thus perpetuating the naturalness of the U.S. racial taxonomy based on hypodescent. The effect is therefore conservative. In Brazil, I argue, a bipolar racial taxonomy gains ground not so much from “tradition” as from a socially significant desire to reimagine Brazil no longer as a land of multiple racial categories but—in the image of the U.S.—as a society of distinct racial groups or categories. In this case, the effect is of change to the existing *status quo*.

Science and sexual orientation

As we know, the notion of sexual orientation and the definition of homosexuality and heterosexuality coincided historically with the rise of the modern concept of race. The term homosexual dates from 1869 when it was first used by an Hungarian medical doctor, Karoly Maria Benkert. The German lawyer Karl Heinrich Ulrichs, who wrote extensively between 1860 and 1890, preferred the term “Urning” for what he also termed a third sex. He took the term from Plato’s *Symposium*, in which same-sex Eros is said to fall under the protection of the ninth muse, Uranos. He claimed that *urnings* were natural due to their specific embryological development. In foetuses destined to become *urnings*, he argued, the sex of the body went in one direction and that of the mind in another. The fact that *urnings* were thus a product of nature meant that they should neither be held responsible for their desires nor criminalised for them.

Ulrichs developed a complex taxonomy, which was based on various combinations of psyche, anatomy and desire. They may seem strange, but they have survived more or less intact to our day in Western Europe and North America. I have included these terms in parenthesis. The *urningin* (*lesbian*) was the female-bodied person with a male psyche, whose main sexual attraction is to women. The *urning* (*gay, homosexual*) was a male-bodied person with a female psyche, whose main sexual attraction is to men. The *dioningin* was the term for a heterosexual and feminine woman, *dioning* a heterosexual and masculine man. He termed bisexuals *uranodioningin* (females) and *uranodioning* (males), while the term *zwitter* was applied to inter-sexed individuals. The *urnings* were divided into sub-types. The *mannling* (*butch*) was very masculine, except for his feminine psyche and sex drive towards the *weibling* (*queen*) who was feminine in appearance, behaviour and psyche, with a sex drive towards masculine men. The *manuring* was

feminine in appearance and behaviour, with a male psyche and a sex drive towards women. In addition, Ulrichs described the *virilisierte manning* as a male *urning* who had learned to act like a *dioning* and the *uraniaster* or *uranisierter mann* who was a *dioning* engaging in situational homosexuality (e.g., in prison or the military).

Thus, as Michel Foucault taught, it was not only heterosexuality or homosexuality (i.e., sexual relations between members of the same sex) that was at stake, but the definition of the personages involved: homosexuals, bisexuals, heterosexuals, etc., who emerged in scientific thinking just as for the science of criminology, the criminal became more important than the crime (Foucault 1977; Foucault 1984a; Foucault 1984b; Foucault 2004 [1975]).

Ulrichs' ideas have dominated Western European and North American common-sense and scientific discourse ever since. Other societies, however, provide us with diverse identity taxonomies, many of which ignore the category "homosexual." Let me take an example close to my home in Brazil.

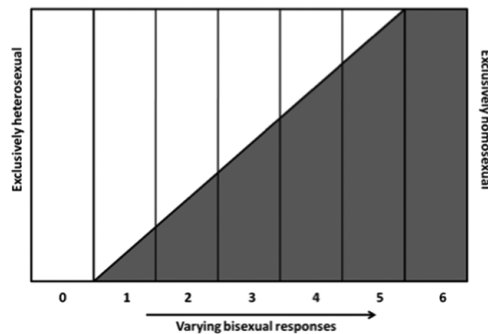
When I arrived there in 1970, I found that two taxonomies were present. While the standard Western European taxonomy seemed more or less prevalent among the urban middle and upper classes, another prevailed in what one might call "popular culture". There the term homosexual was almost absent since what seemed to interest people more than the sex of their partners was what they did with them sexually and how "masculine" or "feminine" they appeared to be. So, an effeminate male, who, it was assumed, enjoyed taking the "passive" role in sexual relations with a man fell into the category of *bicha* or *viado*. His partner remained simply a man or a real man (*bomem mesmo*). Similarly, females were divided into women, ladies, and the more masculine *sapatões* (big shoes) or *saboeiras* (soapers). The logic behind all this was that anatomy became more or less irrelevant in contrast with gender. Thus "appropriate sex" or "real sex" was that which occurred between a "female" and a "male," between a passive and an active partner regardless of anatomy. Sex between two *bichas* was regarded as deviant and the culprits called lesbians or ridiculed with the popular expression, "*bicha com bicha dá lagartixa*" (queen with queen gives you a lizard) (Fry and MacRae 1983; Fry 1995).

In everyday life, of course, the two taxonomies with their respective logics interacted and intermingled (as they still do) so that they can only be understood heuristically as ideal types. Furthermore, it goes without saying that one of the characteristics of this sexual/gender conundrum with quite severe rules is the ubiquitous "awareness" that "what goes on between four walls" is a always matter for beneficent or malicious speculation. Yet even these speculations reveal the solidity of the logic of the conundrum as a whole: surprise on imagining a burly football player "giving himself" to a transvestite, for example.

Furthermore, just as the Western European and North American racial taxonomy gains strength in contemporary Brazil, so does the Western European model of a world divided into homosexuals and heterosexuals together with the accretions of postmodernity. It is now politically correct to speak of “sexual diversity.” Gay is leaving the vocabulary and being replaced by LGBTT. Even so, the “basic” heterosexual/homosexual divide does not lose energy.

Going back now to the epigraph to this essay, it is interesting to note that although Kinsey was well aware of the importance of social classification in defining the “nature” of sexual orientation, he himself did not question the overarching significance of the heterosexual/homosexual dichotomy, so much so that he devised his famous continuum based on these two poles. Which pole was made up of goats and which of sheep is a moot point and depends surely on the degree of Kinsey’s own “heteronormativity!”

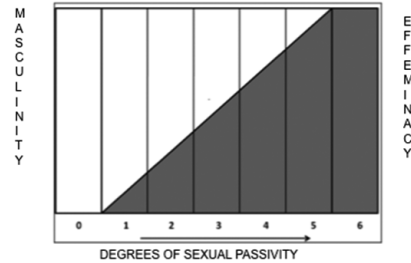
So along came his famous table, the Kinsey Scale:



As Kinsey wrote:

While emphasizing the continuity of the gradations between exclusively heterosexual and exclusively homosexual histories, it has seemed desirable to develop some sort of classification, which could be based on the relative amounts of heterosexual and homosexual experience or response in each history... An individual may be assigned a position on this scale, for each period in his life.... A seven-point scale comes nearer to showing the many gradations that actually exist (Kinsey, Pomeroy et al. 1949: 639, 656).

I sometimes like to imagine what would have happened if Kinsey had been Brazilian. He might have chosen a different continuum, between masculinity and femininity:



But he didn't. So again we see how cognitive orientations given by surrounding culture determine the direction of science and confirm that all is based in nature, albeit in Kinsey's conception averse to discrete categories.

As I suggested before, while "race" is denied as a concept by theoretical genetics, it surfaces as a taken-for-granted category in pharmacogenetics, and in specific public health programmes for "the black population." In the case of sexual orientation, what I have found is that the major effort of most science in this area is to investigate the "naturalness" of the homosexual/heterosexual dichotomy, although, as we shall see, the criss-crossing of gender and sexual orientation first proposed by Ülrichs continues to form another taken-for-granted premise. A homosexual orientation is often associated with a certain "femininity" among males and "masculinity" among females.

One way to demonstrate that homosexuality is natural is to observe "sexual relations" between animals of the same sex. A compendious tome has been published on the matter (Bagemihl 1999) and the Wikipedia entry is vast.⁴ In 2005, the Norwegian Natural History Museum mounted an exhibition entitled "Against Nature, an exhibition on animal homosexuality".

Another technique is to attempt to establish a correlation between sexual orientation and some other anatomical characteristic. Attempts to correlate sexual orientation with the direction of hair whorls failed, but a lot of ink has been spilt trying to show a correlation with the ratio of the length of the second and fourth fingers of the left hand (2D:4D):

First, homosexual males have lower left hand 2D:4D ratios than population norms and this appears to be the case after controlling for age, ethnicity and multiple tests. Secondly, within a sample of homosexual males, there was a positive association between 2D:4D ratio

⁴ http://en.wikipedia.org/wiki/Homosexual_behavior_in_animals (accessed on 32 January, 2011).

and SOS, that is, men who reported exclusive homosexuality had higher 2D:4D than those who reported some female partners or sexual fantasies concerning females (Robinson and Manning 2000: 341).

Then, by suggesting that these ratios are correlated with prenatal oestrogen, they claim: "If 2D:4D ratio is negatively related to prenatal testosterone and positively to prenatal oestrogen, our first finding suggests that male homosexuals experience higher testosterone and lower oestrogen in utero than population norms" (Robinson and Manning 2000: 342). So back we go to embryology with the relationship between gender and anatomy being defined not by female minds in male bodies (and vice-versa) but by an excess of a hormone associated with masculinity!⁵

A distinct technique which appears at first sight to be of a sociographic nature is to suggest a correlation between male homosexuality and birth order, male homosexuality tending to occur in men with two or more elder brothers. In an article published in the *Journal of Theoretical Biology* in 2004, we learn that "Males comprise roughly 50% of the human population. The prevalence of homosexuality in adult men is about 3%, and the fraternal birth order effect accounts for maybe 20% of them" (Blanchard 2004: 18). This idea has been replicated in Samoa and Santa Catarina! The highly tentative explanation for this effect takes it away from society and back to nature again:

[...] the fraternal birth order effect may be triggered when fetal cells (or cell fragments) enter the maternal circulation, an event especially common during childbirth. If these cells are from a male fetus, they may include substances that only occur in, or on the surfaces of, male cells. The mother's immune system recognizes these male-specific molecules as foreign and starts producing antibodies to them. Following maternal immunization, maternal anti-male antibodies are available to cross the placental barrier and enter the brain of a male fetus. These antibodies somehow divert the sexual differentiation of the fetal brain from the male-typical pathway, so that the individual will later be attracted to men rather than women. The probability—or strength—of maternal immunization increases with each male fetus, and therefore the probability of homosexuality increases with each older brother (Blanchard 2004: 179).

In this ingenious way, fraternal birth order is translated into prenatal events, positing the existence of anti-male antibodies. This time, there are no notions of "mind"

5 Marina Nucci, in a study of science and homosexuality, shows that throughout much of the experimentation male homosexuality is confounded with .feminacyale homosexuality is cnce asnd homosexuality shows that throughout much of the experimentation male homosexuality is ceffeminacy (Nucci 2010).

or “soul” as in the time of Ulrichs; instead, it is the brain itself and chemical effects thereupon. The logic, however, is basically the same. Male homosexuality is conflated with degrees of “femininity” introduced into the embryo.

The most important and publicly known research into the natural origins of homosexuality is the work of Simon LeVay. In 1991, he suggested a distinct configuration of the hypothalamus among homosexuals (LeVay 1991). Later, in 1993, E. Harner thought he had found a homosexual marker on the area Xq28 on the x chromosome (Hamer, Hu et al. 1993). Hence the notion of the “homosexual gene”.

The gene theory raises an obvious question. How could such a gene pass from generation to generation if, based on a strange understanding of homosexuality, it produces males who do not perform heterosexual intercourse? The answer lends credit to the creativity of the scientists! Simon LeVay suggests that it might be a recessive gene, like sickle cell anaemia or blue eyes, only producing homosexuals when inherited from both parents. As in the case of the sickle cell anaemia gene which provides a certain resistance to malaria, it is supposed that the homosexual gene must have some evolutionary advantage as well! By this *démarche*, homosexuality is both natural and of benefit to the evolutionary process. Perhaps that is why the gene theory found fertile ground in a certain variant of sexual politics, that which understands homosexual identity as universal and natural.

All these studies are in a sense tautological, since they start out with the premise that they intend to prove. Just as the subjects of the BiDil tests were “African-Americans,” a social rather than biological category if ever there was one, so the subjects of all the abovementioned experiments were classified by researchers as “homosexual” or “heterosexual.” Even when researchers were aware of Kinsey’s findings that the world could not easily be divided into sheep and goats, they discounted the intermediary identities as statistically irrelevant. Particularly revealing is a table published in Blanchard’s meta-study of the birth order hypothesis (Blanchard 2004: 174):

Table 1
Studies on birth order and sexual orientation in males, from the Clarke research program on
biodemographic correlates of sexual orientation

Authors	Description of the sample	N homosexual	N heterosexual
Blanchard and Bogaert (1996a)	American volunteers over age 18 interviewed by Alfred Kinsey and associates from 1938 to 1963 (see Gebhard and Johnson, 1979)	799	3,807
Blanchard and Bogaert (1996b)	Canadian volunteers	302	434
Blanchard and Bogaert (1998)	American sex offenders against adults, from earlier study by Gebhard et al. (1965)	156	173
Blanchard and Bogaert (1998)	American sex offenders against pubescents, from earlier study by Gebhard et al. (1965)	69	127
Blanchard and Bogaert (1998)	American sex offenders against children, from earlier study by Gebhard et al. (1965)	42	143
Blanchard et al. (2000)	Canadian pedophilic and hebephilic patients (men attracted to prepubescent and pubescent children, respectively)	65	152
Blanchard and Sheridan (1992)	Canadian outpatients referred for assessment of gender dysphoria (roughly, transsexualism)	193	273
Blanchard and Zucker (1994)	American volunteers from earlier study by Bell et al. (1981)	569	281
Blanchard et al. (1995)	Canadian child and adolescent outpatients, matched on age at presentation, sibship size, and year of birth	156	156
Blanchard et al. (1996)	Dutch gender-dysphoric patients, adult and adolescent samples combined	104	79
Blanchard et al. (1998)	British and American volunteers, from earlier studies by Siegelman (1972, 1973, 1974, 1978, 1981)	385	225
Bogaert et al. (1997)	Canadian pedophilic patients	68	57
Ellis and Blanchard (2001)	American and Canadian volunteers	175	971
Zucker and Blanchard (1994)	American psychoanalytic patients from earlier study by Bieber et al. (1962)	98	84

The elimination of Kinsey's continuum and the preservation of the hetero/homosexual dichotomy and the way in which pharmacological research conveniently "forgets" that a white/black dichotomy does not exist in nature, obey the same logic in relation to the persistence of the seemingly primordial male/female dichotomy, as Fausto-Sterling has argued. "While male and female stand on the extreme ends of a biological continuum," writes Fausto-Sterling:

[...] there are many bodies, [...] that evidently mix together anatomical components conventionally attributed to both males and females. The implications of my argument for a sexual continuum are profound. If nature really offers us more than two sexes, then it follows that our current notions of masculinity and femininity are cultural conceits. [...] Modern surgical techniques help maintain the two-sex system. Today children who are born "either/or-neither/both" –a fairly common phenomenon– usually disappear from view because doctors "correct" them right away with surgery. We may even say that these dichotomies are directly derived from the Culture/Nature dichotomy itself. (Fausto-Sterling 2000)⁶

Of course, for a British anthropologist trained by English devotees of Durkheim, Mauss and Hertz, it is impossible not to see in the case of race and sexual orientation the workings of arbitrary taxonomic systems which continue to dominate all spheres –not least biological science– the centre for research on what is natural.

This is not, of course, without political significance. Hertz showed that the inherent strength of the right hand tended to be exalted rather than reduced in favour of the left (Hertz 1909). Reading between his lines (after all he couples left and right to other dichotomies, such as male and female for example) it is reasonable to assume that he was suggesting that rather than succumb to "natural" inequality we may indeed combat it. Even if we did agree that certain desires might spring from our genes, we would still need to understand the meanings given to them by society and by science. By the same token, even if mainstream genetics tells us that race and sexual orientation are culturally and politically defined, we still need to understand why racism tends to be combated by racialism, thus perpetuating the cognitive orientations that give it its *raison d'être*; and why it is widely believed that part of the battle against homophobia is for its potential victims to celebrate a homosexual identity.

6 I am grateful to Verena Stolcke for having drawn my attention to this parallel.

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