

THE NATURE OF GENDER

THE PRIMATE GENDER THEORY

Let us take a closer look at a primate model of sex-dimorphic behavior and its possible application to humans. With this theory I can explain why males and females behave differently, why these differences have cross-cultural generality, why some males are more masculine than others, and why some females are more feminine than others. I cannot explain secular change; by agreement we stipulate that secular change is to be explained by social science theories alone. The primate model can explain only variance in a cohort. Our theory says that some particular behaviors are sensitive to hormonal influence, and others are not. It is not a historical accident or a random outcome that some behaviors are gendered, and others are not. We know which behaviors to examine for the hormone effects: gendered behaviors.

By 1970 a rather clear picture of the hormonal foundation for sex-dimorphic behavior had already been worked out for primates and other mammals (Goy 1970). For primates, the process operates in two stages. The first stage takes place in mid-pregnancy: male fetuses' testicles begin producing large amounts of testosterone early in the second trimester. This not only masculinizes their genitalia, but also masculinizes their brains by affecting the neural structure. By the third trimester, males have a different brain structure from females. This difference in brain structures predisposes males and females to different behavior, given the same environmental stimulus. Females receive very little testosterone fetally; what they receive comes from their mothers' blood, passing through the placenta. In the absence of testosterone, nature makes female genitalia and a female brain. Because the effects of the fetal testosterone reorganize the brain permanently, these are called organizational effects.

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The second phase is the development at puberty of further anatomical sex dimorphism, caused by the sex hormones of adulthood. These adult hormones not only cause anatomical changes but also act on the neural structures laid down during the prenatal period to produce adult sex-dimorphic behavior. The degree to which the adult hormones affect sex-dimorphic behavior is contingent on the degree of prenatal exposure to androgens (or male hormones), specifically to testosterone. The primary adult sex hormones of interest are also androgens—testosterone and androstenedione.

APPLYING PRIMATE MODELS TO HUMANS

A body of research on humans tests separate pieces of this theory; most of this work concerns clinical syndromes of hormonal anomaly. To greatly simplify this literature, it shows the following:

1. Human females exposed fetally to abnormally high levels of androgens show distinctly masculinized behavior beginning in childhood and extending through adolescence into adulthood (Ehrhardt and Meyer-Bahlburg 1981; Reinisch et al. 1991).
2. Girls who, because of a genetic anomaly, lack all sex hormones (even female sex hormones) grow up to be unusually feminine (Money and Ehrhardt 1972).
3. Females exposed as fetuses to physician-administered androgenic hormones for the mother's therapy show masculinized behavior in childhood, even though they show no masculinization of anatomy (Reinisch 1977).
4. Women with high adult androgen levels show masculine-skewed behavior,

as compared to women with low androgen levels (Purifoy and Koopmans 1979).

MY STUDY

I want to describe a project I conducted (with NICHD [National Institute of Child Health and Human Development] support), applying the primate hormonal model to predict within-sex patterns of gendered behavior among women.

To test this theory, I needed a sample of adult women for whom I had multiple measures of prenatal hormone exposure, a socialization history in childhood and adolescence, a measure of adult hormone levels, and measures of adult gendered behavior. . . . In the early 1960s, prenatal patients at Kaiser Plan facilities were recruited into the study. Each woman provided blood samples during each trimester of pregnancy. These samples were stored, and later were made available to researchers. For those giving birth from 1960 through 1963, the children and mothers were followed up with measurement and interviews at children's ages 5, 9-11, and 15-17. . . .

We reinterviewed about 350 female offspring when they were 27 to 30 years old. From 250 we took blood samples during a controlled period of their menstrual cycles and at a controlled time of day. During this interview, the women completed a self-administered questionnaire in which we obtained measures of their adult gendered behavior. This procedure gave us all the required elements of the needed research design.

Measurement of Gendered Behavior

We measured many different gendered behaviors on our respondents; we tried

to tap various domains of life and behavior manifestations. Our measurement technique was to identify a gendered behavior, identify the direction of difference between males and females, and call feminine high. Table 1 lists the measures of gendered behavior we obtained....

We have 19 measures of gendered behavior.... All gender components load on a common superfactor.... This finding is important, because it says that there is some overall consistency in the way individual behavior is gendered.

Results of My Study

... [F]indings are highly consistent with what we would expect from the theoretical foundations we started with.... We found gendered behavior correlations only to second-trimester androgens, not to first- and third-trimester androgens, just as predicted by the theory.... [W]e were able to confirm several very specific hypotheses concerning the specific hormones involved prenatally, the trimester of effects of prenatal hormones, the specific hormones involved in adulthood, and the interaction of adult with prenatal hormones.... We measured some other, hypothetically irrelevant hormones (such as estrogen) and found them to be irrelevant....

IMPLICATIONS OF BIOLOGICAL GENDER THEORY

To see what the theory means for social demographers and other social scientists, we invoke the corollary proposition: Those processes which affect within-sex variance in gendered behaviors are the same processes as cause between-sex differences. With increasing confidence we can now say that individual women differ in their biological propensity to

Table 1
Gendered Behavior Components

Ever married to a man
Number of live births
Index of Sex Role Orientation
Importance of career
Importance of children
Domestic division of labor
Sex-typed activities scale
Importance of marriage
Feminine appearance factor
Strong Vocational Interest Inventory
Likes baby care
Proportion female in current occupation
Featherman socioeconomic index
Proportion female in work unit
Bem Sex role Inventory, feminine score
Bem Sex Role Inventory, masculine score
Adjective Check List
Personality Research Form, masculine score
Personality Research Form, feminine score

sex-typed behavior. We can also infer that males and females differ from one another in their average biological propensity to the same behaviors....

Once these propositions are admitted, social science gender theories are in big trouble. Gender has biological foundations. We have become so immersed in our own social science theories of gender that we haven't thought seriously about confronting alternative theories. The closest we come to confrontation is to say that it is impossible for a behavior to have biological foundations while experiencing secular change at the same time. Most demographers are accustomed to thinking that the variables which predict individual variance also predict secular change. No such logical deduction can be made, however....

What does an admission of a biological basis for individual variance in gendered behavior *not* mean? It does not mean that social forces do not also contribute to individual variance. Social scientists, of all people, often think that if certain

behaviors have biological foundations, then those behaviors are foreordained, and there is nothing that society can do about influencing them....

Lay society has always taken it for granted that much undesirable behavior has biological foundations, but society has never believed that there was nothing to be done about it. The whole force of social institutions is designed to "trump" these "biological instincts." Parents have always believed that "natural instincts" produced adolescent sexual behavior, but they never accepted its inevitability. Likewise, laymen have always believed that behavior differences in the sexes were part of the natural order of things.

So now, given a sound understanding of the way in which both biological and social forces affect variance in gender, and given that only social forces may affect secular change in gender, we can ask about the fit between social forces and biological propensities.

When social scientists still believed in human nature, a hot topic was the fit between human nature and social structure. Our hypothetical gender structures are a way of talking about that fit. If our biosocial model is correct, then there is a human nature, and it is gendered. The permissive society allows a perfect fit to human nature. The traditional society provides a poor fit: it starts with a biological base and constrains humans to fit it. The unisex society starts with an ideology and constrains humans to fit it.

Let me be clear about my views. The future of gender in our society can, should, and will be determined by ideology. If we believe that one type of social structure is evil and another is good, then we must try to achieve the good one. On the other hand, if our theory

of gender is not correct, then we will not know how to achieve our goals.

I don't know how far society can differ from nature without encountering difficult problems of social control, but I never said that the goal of society was to make people comfortable. My goal is not to create happiness, but to fulfill our most worthy ideals for humanity. Human dignity may be achieved at the price of happiness. I emphasize that society has never hesitated to encourage behavior it thought unnatural (for example, celibacy), even at the cost of making people miserable. We have not always been happy with our success in controlling what we considered biologically natural but bad, but we have always considered the effort worthwhile, even if it was only partially successful.

Two general types of implications can be drawn from my propositions. The first is for programs of social change; the second, for demographic and social science research on gender.

First, in regard to programs of social change, we can identify two alternative agendas. First, society should provide gender-neutral opportunity structures. Naturally occurring variation in gender predispositions will determine how people take advantage of these opportunities. This is the permissive society that encourages the unfettered flowering of natural endowments and propensities. The second alternative is the degendering of society (Bem 1994). Those in favor of such degendering assume that gender-neutral opportunity structures would degender society, but degendered socialization is impossible because males and females respond differently to the same socialization. Gender-neutral opportunity structures will produce gen-

dered responses and therefore gendered societies. Degendering society will require compensatory gendered socialization and compensatory gendered opportunity structures.

The second type of implications from my propositions affects research. Demographers and social scientists continue to ascribe all gender findings to gendered socialization and gendered opportunity structures. Although this might be attributed to their desire to be politically correct, such attribution is an injustice to social scientists. They merely have an inadequate theory.

With an improved theory, the demographer and social scientist can see gender in new ways.

First, the existence of gendered social structure is not evidence for gendered behavior norms.

Second, gender norms may be consequences, not causes, of sex differences.

Third, the existence of gendered social structure is not evidence of sex discrimination.

Fourth, parental socialization may bear little responsibility for differences in gendered behavior.

Fifth, if demographers and social scientists don't want to tangle with biological predispositions in their models, they can focus on explaining social change and macrocomparative studies.

Now, I should add the warnings. Work on the biology of gender and how it can be integrated with the demography and social science of gender has just begun. My work is only another step. It needs to be replicated; it needs to be remodeled

and tested on males; other implications need to be examined. Demographers are not the most likely people to carry out this work. The empirical support or modification will accumulate only gradually. As we examine the issues further, they will always turn out to be more complicated than our simple models. Even so, we should not be surprised that our own human pattern of gender shares fundamental causes with the sex dimorphism of our animal relatives. The interesting questions will turn out to be not *whether*, but *how much*, and *in what ways*. There is nothing embarrassing about being a primate.

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NO

Will Roscoe

HOW TO BECOME A BERDACHE: TOWARD A UNIFIED ANALYSIS OF GENDER DIVERSITY

What has been written about berdaches reflects more the influence of existing Western discourses on gender [and] sexuality . . . than what observers actually witnessed.

Typically described, in the words of Matilda Stevenson, as men who "adopt woman's dress and do woman's work," male berdaches have been documented in nearly 150 North American societies. In nearly half of these groups, a social status also has been documented for females who undertook a man's life-style, who were sometimes referred to in the native language with the same term applied to male berdaches and sometimes with a distinct term. Although the existence of berdaches has long been known to specialists in North American anthropology, the subject has been consigned to footnotes and marginal references. In the past twenty years, however, berdaches have become a subject of growing interest. An expanding base of empirical data concerning the social, cultural and historical dimensions of berdache status has become available. . . .

* * *

Until quite recently, serious investigation of berdaches has been confined to the most basic problems of description and definition. Throughout five centuries of contact, a bewildering variety of terms has been employed by Europeans and Americans to name this status, with new ones introduced in almost every generation. Such practices have created doubt not only about the nature of berdache roles but also concerning their very presence in cases in which confusing terminology makes it difficult to know whether different writers were referring to the same phenomena. The difficulty is that Euro-American cultures lack social and linguistic categories that can translate the pattern of beliefs, behaviors and customs represented by North American berdaches. Instead, writers have chosen between mutually exclusive terms that emphasize either gender variation or sexual variation—"hermaphrodite" and "sodomite," for example, or, more recently, "transsexual" (gender) and

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