

**21A.240**  
**Race and Science**  
**Spring 2004 MIT**

**PART 1:**

**THE ALCHEMY OF RACE: MAKING AND UNMAKING SCIENTIFIC RACISM**

**Lecture 3. February 19**

I want us to look today at the rise of the concept of race – with THREE things in mind:

1. its transformation from a largely religious category — with origins in European Christendom — to a scientific category; we're looking at major shifts in racial formations.
2. the importance of sex, gender, and reproduction for the consolidation of "race" across both religious and scientific racial formations.
3. skulls.

What I want to do is explore this history of pre-scientific racial formation and early scientific racial formation with you with the aid of the articles we've read, taking them mostly in order, but also jumping back and forth a bit.

I'm going to start with a lecture, in which I will tell you about the invention of the concept of race in medieval Europe and how it gradually transformed from a religious category into one employed by scientists, or, as they were called natural philosophers.

**Blood, Sex, and Skeletons: Colonialism, Climatic Determinism, Cranial Capacity, and the Rise of Monogenist and Polygenist Scientific Racism**

**THE HUMORS AND GEOGRAPHICAL DETERMINISM**

In Medieval Christian Europe, it was believed that climate and geography could definitively determine people's constitutions and dispositions.

It was believed that there were four elements (earth, wind, and fire — and water) that corresponded to four humors — or fluids — in the human body: blood, phlegm, yellow bile (choler), and black bile. The proper balance of these humors would lead to proper temperament, but improper balance would lead to a person being more or less SANGUINE, PHLEGMATIC, CHOLERIC, or MELANCHOLIC.

**OVERHEAD 1: HUMOURS**

European natural philosophers believed that different PLACES in the world were more or less suited to having a balance of humors, and some places would tilt you way out of balance. People thought that Asia, for example, was

a place of melancholy souls, since black bile predominated in climates that were cold and dry like the Asian steppes.

Since the Europeans thinking about these things were medieval Christians, it is not surprising that they thought the perfect climate was to be found in the Garden of Eden, from which humanity had been exiled after the sin of Adam and Eve.

The prevailing belief was that as people had moved away from Eden they had DEGENERATED; their humors had been thrown out of whack. SOME places, like ancient Greece, approximated Eden more closely than others. People from these climates could try to reapproximate a close-to-God state. Some places were lousy and the people who lived there were lazy or mean.

This whole cluster of beliefs is called GEOGRAPHICAL DETERMINISM

Now when Europeans came upon the Americas, there was a huge question to be answered about who exactly the native people were and what they were like. Was the so-called New World similar to Eden? Or was it a horrible hellish place?

There was lots of controversy about the humoral balance of the indigenous people of the Americas. And the Americas were a key place for the development of RACE.

### **PURITY OF BLOOD AND LINEAGE THINKING**

How did people come to believe that humoral traits could be INHERITED? Stay in Europe with me for a moment. King Ferdinand and Queen Isabel's Castilian Empire on the Iberian peninsula in the 1500s. You may be familiar with this today as SPAIN.

In the 1500s, Iberians were obsessed with an idea that they called PURITY OF BLOOD. And this was about *religion*.

Christians who could trace their lineage back to other Christians were said to be pure of blood; recently converted Christians whose ancestors were Jewish or Muslim were suspect — could not be trusted to hold royal or clerical office; this was a legacy of the Spanish Inquisition. Those who were impure of blood were prevented from holding office, marrying Christians, and in many cases from *traveling to the Americas*.

Why BLOOD?

Blood was not just one of the humours, but was the substance that people believed carried heritable social characteristics down the generations. The "proper" flow of blood, in proper families, was felt to reproduce new people in proper places in the social order, in the social body.

This idea was transferred to the *Americas*.

But, *now*, geographical area became important. For the SPANISH COLONISTS there were three primary areas from which people could originate: EUROPE (Christendom),

AMERICA, and AFRICA — and so there were three major RACES of concern to them, which they called ESPANOL, INDIO, and NEGRO.

By the end of the 1500s in the Americas, there had been intermarriage and mixture along with conversion to Christianity and the category that was of real concern was MESTIZO.

Mestizos —people who were the offspring of Spaniards and Indians [as they were called (remember, because Columbus was lost!)] — held positions of power, but there was a big question among colonial rulers back in SPAIN about whether they could be TRUSTED.

It was all about holding colonial office and being loyal to the people back in Spain. People who were too mixed might not be loyal. And that meant that colonial officials had to figure out what to do with them. So, people were categorized by LINEAGE. BLOOD was the symbol of FAMILY and LOYALTY. CATEGORIES of INTERMIXTURE

So now the earlier GEOGRAPHIC DETERMINISM — with EUROPE, AMERICA, and AFRICA as the primary places of origin joined PURITY OF BLOOD. And racial categories proliferated. RACE itself came into existence. One etymology for the word, in Spanish, is RAZA.

RAZA is from an old Spanish word, which initially referred to noble ancestry, though some say this meaning was later brought into juxtaposition with an older Castilian (Spanish) word which meant *defect*.

The word "race" has been variously traced to the Latin ratio ("reason") or radix ("root"), and to the Hebrew for "head" or "origin," ras. Cf. Leo Spitzer.

a. F. race, earlier also rasse (1512), a. It. razza = Sp. raza, Pg. raça, of obscure origin.

In the context of the religious concerns of Inquisition Spain, where Jewish or Muslim ancestry was considered a "defect," these meanings came together to make race about religious heritage.

RACE itself came into existence as a SOCIAL CATEGORY.

New Spain went crazy for race, for classifying everyone. I have some paintings here from the 1700s, which depict all the categories, and what happens when they mix.

## **OVERHEAD 2: CATEGORIES OF INTERMIXTURE**

You might not be surprised to learn that ideas about GENDER were implicated in these ideas about PURITY OF BLOOD

Women and men were positioned differently in the social system.

One Spanish Jurist put it this way:

"only women can bring bastards into the family" Why would that be? What kind of family is being talked about here?

Because, in this system, women come into men's families through marriage, not the other way around. Women were considered the ones who could pollute the family line (while men could get mistresses pregnant, etc. without it reflecting on their family).

this is a patrilineal patriarchal system

So, control over women was key to maintaining "purity of blood."

"Whenever social position in a hierarchical society is attributed so-called racial and hence allegedly inherent, natural, and hereditary qualities, it is essential to control the reproductive capacity of its women in order to preserve its social preeminence." (p. 285).

This quotation is from

Stolcke, Verena. 1994. *Invaded Women*. In *Women, "Race," and Writing in the Early Modern Period*. Margo Hendricks and Patricia Parker, eds. London: Routledge, 272-286.

in this system *WOMEN have to SAFEGUARD RACIAL IDENTITY—potential traitors*  
*MEN control WOMEN; men as paragons of racial identity*

I would add that it's with respect to particular kinds of ideas about paternity and maternity and family; i.e. one in which men confer identity through their name (even as there is a sense of physical inheritance through both lines). IT'S NOT NATURAL! "Bastard" is NOT a NATURAL category!

So, let's pause: what is the racial formation here? representation and organization?

Representation: through religion, with the humours, and ideas about men and women's roles in social reproduction.

Organization: a social hierarchy based on the religious past, the control of women by men, and geographical provenance of lineage.

## **LINNEAUS AND THE FOUR FIXED RACES**

Back to Europe, where natural philosophers had continued their theories of geographical determinism.

The founder of modern taxonomy, the Swiss naturalist Carl Linné — also known as Linnaeus — is important here.

In 1758, Linnaeus wrote *Systema Naturae*, in which he came up with the system of binomial naming — the designation of organisms by Latin genus and species name (like *Homo sapiens*, which he coined; and this is also, by the way, why Linné changed his name to Carolus Linnaeus, to fit into his own system. Wacky guy.)

Linnaeus sought to classify human *varieties* in this book — and he came up with four:

### **OVERHEAD 3: LINNEAUS' FOUR RACES AND THEIR CHARACTERS**

EUROPEAUS	sanguineus
ASIATICUS	melancholicus
AMERICANUS	cholericus
AFER	phlegmaticus

Now, even though Linnaeus has bequeathed to us the naming system used in modern evolutionary biology, Linnaeus *himself* was a creationist and believed that these four categories had been created by God and that they were unchanging, fixed types (he was a POLYGENIST [believed in “many origins”]). As you read in the Hudson piece, online, Linnaeus’s rival Buffon was largely responsible for beginning to use the word “race” in this kind of classification.

And Linnaeus explicitly assigned to the different varieties different temperaments, reaching back into the theory of humors. Europeans were sanguine, Asians were melancholy, Americans were choleric, Africans were phlegmatic. So, four geographic regions, four humors, four races.

### **BLUMENBACH, THE FIFTH RACE, AND THE FAMILY TREE**

One of Linnaeus’ students, Johann Friedrich BLUMENBACH elaborated this system in 1795 in his book *On the Natural Variety of Mankind*, and he renamed the European as CAUCASIAN. WHY?

On the basis of a new feature: the SKULL; less mutable, he thought.

Blumenbach, also a creationist, thought that the most perfect skulls belonged to people from around Mount Caucasus in what is now the nation-state of Georgia, in the former Soviet Union (which he identified as part of Europe). These were the CAUCASIANS. He said of one female skull found in Georgia: “really the most beautiful form of skull which ... always of itself attracts every eye.”

Blumenbach reasoned that because these skulls were the most beautiful, they must be a direct line to the first, perfect humans, Adam and Eve. Blumenbach believed that the Garden of Eden was near Mount Caucasus.

After Adam and Eve got kicked out of Eden, their children diversified into the different races and some, according to Blumenbach, DEGENERATED — in two *BAD DIRECTIONS*: ASIAN/MONGOLIAN and AFRICAN/ETHIOPIAN; and, Blumenbach believed, AMERICANS were intermediate between CAUCASIANS and ASIANS, and a new category — which Blumenbach invented because he needed an intermediate form — the MALAY, were halfway between CAUCASIANS and AFRICANS.

### **OVERHEAD 4: BLUMENBACH'S FIVE RACES**

So, suddenly, with FIVE RACES, the idea of the four humors goes away.

We get the image of a FAMILY TREE — with some branches reaching up and others straggling off to the side.

FAMILY TREES would become the preferred image for thinking about human history, especially among people who subscribed to a MONOGENIC view of human origins.

### **MONOGENIST DEGENERATION**

This idea that some peoples had degenerated from a pure original form continued into the 1800s, even as many natural philosophers began to abandon the Bible and adopt Darwin's theory of evolution. That is, the idea survived from being a religious one to becoming scientized.

The old racial categories and ideas about inferiority continued. The idea was that some groups of people had been stunted, evolutionarily speaking. Adult Africans were like white children, for example. The idea was that some groups had EVOLVED MORE.

Discussions of race move from humours to skulls.

Schiebinger, Londa. 1993. Theories of Gender and Race. In *Nature's Body: Gender in the Making of Modern Science*. Boston: Beacon Press, (pp. 143-183).

We begin to see a shift from explicitly religious ideological warrants for "race" to ones that make use of natural philosophy and the beginnings of what would come to be called "biology." We've still got lots of ideas about a created world, even as we see the first hints of a concern to assess human difference through MEASUREMENT.

Schiebinger shows that Europeans had begun to rank the "races" that were being consolidated by colonialism on the great chain of being (scala naturae; Linneaus was into this), making use of an existing epistemology in Christianity, and they sought to buttress these claims with reference to measurements of skulls, pelvises, etc. She also argues that this work was done in the context of struggles over political participation.

In the context of discussion over the "natural; rights of men" the exclusion of some people from these rights demanded "proof of natural inequality" — and science obliged.

The first section of this chapter is called "Were women on the chain?"  
The great chain of being. What does Schiebinger mean?

She says: "notions of racial and sexual relations rested on contradictory visions of nature" (p. 146). How? (race: unilinear; sex: oppositional)

implications? SKULLS versus PELVIS; BRAIN versus GENITALS

theories of Race were almost always developed by looking at male bodies (skulls in particular)(and skulls [the seat of reason] were used to make the great chain of being; using indices of prognathism)

theories of Sex usually with respect to contrasts between women and men *within* their racial group, and almost always with respect to Europeans

when women WERE compared across racial lines, it was always with respect to their sexual anatomy (particularly breasts and pelvis)

(I once heard Stephen Jay Gould remark that he'd seen collections of great men's skulls in Europe, but never their penises).

How did pelvises (pelvis?) enter into the story? (pp. 157-158). First they were problematic (Africans' appeared larger? ease of parturition), then they were tamed ("Ease of parturition no longer suggested a larger African pelvis, but a smaller African skull" [p. 158]). Finally they were used to solidify racial chain of being. But note what has to happen here — one must START with assumptions about the skull...

So, again, how did women fit on the chain?

"Women and Africans were seen as sharing similar deficiencies when measured against a constant norm — the Elite European man" (158). prognathism, for example. Stepan's argument (1986 ISIS) detour.

Stepan, Nancy. 1993. Race and Gender: the Role of Analogy in Science. In The "Racial" Economy of Science: Toward a Democratic Future, Sandra Harding, ed. Bloomington: Indiana University Press, (pp. 359-376).

metaphor in science; analogy. What's the argument here?

that scientific description, often thought to be dispassionate and objective, often makes use of metaphors and analogies: "the metaphors functioned as the science itself; without them the science did not exist" (p. 364).

white women and non-white men: feminine, juvenile, smaller heads

Darwin says "The female, in the formation of her skull, is said to be intermediate between the child and the man" (p. 317).

"established as signs of inferiority, the facial angle ... could be then be extended analogically, to explain other inferior groups and races" (p. 363)

Schiebinger *adds a step to* Stepan's argument, though: "This assessment (p. 158), however, does not take into account the contrasting ways in which European naturalists described women of different ethnic and cultural backgrounds."

Schiebinger is arguing that "females in general were considered a sexual subset of their race; unique female traits only served to confirm their racial standing" (p. 160).

While Stepan's argument makes sense of some persistent regularities in European racial science, it also assumes that the metaphorical grid within which things are seen is relatively airtight and self-consistent. It may not be.

Schiebinger uses the story of Sarah Bartman — the so-called Hottentot Venus — to illustrate the ways that racial and sexual traits were crafted in concert.

*What is the story here, and what can you say about it in terms of race and gender ideas of Europeans at this time?*

"doubly determined that the focus would be on sexuality." climatic determinism survives: "African labia and breasts ... one writer said ... became enlarged and elongated in the same way that the flora of that continent grew large and fleshy in its extreme heat" (p. 171).

says more about the fantasies of European men; assumption that this person was a "type"

I think part of what's important about this is that the origin of RACIAL categories absolutely must be understood in the context of GENDER and COLONIALISM.

Gould, Stephen Jay. 1993. American Polygeny and Craniometry before Darwin: Blacks and Indians as Separate, Inferior Species. In *The "Racial" Economy of Science: Toward a Democratic Future*, Sandra Harding, ed. Bloomington: Indiana University Press, 84-115.

this is about pre-evolutionary scientific racism.

what are polygeny and monogeny?

polygeny (separate creations: Aggasiz)

Aggasiz, abolitionist but polygenist racist, opponent of evolution  
what is the relation between religion and science in his work?

Samuel George Morton: craniometry and cranial capacity  
though Morton seemed to tamper with his data, Gould says that he had not committed fraud. Why?

an older tradition of skull stuff is alive here.

Gould goes through Morton's data, arguing that it was not conscious fraud, but that he was led to choose particular kinds of measurements:

(how has Gould used racial categories in his own reanalysis on page 105? (is he saying, OK IF you accept these categories...?) corrections for body weight, sex (he seems to take sex for granted!), sample size, etc.)

note how race is sexed/gendered in the pronouncements of the people Gould cites ("effeminate" races) and how this is in turn scientized.

primarily a creationist position. races are separately created species. proof? look at FORMS. Since forms are unchanging over time, this is the place to look. Skulls.

Monogeny: everyone has common ancestor.



Although both monogeny and polygeny started out with an appeal to religious doctrine, polygeny was the far weaker of the two, because the idea of separate origins went against scripture.

But, as you see, a racist commitment to insuperable racial difference could easily be accommodated in monogeny. How?

some groups have DEGENERATED

religious warrant?

climatic determinism, movement away from Eden

scientific warrant?

climatic and geographic dispersal (Blumenbach)

some groups were stunted: the theory of recapitulation (Adult blacks were like white children, Asians like white adolescents...) i.e. some groups had EVOLVED MORE: here you get the FUSION of the CHAIN OF BEING AND THE FAMILY TREE (PICTURE)

Here's a family tree from the late 19<sup>th</sup> century.

Family tree started to get used in EVOLUTIONARY THEORY, particularly by DARWIN.

WHAT SORT OF FAMILY IS THIS?

WHAT ARE THE ROLES OF MEN AND WOMEN IN THIS FAMILY?

AND HOW DO WE UNDERSTAND DIFFERENT "RACES" IN THE FAMILY IDIOM?

Darwin, Charles. 1871. *The Descent of Man and Selection in Relation to Sex*. Princeton: Princeton University Press, 1981, (pp. 214-236, 240-250, 316-329, 381-384) – SKIM

Fedigan, Linda Marie. 1986. Biological Evolution in the Nineteenth Century, from *The Changing Role of Women in Models of Human Evolution*. *Annual Review of Anthropology* 15: (pp. 25-66). -- READ ONLY (pp. 27-29).

#### GROUP ACTIVITY

Now we get to the major figure in biology: Darwin. Darwin's theory of evolution by natural selection is founded on a monogenist view of organic history, and no less so when he forwards his theory of the evolution of humans. And it's a theory about PROCESS rather than types (ultimately, one might argue, it is this process logic that people later use to demolish race as a scientific category, but we're getting ahead of ourselves here).

What I've excerpted here is stuff from *Descent of Man*, Darwin's attempt to apply his theory of evolution to humans.

We want to think about what RACE was for Darwin. Any starts?

(p. 216: differences)

(p. 226: lots of slippage into species. It's almost as though race and species are sometimes synonymous; he also throws in subspecies [p. 227])

Where does Race come from?

sexual selection as a major process: quote page 250.

How does this work? Let's unpack it.

first, what is sexual selection?

selection to account for secondary sex characteristics in males and females

"struggle between males for possession of females" (pp. 87-90); basically, male competition and then female choice

"competition, Darwin believed, generally occurred between males for access to female mates, and choice, he reasoned, was exercised by females from among the male mates available to them" (Fedigan: p. 27)

An interesting entailment of the way Darwin framed things was that natural and sexual selection seemed *only* to be acting on males: "competition selected for male armaments (size strength weapons) and choice selected for male ornaments (colors, elaborate headdresses, beautiful voices)" (Fedigan: p. 28). Female traits seemed to occur in the absence of natural and sexual selection.

But, as Fedigan notes, Darwin later contradicts this theory when it came to humans. In humans, Darwin argued, females were chosen by men after their competition and fighting. Basically, then, men operated in the realm of natural selection and sexual selection, and women were subject only to the less rigorous forces of sexual selection, which just selects them to be pretty. In a way, you might say that, in Darwin's theory, women are selected to give birth to the men who are doing all the evolving through natural selection.

"Darwin helped to pioneer what I call the coat-tails theory of evolution: traits are selected for in males and women evolve by clinging to the coat-tails of men" (Fedigan: p. 29).

Darwin: "Thus man has ultimately become superior to woman. It is indeed fortunate that the law of equal transmission of characters to both sexes prevails with mammals. Otherwise it is probable that man would have become as superior in mental endowment to woman as the peacock is in ornamental plumage to the peahen." (Fedigan: 29).

The *Descent of Man's* title should be taken literally! THE FAMILY TREE IS A BUNCH OF MEN!

Now, what does all this mean about race? And can we make links back to the previous authors?

well, he says "secondary sex characteristics differ much in the several races" (p. 320). WHY?

PAGE 325 quote: "there can be little doubt that the greater size and strength of man..."

PAGE 327: "the half-human male progenitors of man, and men in a savage state, have struggled together for many generations for the possession of females"

What is the importance of this "possession of females"? what sort of relationship does it put women and men into? passive female sexuality, active male sexuality

females become the conduits for males to pass on the traits they have accumulated from natural selection and from competition with one another for females.

Key quote page 328: The higher powers of the imagination as well as persistence "will have been developed in man, partly through sexual selection — that is through the contest of rival males, and partly through natural selection — that is from, success in the general struggle for life; and as in both cases the struggle will have been in maturity, the characters thus gained will have been transmitted more fully to the male than to the female offspring. Thus man has ultimately become superior to woman." (p. 328)

So, racial difference, for Darwin, where does it come from?

in part from the persistence and imagination of males of a particular group, as well as their choice of attractive female characteristics!

problem with Darwin's argument: takes for granted what it wants to prove! assumes racial dispositions in order to show how they've evolved!

but still, females must be "possessed" (i.e., their sexuality controlled) in order for these traits not to be diluted, especially since, because of the law of equal inheritance, they also obtain them (coat-tails). The racial identity is passed on through agency of males in control of females. This naturalizes the idea of patriarchy and makes it part of some of the earliest evolutionary attempts to theorize race.