**Racial Classification in Medical Science**

*Approximate transcript of lesson video*

This lesson will use insights from philosophy of science to explore issues raised by the use of racial categories in medical science.

To begin, let’s distinguish *natural sciences* and *social sciences*. Philosopher of science Peter Caws characterizes the distinction as follows: natural sciences study natural structures, whose reality is independent of human minds. Human beings can talk about a glucose molecule, but the molecule could exist in the same way even if none of us ever did.

Social sciences study *intentional* structures. An intentional structure is real only *through* human minds; they are both produced and then sustained through what human beings think about them and say about them—through human attitudes, feelings, and actions. The reality of intentional structures thus depends on how human minds relate to them, and because of that, human agency can transform intentional structures.

To illustrate, we might say that XX and XY chromosome pairings are natural structures: even if scientists never had discovered them, they would function in the same way that they do in a world where there is scientific knowledge about them. But gender, we might say, is an intentional structure: the way that human communities use categories like boy, girl, woman, or man is capable of changing as we change our attitudes and thoughts about what gender is.

So, social sciences like anthropology, political science, and sociology study structures that only exist because human beings invent and sustain them by how we think and act. So, if we take any object, a natural scientist might study its physical and chemical properties, but not what it *means*. A social scientist generally will ignore its physical and chemical properties and study what it means to human communities or how those meanings brought it into existence.

So, let us now turn to *race*. Social scientists commonly study race, examining it as a social phenomenon that often reflects and/or causes observed differences between people in social and political attitudes, religious practice, wealth and income, experiences of the legal system and law enforcement, and so on.

Social scientists typically, though not always, employ many of the same racial categorizations people use in everyday speech. Native American, Black, African-American, Latino/Latina/Latinx, Hispanic, white, Caucasian, Asian, Asian-American, Pacific Islander, etc. are all terms one regularly finds in social scientific research. These terms capture and reflect social realities, speaking to what is meaningful to the communities under study, and in contexts where these meanings in turn have far-reaching consequences.

But social scientists often *also* pay attention to how these categories came into existence. They often acknowledge that people *could have* drawn those categories differently—or not drawn them all. Racial categorizations vary heavily in different regions, languages, and countries, reflecting how specific histories of domination, colonialism, and enslavement created different ways of categorizing human beings. In the U.S. and Europe, for instance, whiteness tends to be defined racially in terms of having *only* European ancestors. But it is quite common that people of African descent will be categorized as Black regardless of what degree of African descent they have: people with one parent categorized as white and another categorized as Black are typically categorized as Black, but only occasionally as multiracial and almost never as white.

This suggests that “Black” is an intentional structure: choices human minds make about what it means to be Black play a much larger role in distinguishing Black people from white people than do genotypical differences. This isn’t to say that there aren’t genotypical differences between any given white person and any given Black person: but excluding identical twins, there are also genotypical differences between any two white people and between any two Black people.

Does race being an intentional structure mean it has no business in natural science? Among contemporary biologists, the concept of race is generally rejected. Most biologists agree there is no causal correspondence between the racial categories human beings use and dictating specific observed traits. This isn’t to say that there are no correlations. For instance, sickle cell trait is demographically more common among those categorized as Black. But not all of those categorized as Black have sickle cell trait, and many of those not categorized as Black do have sickle cell trait. For many biologists, whose point is to study the natural structures that make us what we are, bringing our social categories of race into the topic is a distraction and distortion.

However, the skepticism about racial categories among contemporary biologists has not necessarily informed scientific practice in all adjacent scientific fields. In particular, we can point to prevalent usage of racial categories in medical science and medical practice. If we start with the assumption that medical science is natural science, this might seem confusing: why would medicine lag behind biology in this area if we might think of medicine as being something like applied biology?

A complicating factor is that medical science may not *purely* be natural science. When medical researchers observe health outcomes, are they just studying how one set of natural structures interacts with another? Or, are they studying something that involves an *interaction* between biochemical realities and *social* realities? If intentional structures—like feelings of stress or isolation—can impact health outcomes, then can we understand such medical research as *only* studying natural structures?

It is common for medical research to attempt to control for social factors as *variables*. However, reliably formulating control values is a task that couldn’t be done on the basis of natural science alone: it would require a high degree of *social* scientific precision, something many scholars argue that medical researchers often haven’t been trained to achieve. This creates a context in which medical research may believe it has arrived at *biological* conclusions about racial differences where it might be the case, instead, that social factors alone account for observed differences.

Let us consider two examples.

The first is that of hemoglobin levels, which are used in diagnosing anemia and iron deficiency. In the 1990’s, some scholars consistently observed lower hemoglobin levels among Black study populations and argued that these lower hemoglobin levels weren’t always associated with symptoms of anemia. Some concluded that anemia was over-diagnosed among Black populations, and it became common practice to use lower hemoglobin cutoff points for deciding when to treat iron deficiency in Black patients.

Second, in neuropsychology, it has long been commonplace to compare measurements of cognitive functioning against baselines adjusted for age, sex, and education. After some researchers argued that cognitive impairment was over-diagnosed among Black people because of failure to use proper baselines, the use of race-based norms in cognitive testing became commonplace.

It is understandable why, given observed variance between populations according to racial classification, researchers sought to adjust their findings in each case to account for race. However, the use of such adjustments may be prone to a variety of mistakes, many of which may relate to confusing *social* causes with *biological* causes; social environments that reduce Black access to medical treatment, quality food, and education, are likely causes of population differences observed in the aggregate.

Here it is important to keep in mind that these baselines are established on the basis of *correlations*, without clear findings of biological *causation*. Thus, while often presented as if expressing *natural* differences between members of different races, there can still be significant *social* causes that researchers fail to disaggregate from possible natural ones in arriving at racially-differentiated baselines. And even where these baselines might reflect biological differences, since they work at the aggregate, they can mask considerable biological variation *within* racially-categorized populations. In other words, even if there are biological reasons why *some* Black people can have lower hemoglobin levels without developing anemia, it does not follow that this would be true of *all* Black people.

In these examples, the use of racial-adjustments appeared to cause significant harm. Because pregnancy and childbirth intensify the causes and symptoms of iron deficiency, the use of lower hemoglobin cutoffs for Black patients has led to them less often being prescribed iron supplements. Many argue that this is a contributing factor to vast racial disparities in maternal morbidity and mortality.

When the NFL settled a lawsuit with former players over its role in misleading them about the neurological risks of playing football, they included language requiring race-normed cognitive testing to determine who would be entitled to extra medical and financial benefits. Hence, if one white former player and one black former player had the same neurological symptoms, the white former player would often be entitled to extra benefits while the Black former player would be denied those benefits.

In these cases, racial adjustments to data may have had a sound basis in observed correlations, but treating these observations as if universally applicable to all members of a racial category and as if medically relevant in all circumstances exacerbated existing social disparities rather than addressing them.

We might conclude that when medical science brings racial categories to the table, it becomes easy to falsely conflate correlation with causation. Some of these correlations may owe to poorly understood social causes that if properly understood would negate assumptions about biological differences between populations. Other correlations might possibly reflect biological causes, but those biological causes likely will not *uniformly impact* those within a given racial category.

In using racial categories in medical science, humility is needed. Jumping to conclusions about biologically significant forms of causation may involve hasty generalizations that misunderstand the social construction of these categories and significant genetic diversity within these categories.

This suggests that the best ways of integrating racial categories into medical science involve going beyond natural scientific paradigms so that researchers pursue social scientific rigor and employ critical thinking in considering the limitations of their assumptions.