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What are we to make of the concept of race? Thoughts of a philosopher–scientist

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ABSTRACT

Discussions about the biological bases (or lack thereof) of the concept of race in the human species seem to be never ending. One of the latest rounds is represented by a paper by Neven Sesardic, which attempts to build a strong scientific case for the existence of human races, based on genetic, morphometric and behavioral characteristics, as well as on a thorough critique of opposing positions. In this paper I show that Sesardic's critique falls far short of the goal, and that his positive case is exceedingly thin. I do this through a combination of analysis of the actual scientific findings invoked by Sesardic and of some philosophical unpacking of his conceptual analysis, drawing on a dual professional background as an evolutionary biologist and a philosopher of science.

1. Introduction: the never ending debate

Scientific and philosophical discussions about the existence and meaning of human races have been going on ever since there have been science and philosophy (James, 2008), and they will likely—one might add, unfortunately—never end. Nonetheless, it is instructive to look at new arguments and new empirical evidence whenever these are presented, if nothing else in order to clear once again the air from misconceptions and ill-founded notions.

I also think that debates about race are an excellent example of the fruitful interaction between philosophy of science and scientific practice (Pigliucci, 2008), though of course contributions from additional allied fields, such as the sociology and the history of science, are just as pertinent. Clearly, talk of race has to be grounded in the relevant empirical evidence, which certainly makes it at least partially the domain of science. However, the concept of race itself has changed over time, it is being deployed differently by biologists working in different areas (e.g., human vs other animals vs plants), and it can be unpacked in different ways—all of which makes it germane to history, sociology and philosophy of science. Moreover, there is the issue of the epistemic warrant of claims made about races on the basis of the available scientific evidence, as well as questions about how (and even why) said evidence is being gathered, again issues with which philosophers are arguably more familiar than the scientists themselves.

The topic of race is obviously huge, so in order to ground this discussion I will provide an in-depth analysis of a recent paper by Sesardic (2010) which presents us exactly with all the issues mentioned above. Sesardic is a philosopher, and takes the somewhat controversial position that the biological concept of human race has been "socially destructed" by misguided scientists and philosophers, who have yielded to political correctness. Sesardic appropriately builds his case through a combination of philosophical criticism of recent positions and an appeal to the most up to date empirical evidence coming out of both human genetics and anthropometrics.

In the following I will therefore take on Sesardic's major points and discuss both their philosophical and scientific validity, drawing on my experiences as both an evolutionary biologist and a philosopher of science. I will attempt to show that while Sesardic does make some interesting points, his philosophical analysis, and—more to the point—his interpretation of the science, is fatally flawed. I will then provide a brief discussion of the usefulness of these debates, building on an unusual exchange published in *Nature* by Steven Rose on the one hand and Ceci and Williams (2009) on the other, essentially asking the hard (and I'm sure academically

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unpopular) question of why exactly we should even continue to have this debate.

2. Criticizing the critics

Sesardic begins his assault on the alleged social destruction of race by claiming that a number of people have essentially defined the concept away, beginning with Naomi Zack's (cited in Sesardic, 2010, p. 145) assertion that "(1) races are made up of individuals sharing the same essence; (2) each race is sharply discontinuous from all others..." He then goes on to attribute similar essentialist straw man arguments to a number of authors, including Sally Haslanger, Philip Kitcher and Anthony Appiah. He also throws a few biologists, such as Luca Luigi Cavalli-Sforza, into the mix for good measure.

Sesardic is surely correct that if the criteria for recognizing races (and many other biological entities, for that matter) were based on a strict understanding of essentialism (i.e., where essences are defined by a small number of necessary and jointly sufficient conditions) then no way to make sense of it could be found within the framework of modern biology, and all discussion would halt at the starting gate. (Although it needs to be noted that, ironically, there has been a resurgence of essentialism *broadly construed* in the philosophy of biology recently, particularly with respect to species concepts: LaPorte, 2004; Ereshefsky, 2010.) Indeed, he is right on both his baseline criticisms of the critics of race concepts: (a) races (may) make biological sense even though there is no "essence" (*sensu stricto*) defining them; and (b) in order to agree that races exist we do not need to find sharp boundaries distinguishing one race from another, just as sometimes there are no sharp boundaries between species, pretty much regardless of which particular species concept one adopts.

Of course, none of the above amounts to anything like a positive defense of the meaningfulness of the concept of race, which is why we need to turn to Sesardic's three-part treatment of human races, in terms respectively of their genetics, morphology, and behavior. It is here that Sesardic draws most heavily—and, I will argue, most incorrectly—from the newest scientific findings.

3. The genetic case for races

Here Sesardic (2010, p. 148) makes a crucial mistake right off the bat: he strongly hints at an equation between human races and biological sub-species. But there is a large—if certainly *not* unanimous—literature in biology distinguishing the two, as well as making the case that while human races exist (in some biologically meaningful sense) they most certainly are *not* subspecies (see Pigliucci & Kaplan, 2003; Templeton, 2003). The term "race" when applied to animal systems (the terminology is different, though analogous, for plants, where researchers tend to use "ecotype") most often refers to groups of geographically and/or ecologically differentiated populations. "Subspecies," on the other hand, marks deeper divisions that have cladistic (i.e., phylogenetic) valence, and subspecies are often interpreted as incipient species. It is unquestionable, even on the basis of the biological literature cited by Sesardic, that human subspecies—so construed—simply do not exist (Templeton, 2003). This, to be sure, is an accident of human phylogeography, not a biologically necessity, but it is the case nonetheless. The existence of geographically differentiated human populations is equally unquestionably a fact, though its significance is what is usually under (heated) discussion.

As we shall see immediately, once the distinction between subspecies and races is understood and acknowledged, and once we accordingly recast the debate in terms of human races—*not* of human subspecies—most of the points made by Sesardic either remain true but lead to drastically different conclusions than he imagines, or simply no longer hold.

Which brings us to the so-called "Lewontin fallacy." Population geneticist Richard Lewontin (1972) famously observed that the overwhelming majority of the genetic variation characterizing the human species is found within, not among populations. The exact numbers vary according to when the estimate was made and which genetic markers were used, though the figures have stayed remarkably similar since Lewontin's first assessment (which put inter-population variation at about 7%, and correspondingly intra-population variation at about 93%).

Sesardic claims that this statistic has been much misused by critics of the race concept: "the mere fact that the between-group genetic variation is many times smaller than the within-group variation does not actually preclude racial categorization from making a lot of genetic sense. To think otherwise is to commit a statistical mistake that has recently been labeled 'Lewontin's fallacy'" (Sesardic, 2010, p. 149). Why would this be a fallacy? Because, as Sesardic adds shortly thereafter: "a clear group structure can still emerge on the basis of these aggregate properties of populations."

This is most certainly true, and it is essentially the *only* empirically based argument Sesardic can marshal in support of his thesis, at both the genetic and morphological levels of analysis (at the behavioral one, as we shall see below, things become somewhat bizarre). But Sesardic is equivocating on a variety of terms here. For instance, as I will discuss below, "group structure" can be recovered from almost any biological sample, as long as there are consistent inter-group differences, no matter how small. But why should we be concerned with group structure, unless it indicated a deep difference, such as a phylogenetic one? And the latter is, again, clearly not the case for human populations. As for "racial categorization," again, it depends on what one means by that term. If it is to be used simply as synonymous with population differences, then I'm pretty sure Lewontin himself wouldn't deny that there are differences among human populations. So what?

Let us examine the evidence that Sesardic cites in favor of his conclusions about racial "group structure" in humans. Two of the major (somewhat) recent works discussed by Sesardic are by Rosenberg et al. (2002)—ironically, the senior author of which, Marcus Feldman, is a longtime collaborator of Lewontin—and by Tang et al. (2005); accordingly, I will focus my analysis on those. The Rosenberg et al. paper is a study of 52 human populations, whose genetic diversity was characterized using 377 autosomal (i.e., not sex-linked) microsatellite loci scored in 1056 individuals. It is by all means a large sample of genetic variation, and its empirical conclusions are robust (Rosenberg et al., 2005). The significance of the Rosenberg et al. study for Sesardic is that it "did allow an inference of group structure and that, furthermore, five clusters derived from that analysis of purely genetic similarities corresponded largely to major geographic regions" (Sesardic, 2010, p. 153). Yes, but this is an interestingly (and possibly revealing) exercise in selective quotation on Sesardic's part.

First off, Rosenberg et al. actually found a *variable number* of major clusters (6, 5, 4 and even 3), depending at what level one stops the analysis. Why pick a particular one as the major finding of the paper, other than because five clusters happen to fit the author's predilection for the true number of human races? At the very least this is blatant cherry picking of the relevant evidence. Second, and far more damning, Sesardic entirely ignores that Rosenberg and colleagues go on to say (even in the abstract of their paper!) that "we identified...subclusters that often correspond to individual populations." Are each and all of these subclusters also races, in Sesardic's opinion? One assumes not, but Sesardic has not given us any compelling reason to think that K = 5 is *the* racial level because his own basic meaning of 'race' (a genetically identifiable cluster of individuals) is compatible with multiple levels of