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## Philosophy of race meets population genetics

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### ABSTRACT

In this paper, I respond to four common semantic and metaphysical objections that philosophers of race have launched at scholars who interpret recent human genetic clustering results in population genetics as evidence for biological racial realism. I call these objections ‘the discreteness objection’, ‘the visibility objection’, ‘the very important objection’, and ‘the objectively real objection.’ After motivating each objection, I show that each one stems from implausible philosophical assumptions about the relevant meaning of ‘race’ or the nature of biological racial realism. In order to be constructive, I end by offering some advice for how we can productively critique attempts to defend biological racial realism based on recent human genetic clustering results. I also offer a clarification of the relevant human-population genetic research.

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“Thus there appears to be a mismatch: racial groups are conceptually organized in part by skin color, while human breeding populations are not” (Glasgow, 2009, 97).

“What “we” in public discourse call race is not a natural or genetic category” (Haslanger, 2012, 307).

### 1. Introduction

Recent work in population genetics has problematized the received view about race in the philosophy of race. By *philosophy of race* I mean philosophical work on the topics of race or racism done by professional philosophers. Philosophers of race are a diverse bunch. Some were trained as philosophers of language (e.g. Anthony Appiah, Christopher Hom, Luvel Anderson, etc.); some were trained as moral or political philosophers (e.g. Bernard Boxill, Kathryn Gines, Joshua Glasgow, Charles Mills, etc.); some were trained as epistemologists (e.g. Linda Alcoff, Naomi Zack, etc.); some were trained as metaphysicians (e.g. Sally Haslanger, Jeremy Pierce, etc.); some were trained as philosophers of science (e.g. Lisa Gannett, Koffi Maglo, Robin Andreasen, etc.); and the list continues. However, despite the diversity among philosophers of race, most

philosophers of race have arrived at the same metaphysical conclusion about race: that it’s not the case that race is biologically real. Suppose we call this view *biological racial anti-realism*. Then, the received view about race in philosophy of race is undoubtedly biological racial anti-realism. However, I should be clearer about what I am saying here.

As Robin Andreasen (1998, 218) has clarified, debates about the biological reality of race are sometimes about whether biology vindicates ordinary racial classification, and sometimes about whether humans can be validly divided into “biological races”—by which she means races understood in some biological sense of ‘race’, such as subspecies. Due to the demographics of philosophers of race (mostly Americans and mostly not philosophers of science), the primary concern among philosophers of race has been on whether biology vindicates ordinary racial classification, and, in particular, the ordinary meaning of ‘race’ in the contemporary United States of America (US).<sup>1</sup> So, the most charitable way to understand the received view about race in philosophy of race is as contextualized to racial discourse that uses the ordinary meaning of

<sup>1</sup> For evidence that most philosophers of race contextualize their race theory to the ordinary meaning of ‘race’ in the contemporary US in whole or in part, see: Outlaw (1990, 58, 60, 78), Zack (1994, 14), Appiah (1996, 38, 41), Mills (1998, 42), Blum (2002, 133–135), Sundstrom (2002, 96), Corlett (2003, 1, 6), Andreasen (2004, 437), Stubblefield (2005, 3), Alcoff (2006, 10), Glasgow (2009, 3), Haslanger (2012, 308), Taylor (2013, 20, 82), and Spencer (2014, 1025).

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'race' in the contemporary US (hereafter, *the US meaning of 'race'*), and for that reason alone I will restrict my focus to this interpretation of biological racial anti-realism.<sup>2</sup> Thus, we can restate the received view about race among philosophers of race as the view that it's not the case that race, according to the US meaning of 'race', is biologically real.

Despite the popularity of biological racial anti-realism among philosophers of race, recent work in population genetics poses a serious problem for the received view. In short, certain levels of human population structure look like they consist entirely of *US racial groups* (racial groups according to the US meaning of 'race'), which suggests—though does not imply—that race, in its US meaning, is biologically real after all. In fact, some scholars, such as Neil Risch, Burchard, Ziv, and Tang (2002, 6) and Spencer (2014, 1033) have explicitly argued that one specific level of human population structure reveals “US racial groups”.

Nevertheless, philosophers of race have, for the most part, rejected the claim that these new population-genetic results overturn the received view of biological racial anti-realism, and they have defended the received view using three philosophical routes: semantics, metaphysics, and methodology. The semantic critics argue that, according to what 'race' means in the contemporary US, the human populations picked out in population-genetic research are simply not *races*, and thus, this population-genetic research is not really about *race*. In other words, according to these critics, even though population geneticists regularly use names like 'Native American', 'Asian', and 'Pacific Islander' to describe certain human populations, it would be an equivocation fallacy to interpret population geneticists as talking about the same Native Americans, Asians, and Pacific Islanders that ordinary Americans call 'races'. While philosophers have advanced several reasons for the *semantic mismatch* between human population terms and US race terms, I will only discuss the two most popular objections.<sup>3</sup> The first semantic objection I will discuss is the widely held view that US racial groups must be “discrete”; and the second semantic objection I will discuss is the widely held view that US racial groups must be distinguishable according to “visible physical features” (Glasgow, 2009, 20; Zack, 2002, 87). I call the first the *discreteness objection* and the second the *visibility objection*.

The metaphysical critics argue that even if the semantic objections do not succeed, human genetic clustering results do not support the *biological reality* of race. Again, while there are more than a few metaphysical objections that philosophers of race have launched, I will only address the two most popular objections. The first is that in order for US racial groups to be biologically real, they need to form a *very important* biological classification, such as a level of “subspecies” or “clades” (Maglo, 2011, 370; Zack, 2002, 37).<sup>4</sup> The second is that US racial groups are not biologically real because they are not *objectively real* in the sense of existing independently of human interest, belief, or some other mental state of humans (Sundstrom, 2002, 93; Zack, 2002, 5). I call the first objection the *very important objection* and the second the *objectively real objection*.

The methodological critics launch epistemological concerns about the experimental design, execution, or interpretation of the relevant population-genetic research. For instance, Serre and Pääbo (2004) have questioned the sampling strategy of the relevant population-genetic research. Kalinowski (2011) has questioned the accuracy of the clustering software used in the relevant population-

genetic research. Maglo (2011) has questioned the robustness of the relevant results, and Kaplan and Winther (2013, 2014) have highlighted the Duhemian underdetermination that haunts any racial interpretation of the results. Though the methodological concerns are important, I will limit my discussion to the semantic and metaphysical concerns for two reasons. First, the semantic and metaphysical concerns are no less important than the methodological concerns, and, second, the semantic and metaphysical concerns have been discussed much less than the methodological concerns in the literature.

The purpose of this paper is to show that each of the four semantic or metaphysical objections mentioned above, each of which purports to offer a reason for rejecting the claim that recent human genetic clustering results support biological racial realism, stems from implausible semantic assumptions about the US meaning of 'race' or implausible metaphysical assumptions about what 'biological racial realism' should mean. However, in order to be constructive, I will follow my critique with advice about how philosophers of race can productively critique these new attempts to revive biological racial realism. I will begin by summarizing the population-genetic research that has caused all of the fuss.

## 2. Human population structure looks racial

The recent work in population genetics that poses a serious challenge to biological racial anti-realism originated with the implementation of a new technique in population genetics for identifying infraspecific population structure. To be clear, population geneticists consider it an important research project to determine a species' “population structure,” which is its hierarchical levels of biological populations (Hartl & Clark, 2007, vi–x). Population geneticists usually start by identifying all of the “local populations” (or “demes”) in a species, and lump these populations into more inclusive population groups until they reach the species level (Hartl & Clark, 2007, 46).<sup>5</sup>

Population geneticists have used this new technique for identifying infraspecific population structure to assess population structure in all sorts of predominantly sexually reproducing species, such as common chimpanzees, chickens, Polynesian tiger mosquitos, and Japanese barberry plants. However, the technique and clustering results derived from the technique only became controversial outside of population genetics when the technique was applied to humans. So, what is this new technique? Unsupervised, fuzzy genetic clustering—or *UFG clustering* for short. UFG clustering is *unsupervised* insofar as population assignment is done by a computer. UFG clustering is *fuzzy* insofar as population membership is fuzzy in a fuzzy set-theoretic sense. In other words, in UFG clustering, individuals possess a grade of membership in a population that corresponds to a real number in the interval [0, 1] (Zadeh, 1965, 339). With that said, population geneticists tend not to use the word 'fuzzy' to describe population memberships; they prefer to use the word 'admixed' instead (Pritchard, Stephens, & Donnelly, 2000, 947; Tang, Peng, Wang, & Risch, 2005, 289).

Before the invention of UFG clustering algorithms, such as *structure*, *frappe*, *admixture*, and *mStruct*, population geneticists only used “distance-based methods” to sort individuals into populations (Pritchard et al., 2000, 946). Distance-based methods used measures of biological distance (e.g.  $F_{st}$  genetic distance) among local populations or organisms to construct a distance matrix. Then, that matrix was converted into a visual graph, such as a tree (as in UPGMA tree reconstruction) or a scatter plot (as in

<sup>2</sup> The sense of 'racial discourse' that I am using can be found in Spencer (2014, 1027).

<sup>3</sup> I borrow the “mismatch” jargon from Mallon (2006, 533).

<sup>4</sup> I borrow the “very important” jargon from Michael Hardimon (2012, 270–271).

<sup>5</sup> In population genetics, a *local population* is a maximally inclusive group of randomly mating conspecific organisms (Hartl & Clark, 2007, 46).

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