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Abstract:

Recent work by Michael O. Hardimon and Quayshawn Spencer defends a minimalist (or deflationary) biological realism about race. Their approach has two distinct features. First, unlike revisionist biological race, minimalist biological races are a conception of race that correspond to our ordinary race concepts. Second, unlike hereditarian or essentialist accounts, minimalist biological races are not claimed to be robustly explanatory. This paper argues against their account of the biological genuineness of race. I argue the minimalist biological conception of race lacks the explanatory constraints of genuine biological kinds. Rather, minimalist biological races are gerrymandered kinds.

Race: biological but minimalist

Biological racial realism holds that races are biologically meaningful categories that capture or correspond to at least one structure of human diversity. There are many ways that race can be biological—genetic, cladistic, ecotypical— depending on what factors are taken to be the biological basis of race. Nonetheless, biological racial realists take the biological basis of race to be more than the physical features (e.g., skin color) that are ordinarily taken to be racial.

Recently, Michael O. Hardimon (2017a, 2017b) and Quayshawn Spencer (2012, 2014, 2018, 2019) have defended *minimalist* or *deflationary* accounts of race as biological. Their approach, which I call *minimalist biological racial realism*[1], makes promising departures from previous accounts that defended a biological basis for race. Unlike revisionist biological conceptions of race, minimalist biological racial realism defends a view of biological races that capture the "logical core" of the ordinary race concept (Hardimon 2003). And while the view holds that races correspond to at least one structure of human genetic diversity, it rejects a robust interpretation of the genetic basis of race. Minimalist biological racial realism therefore holds that a conception of race consistent with the ordinary race concept is (i) biologically real and (ii) could end up, as matter of empirical fact, being explanatorily limited. Let us take each view in turn to see its strengths and, as I will argue serious, weaknesses.

For Hardimon (2017a, 2017b), it is possible to define a biologically genuine category that fulfills intuitive desiderata for a conception of race. Races, ordinarily conceived, are biological groups that vary from one another in physical characteristics such as skin color, eye shape, and lip form. Races are groups and "we can say that, for any given race R, there is an in-principle answer to the

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[1] Although this is not what Spencer calls his view, as I discuss below Spencer's account has the defining features of minimalism.

question, what pattern of visible physical characters does it exhibit?" (Hardimon 2017b, 151). Hardimon (2017b) provides the following definition of minimalist races: "a (minimalist) race is group of human beings:

> (1) which, as a group, is distinguished from other groups of human beings by patterns of visible physical features,
> (2) whose members are linked by a common ancestry peculiar to members of the group, and which
> (3) originates from a distinctive geographic location (Hardimon 2017b, 150).

Of course, it is trivial to construct categories that vary along some selected property. We could do so for height, weight, or any number of other biological or non-biological properties. Hardimon (2017) defends the biological genuineness of races on three counts. First, the "patterns of visible physical features" that are the defining characteristic of races are biologically determined. There is a genetic and developmental basis for these varying traits. Second, genetic clustering algorithms such as *structure* used by Rosenberg and colleagues (2002) find a structure to human genetic diversity that, when instructed to sort populations into five clusters, yields five continental populations that correspond to minimalist races. Third, there is an explanation both for why minimalist races have an underlying genetic structure and the variation in traits among minimalist races, namely, "biological raciation". As continental groups, minimalist races are geographically separate from one another and are separately subject to founder effects and genetic drift. Furthermore, the salient racial features such as skin color are plausibly adaptations to the different ecological pressures. Hardimon argues that "minimalist race counts as biologically significant because a number of its visible physical features such as skin color are almost certainly evolutionary adaptations to the climate of the aboriginal home of the minimalist races" (Hardimon 2017b, 158). Taken together, Hardimon (2017b) argues these three facts show that minimalist races are a biologically meaningful category.

Hardimon rejects the unsound inferences of the essentialist biological race conception. Minimalist races are not claimed to have normative or further genetic significance. Minimalist race is biological merely because the physical features that classify races-- lip form, eye shape, skin color-- are biological traits and geographic ancestry is a biologically relevant distinction. Furthermore, physical differences do not tell us anything about underlying genetic diversity other than perhaps about the genetic and developmental source of those differences. That is, there may be a great deal of genetic diversity between populations that show no salient physical differences, and vice versa. The genetic pathways that determine outward traits are a tiny fraction of the overall human genome.

Quayshawn Spencer (2012, 2014, 2018, 2019) defends the biological reality of race along similar lines to Hardimon. For Spencer, to say that race is biologically real is to hold that it is "an epistemically useful and justified entity in a well-ordered research program in biology, which I will call a genuine biological entity" (Spencer 2019, 95). [2] That is, race has the same status as "monophyletic group, TYRP1 gene, hypothalamus", which are cases of good scientific classification. These are rivaled by cases of bad scientific classification, such as "gemmule, baramin, and destructiveness organ" (Spencer 2012, 185), which scientists would reject.

Spencer (2012) argues that the feature that genuine entities share is that they advance long-term scientific progress. The genuine entities promote "*epistemic* progress in science, such as improving our ability to predict known phenomena, or accurately predicting novel phenomena" (Spencer 2012, 186). Genuine entities play an epistemic role in a well-ordered scientific research program. They are fruitful and lead scientists down exploratory paths that are likely to lead to new discoveries instead of dead ends. In the case of biology, Spencer argues that *e* is a genuine biological entity if,

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[2] Spencer (2012) had referred to them as genuine *kinds*. I use his latter language (i.e., entity) throughout.

> (i) *e* is useful for generating a theory t in a biological research program p,
>
> (ii) using *e* to generate t is warranted according to the epistemic values of p to explain or predict an observational law of p, and
>
> (iii) p has coherent and well-motivated aims, competitive predictive power, and frequent cross-checks (Spencer 2012, 193).

Spencer argues that each of these conditions is satisfied in the case of race. Condition (iii) is fulfilled by population genetics, which is one of the core research programs of biology. As for the first two conditions, Spencer argues that research into human population structure and genetic clustering algorithms by Rosenberg and colleagues (2002) and latter researchers vindicate the biological genuineness of race. A species can be subdivided into a number of populations, where K is the number of populations. These divisions are the population structure of the species. As we have seen, at K=5, we get the human continental populations: Africans, Eurasians, East Asians, Native Americans, and Oceanians. These human continental populations, Spencer argues, satisfy conditions (ii) because, they successfully generate a theory about human population structure in which the "observational law is that humans have K = 5 genetic structure that is largely geographically clustered in the following regions: the Americas, Sub-Saharan Africa, Oceania, Eurasia east of the Himalayas, and Eurasia west of the Himalayas and North Africa" (Spencer 2019, 99). That is, as Rosenberg and colleagues (2002) have shown, the human continental populations are the population subdivision obtained by *structure* at K=5. Furthermore, Spencer argues that these human continental populations are *identical* to at least one scheme of racial classification, namely, the US Office of Management and Budget's (OMB) 1997 racial categories: Black or African, White, American Indian or Alaska Native, and Native Hawaiian or Other Pacific Islander. Therefore, given that human continental populations are biologically real, (OMB) races (which are identical to these populations) are biologically real.

Crucially for Spencer, even though races are genuine biological entities, "the only metaphysical fact that follows from a [entity] being genuine is that it is *real enough* to use in ongoing scientific research" (Spencer 2012, 194). Spencer's biological racial realism is therefore minimalist. The account does not ground the genuineness or reality of race in the fact that race explains an array of biological, psychological, or other phenomena. Rather, by fulfilling the conditions of realness or genuineness, it *could* play an explanatory role in scientific research programs such as medical genetics. As Spencer (2019) puts it, "we now know that it's metaphysically possible for some races to matter in medical genetics because some races are biologically real" (Spencer 2019, 104). Because (OMB) race is biologically real, it is metaphysically possible that race matters in medical genetics. It is "real enough" to be explanatorily or predictively useful. However, Spencer (2019) notes that:

> "OMB race theory does not *imply* that OMB races differ in medically relevant allele frequencies, and it does not imply that OMB races *don't* differ in medically relevant allele frequencies. Likewise, OMB race theory does not imply that OMB races differ in any socially important traits (e.g., intelligence, beauty, moral character, etc.), and it does not imply that OMB races don't differ in any socially important traits. Determining whether OMB races differ in any phenotypic ways requires a separate empirical investigation" (Spencer 2019, 104).

The biological reality of race does not depend on the fact that it robustly explains a wide range of empirical phenomena. In fact, it may turn out, after empirical investigation, that there is no other way OMB races differ phenotypically than in the defining racial traits. But that is neither here nor there on whether races are biologically real. It is possible that races matter explanatorily because they are real, they are not real because they are (robustly) explanatory.

In summary, Spencer and Hardimon defend a minimalist biological racial realism that captures key elements of the ordinary concept of race. What makes their accounts minimalist is that they eschew the inference from biological race to the clustering of other significant biological properties (aside from those that are defining physical characteristics of races). They claim, rather, that it is possible for minimalist biological race to be useful in biology, especially the biomedical sciences.

Below, I discuss criticism of the minimalist race account and propose and defend a gerrymandering objection to minimalist biological racial realism (§ 2). I argue that minimalist biological races lack the explanatory values sought in biological sciences. As such, they are poor candidates for the scientifically-elite status of naturalness or genuineness (§ 3).

2. The Gerrymandering Objection

I argue that minimalist races lack biological genuineness or naturalness. There are many accounts of metaphysical naturalness or genuineness, and I do not here discuss the considerable literature on metaphysical naturalness. The distinction between natural or genuine kinds and properties on the one hand and unnatural or pathological kinds or properties on the other is a core question in metaphysics and philosophy of science (Kitcher 1981; Fodor 1974; Lewis 1983; Franklin-Hall 2015; Bhogal 2023). David Lewis's (1983) groundbreaking "New Work for a Theory of Universals" highlighted the central role of naturalness in theories of explanation, laws of nature, similarity, induction, among others. Furthermore, any scientific project involving categorization or classification needs a principle by which to distinguish appropriate from inappropriate classifications, regardless of how pluralist the account (Franklin-Hall 2015). Classificatory practices in science have to be disciplined by a carving principle that tracks the grooves and joints of nature. As Franklin-Hall (2015) writes, "thus we do well or badly, classification-wise, to the extent that our partitions track the kinds embedded in nature itself, and the pathological categories are those that in no way—even but through a glass darkly—match the world's own" (Franklin-Hall 2015, 926).

The challenge to the naturalness of minimalist races I pose is that they are *gerrymandered*. Gerrymandering objections charge that an entity or kind is inappropriately 'built up'. Being gerrymandered is one way a kind or entity can lack naturalness or genuineness. This challenge is particularly acute in the special sciences because all special science kinds or properties are composed of other, lower-level kinds or properties. As such, an account of, for instance, biological naturalness needs a principled way to distinguish the genuine from the gerrymandered.[3] I defend two core features that minimalist races lack that render them liable to the gerrymandering objection. First, natural kinds are projectible or portable. There is no consensus on how to characterize projectability[4]. The basic idea is that projectability makes inductive inferences permissible. For a natural kind *S*, we can legitimately infer from X is *S* to other predicates in relation to which it is projectible (Khalidi 2018, 1380f). For instance, in Goodman's ([1955]/1983) classic example, we can project from X is an *emerald* to X is *green*. One of the tell-tale signs that an entity or kind is gerrymandered is a lack of projectability or explanatory connection to a wide range of explanandum-phenomena. *Portability* is a feature of kinds and properties that play a role in multiple explanations.

Minimalist races are not projectible or portable. And this is partly because they have been *minimally* conceived. By the lights of Hardimon and Spencer themselves, it is possible biological races do not explain a wide range of phenomena, although they maintain it possible that they may do so. I do not claim that there is nothing that minimalist races explain. After all, the fact that minimalist races correspond to genetic clusters at K=5 in Rosenberg and colleagues (2002) model means that minimalist races can explain facts about the distinctness of those clusters. And racial traits such as skin color are biological traits explained by biological mechanisms. But this is not enough to avoid a gerrymandering objection. Gerrymandered kinds are also capable of explaining some phenomena.

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[3] The view of naturalness I draw on is a graded notion. Kinds or properties can be more or less natural. To say that minimalist races are gerrymandered in this context is to say that they are not as natural as, for instance, neuron, hypothalamus, TYRP1 gene, and so on. They may nonetheless be more natural than even more pathological kinds such as "destructiveness organ."

[4] See Goodman ([1955]/1983) for an influential early characterization of projectability. Khalidi (2018) defends an account more suited to sciences where laws or universal generalizations play little to no role.

Take for instance Fodor's (1974, 11) example of a manifestly unnatural kind, the kind *is transported to a distance of less than three miles from the Eiffel Tower*. Let's call this kind *T*. There are things that *T* predicts and explains. For instance, for goods sold in shops *T* explains why they are denominated in Euros. It predicts that they are likely to be more expensive than other goods sold in France. It may explain other things besides. Nonetheless, *T* has extremely limited portability. It does not figure into robust explanatory relations of the kind sought by sciences. Furthermore, whatever *T* explains is *better explained* by other, more natural kinds.

This leads to the second, and related, mark of naturalness. Namely, natural kinds or properties secure explanatory value. Scientific fields are interested in or investigate kinds that are maximally mutually explanatory with respect to the target regularities studied by that science. Physical kinds such as *charge, spin, charm, field, etc.*; neurobiological kinds such as, *neuron, neurotransmitter, synapse, etc.*; have respective robust explanatory connections that facilitate understanding of how the regularities studied by a given science (fundamental physics, neuroscience) fit together (Bhogal 2023). Minimalist races lack these valuable explanatory connections in biology that would justify their biological naturalness or genuineness.

Minimalist races fail to secure explanatory value that is missing at a higher or lower populational grain. Explanatory accuracy is not sufficient to exclude gerrymandered kinds. Strevens (2008), for instance, notes that we can disjunctively create a causal model to explain some target phenomenon which is accurate but nonetheless inappropriate. In his example, he asks us to consider two causal models for Rasputin's death, one involving his drowning due to being bound and thrown in a river (influviation) and another his poisoning. Suppose that it is the influviation, rather than the poisoning, that is a difference-maker for his death. Then an accurate explanation of Rasputin's death will cite the fact that Rasputin was bound and thrown in the river as the explanans. We can go further and "take the disjunction of the setups of the two models and form a new model that has the disjunction as its setup: it states that *either* Rasputin was thrown in a river etc. *or* he was fed poison teacakes etc. The disjunctive model is veridical, since one of these chains of events did occur as claimed, and it entails Rasputin's death, since both chains of events lead to death" (Strevens 2008, 102). However, the disjunctive model is gerrymandered. On Strevens' (2008) account it lacks *cohesion*. The ability to generate gerrymandered entities or models that nonetheless are explanatorily accurate is a major impetus for accounts of naturalness or genuineness. Explanations that cite gerrymandered entities might be accurate, but they will lack explanatory value (such as cohesion).

In biological sciences, among the most important dimensions of explanatory value are specificity, stability (or robustness), and proportionality (Woodward 2010) For instance, as Woodward (2010) notes, it is the *specific* (causal) explanatory relations, and the entities that engage with them, that are of scientific interest to biologists. A paradigm example of biological specificity is enzyme action. The core properties of an enzyme— its size, shape, configuration— are what explain its derivative properties including its binding, affinities, and so on. An explanation of why a kinase has been activated that cites the activity of an ATP enzyme is *better* than one that cites other causal-explanatory contributors.

The problem for minimalist or OMB races is that they are at an inappropriate grain to secure explanatory value in biology. In order for minimalist races to have explanatory value *in biology*, what we would want to see is *specific, robust, and proportional* explanatory relations between minimalist races and the regularities they (possibly) explain. In the case of minimalist race, however, what explains bio-genetic phenomena that seemingly vary racially, such as incidence of genetic diseases such as sickle-cell disease and lactose intolerance, or even defining physical characteristics such as skin color, are not explanatorily connected to race *per se* but rather populations that cut within and across races

(Biddanda, Rice, and Novembre 2020). There is no *specific* explanatory relation between race and these other properties.

Additionally, the minimalist biological race concept takes continental barriers to be a core driver of (genetic) distinctiveness between races. Human population genetics research vindicates at least a deflationary view of what that distinctiveness amounts to. Nonetheless, geographic distance as a result of continental barriers is not the only the kind of barrier that results in genetic drift sufficient to establish population structure. For instance, linguistic differences between geographically co-located populations are sufficient for reproductive isolation (Hellwege et al. 2017). Population stratification therefore occurs at a much smaller, and more local, scale than the continental. As Hellwege and colleagues note "allele frequencies change randomly over time as an independent process for each population isolate, ultimately causing observable differences in the frequency of many alleles after several generations of separation and differentiation" (Hellwege et al. 2017, 2). Sophisticated clustering algorithms are capable of distinguishing between dozens or hundreds of population groups. For instance, Gao and Starmer (2007) debut a clustering program capable of identifying clusters that differentiate between Chinese and Japanese populations (Gao and Starmer 2007). What population stratification shows is that other clustering of human populations are also distinct and potentially explanatorily more relevant in explaining medical and other phenomena. They act on populations within and across different putatively biological (ordinary) races.

The upshot of the discussion above is that race— as a biological kind, population, or entity— is not explanatorily in a way that secures explanatory value. Of course, social factors such as racism, or biological factors related to lower-level populations as opposed to race may be explanatorily apt. And this is not to deny that population-level genetic differences can play an explanatory role in medicine. Rather, the population in question is only rarely racial. Given the factors that produce genetic diversity between continental populations— reproductive isolation, selection, genetic drift— also operate at much finer grain, it would be a massive coincidence if it were racial difference, as opposed to populational differences at a different grain, that accounted for a large share of epidemiological difference (Kalewold 2020).

Furthermore, arguing that minimalist races are not genuine kinds or entities does not preclude the reality of sub-racial populations and their explanatory role. However, it is not explanatorily apt to attribute explanatory relations at lower population level to the higher-level racial population. Such explanations lack *proportionality* (Yablo 1992; Woodward 2010). Race (as the realist conceives it) does not make biomedical explanations *better* than explanations that cite populations at a proportional grain.

In summary, I argue that what matters for establishing the genuineness of *biological* kinds or entities is whether they are portable and secure explanatory value. Spencer (2012, 2019) is right that for races to be biologically real they need not fulfill stringent criteria such as being independent from scientific interests or fundamental categories of population genetics. Many accounts ground biological realness (or biological naturalness) in the perspectives, interests, and practices of scientists (Kitcher 2007). The gerrymandering objection would be weak if it held race to a higher standard than other biologically genuine or natural kinds. However, it is by looking at other biological kinds that we can see how minimalist races fail to secure the kind of value necessary for *biological* naturalness or genuineness. The criteria advanced by minimalist realists are not sufficient to establish that races are biologically real or genuine. The factors that are supposed to secure the genuine biological kindness of minimalist race-- adaptiveness, distinguishability, etc.--are readily applicable to larger or smaller population groups that secure dimensions of explanatory value (proportionality, robustness, stability, and so on) that minimalist races lack. Distinguishability, as measured by *structure*-like programs, is possible for other possible groupings. Indeed, given enough sites, it is possible to detect population structure down to the level of families. Given the discussion so far, it raises the question of why a race-based model would be favored in biomedical research.

Conclusion

I argue that what matters for establishing the genuineness of biological kinds is whether they participate robustly in biological explanatory practice. They cannot be genuine in the way Hardimon and Spencer defend *if* they are not explanatorily valuable. If, as a matter of empirical fact, races are explanatorily stunted, then they cannot be real in a way that resists the gerrymandering objection. And we have reason to hold that minimalist races are explanatory orphans. The factors that are supposed to secure the genuine biological kindness of minimalist race-- adaptiveness, genetic distinctness, etc.--are readily applicable to larger or smaller population groups that secure dimensions of explanatory value (proportionality, robustness, stability, and so on) that minimalist races lack. Genetic distinctness, as measured by detectability by *structure*-like programs, is possible for other possible groupings (e.g., K=2: Africa and the rest of the world). Minimalist biological races do not figure into more robust, more specific, or more stable explanations than explanations that cite other human populations. They therefore lack the genuineness or naturalness proper to our scientific-elite categories.

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