

On the New Biology of Race

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ON THE NEW BIOLOGY OF RACE*

The notion that race has some biological basis has been widely criticized, by both biologists and philosophers. Indeed, the view that race is no more scientifically real than witchcraft is so influential that many who want to argue that race is real divert to understandings of race and reality according to which race is real as a social, rather than natural, kind.¹ Against this trend, however, Robin Andreasen and Philip Kitcher have recently argued for an improved biology of race.² The improvements over past biological accounts of race are two-fold. First, the new biology of race avoids the racism of prior biological accounts of race, which often attributed intrinsic significance to racial phenotypic traits or tied intellectual, aesthetic, cultural, and moral potential to those traits. Indeed, both Andreasen and Kitcher, while trying to make biological sense of race, reject the conflict and social division that has surrounded race for so long. Second, the new biology of race actually includes sound scientific research. Briefly, the key idea to this new biology of race is that while perhaps there is no "race gene" or set of necessary and jointly sufficient phenotypic features that can be attributed to each race, races can be understood as *breeding populations*. Here I want to question the viability of this approach.

I

On Andreasen's "cladistic approach," we need not categorize humans according to inherent essences, geography, or conventionally established similarities, for there is another option for a viable biological understanding of race: we can classify via genealogy. A cladistic classification can be represented in a phylogenetic tree, as in Figure 1.³

* Thanks to David Eng for helpful comments on earlier drafts.

¹ See, for example, Michael Root, "How We Divide the World," *Philosophy of Science*, LXVII, Supplementary Volume (2000): S628–39; Ronald R. Sundstrom, "Race as a Human Kind," *Philosophy and Social Criticism*, xxviii (2002): 91–115; Sundstrom, "Racial Nominalism," *Journal of Social Philosophy*, xxxiii (2002): 193–210; and Paul C. Taylor, "Appiah's Uncompleted Argument: W.E.B. Du Bois and the Reality of Race," *Social Theory and Practice*, xxvi (2000): 103–28.

² Andreasen, "A New Perspective on the Race Debate," *British Journal for the Philosophy of Science*, XLIX (1998): 199–225; Andreasen, "Race: Biological Reality or Social Construct?" *Philosophy of Science*, LXVII Supplementary Volume (2000): S653–66; Kitcher, "Race, Ethnicity, Biology, Culture," in Leonard Harris, ed., *Racism* (Amherst, NY: Humanity, 1999), pp. 87–120.

³ Andreasen, "A New Perspective," p. 207.

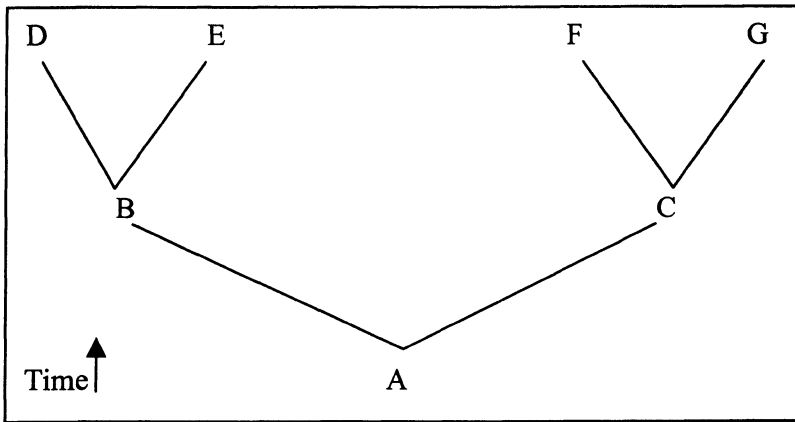


Figure 1

Each letter in Figure 1 represents a breeding population, that is, a population that is largely reproductively isolated from other populations. Using this model, Andreasen constructs a phylogenetic tree, and hence identifies distinct breeding populations in terms of the relative closeness of different human populations through genetic distance, “a measure of the difference in gene frequencies between two breeding populations” (*ibid.*, p. 210).⁴ Drawing from biological data, Andreasen informs us that Africans and non-Africans have the furthest genetic distance. The second split separates Pacific and South East Asians from other non-Africans, and eventually splits occur between Pacific Islanders and South East Asians, North Eurasians and Caucasians, and finally within North Eurasians. On the basis of these data, Andreasen borrows the tree in Figure 2 from Luigi Luca Cavalli-Sforza.⁵

Since biologists can construct such a “family tree,” Andreasen concludes the following: “It means that it is possible to give a biologically objective definition of race. Races are monophyletic groups; they are ancestor-descendant sequences of breeding populations, or groups of such sequences, that share a common origin.”⁶

⁴ It is worth noting that reproductive isolation does not exclusively mean geographic isolation; other mechanisms can foster isolation, as we will see in our discussion of Kitcher. In addition, the isolation does not have to be so strong that there is zero interpopulation reproduction. It only entails that there is enough difference between intrapopulation reproduction and interpopulation reproduction to limit gene flow between populations, thereby resulting in genetic distance.

⁵ Andreasen, “A New Perspective,” p. 212, and “Race,” p. S660; Cavalli-Sforza, “Genes, Peoples, and Languages,” *Scientific American*, CCLXV, 5 (1991): 104–10.

⁶ Andreasen, “A New Perspective,” p. 214.

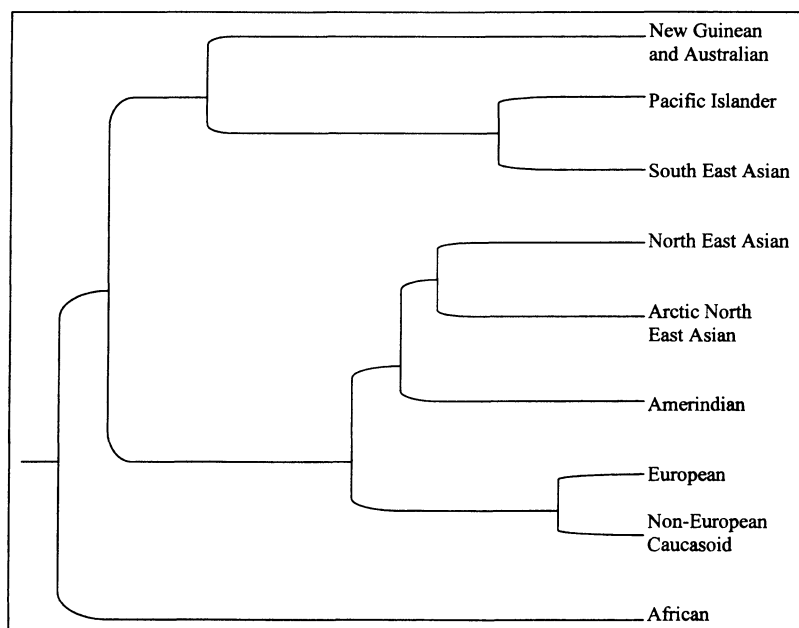


Figure 2

This account has several virtues.⁷ First, and most obviously, it seems to give a biological backing to our race talk. Second, since it hinges on reproductive isolation, the cladistic approach reveals the dynamic nature of race. That is, insofar as reproductive isolation has increasingly eroded since the European “discovery” and colonization period, races have been slowly burning out of existence for the last 500 or so years. Thus, we have racial ancestries, even if there are no current biological races. (As we will see, the view that races are disappearing marks a significant point of distinction between Andreassen and Kitcher.) Finally, the cladistic model carries no racist baggage, unlike so many preceding biological notions of race.

II

I have no quarrel with the second and third virtues just mentioned,⁸ but I think we ought to take a closer look at the first point—that the cladistic approach affords race some biological reality. Consider first

⁷ Andreassen, “A New Perspective,” pp. 215–17, and “Race,” p. S664.

⁸ Nor with the science behind Andreassen’s approach—she considers some possible objections on that front in “A New Perspective.”

that the folk notion of race does not normally contain the nine races identified in Figure 2. As others have noted, it is difficult to determine exactly what races the folk concept of race includes: some speak of “three major races”—African, Asian, and Caucasian; others consider Latinos, or Native Americans, to constitute a race. (Just in terms of numbers, I think it is safe to say that currently it is rare to hear a folk notion of race that involves more than four or five races).⁹

Accordingly, it seems that the nine races in Figure 2 do not correspond extensionally with folk notions of race, and Andreasen is quick to agree, with particular mention of the Asian varieties in her schema: “the folk category ‘Asian’ is not a cladistic race.... North East Asians are more closely related to Amerindians and to Caucasians than they are to South East Asians. Similarly, South East Asians are more closely related to Australians than to North East Asians.” Andreasen takes this discontinuity with the folk notion of ‘race’ to be nonproblematic, when she continues, “This conclusion is interesting because it illustrates that the existence of biological races does not depend upon our folk taxonomy being right.”¹⁰

But this exposes what I take to be a central flaw of the cladistic approach. That is, Andreasen has found a way of carving our ancestors into breeding populations, but these populations are not what we call ‘races’. In addition to the extensional differences already noted, consider the intension of ‘race’. Intensionally, of course, ‘race’ can mean (and has meant, over the years) a number of different things.¹¹

⁹ As is often pointed out, such folk categorizations often inconsistently offer groupings that overlap race, ethnicity, and national origin. The history of intellectuals theorizing about race—as opposed to folk categorization—offers an extremely varied set of lists of the races, which differ not only on how many races there are, but also on which races there are (none of which seems to match Andreasen’s list). To mention just a few examples, Bernier lists four or five (he is noncommittal about whether Native Americans constitute a distinct race); Voltaire offers seven; Kant offers four or five, depending on the essay; and Du Bois eight. As Robert Bernasconi and Tommy Lott note, by the end of the nineteenth century, the number of races “grew from four or five to fifty or even eighty,” except in the U.S., which sought to condense everyone of European descent into one race, to the exclusion of blacks, Asians, and Native Americans in particular—“Introduction,” in Bernasconi and Lott, ed., *The Idea of Race* (Indianapolis: Hackett, 2000), p. x. As the question posed here is whether there is any biological referent to what we, especially in the U.S., currently identify as races, I will be concerned with whether Andreasen and Kitcher can—or even need to—account for a biological basis of the current *folk* concept of race.

¹⁰ Andreasen, “A New Perspective,” p. 212–13; cf. Andreasen, “Race,” p. S664.

¹¹ For two detailed analyses of what ‘race’ means and has meant, see K. Anthony Appiah, “Race, Culture, Identity: Misunderstood Connections,” in Appiah and Amy Gutmann, *Color Conscious: The Political Morality of Race* (Princeton: University Press, 1996); and David Theo Goldberg, *Racist Culture: Philosophy and the Politics of Meaning* (Cambridge: Blackwell, 1993), chapter 4. Here, I only make some intuitive observations about what people mean or have meant by ‘race.’ I take it, though these observations are made from the armchair, so to speak, it is more or less obvious that these have been, at one

It might mean something as putatively benign as groupings based on pigmentation, for instance. Andreasen, however, holds that "Individuals are members of a cladistic race if and only if they belong to breeding populations that share a common origin. This will be true regardless of how closely they resemble each other."¹² Accordingly, her cladistic classification does not match up with the folk concept of race that centers on pigmentation. Presumably, for example, we would at least struggle to reconcile this folk concept with the idea that "South East Asians are more closely related to Australians than to North East Asians." None of this means that the ordinary notion of 'race' is coherent; the point is simply that the cladistic approach does not provide biological backing for *it*.

Or 'race' might mean something else. It might refer to a cluster of phenotypic features (in addition to skin color), but, since physical resemblance is irrelevant on Andreasen's cladistic approach, that approach seems incapable of matching a phenotypic-cluster folk classification. Or, 'race' might be taken in the way (some) racists mean it, when they attach intellectual, moral, or aesthetic characteristics to phenotypic features in a hierarchical fashion. Or, it might be a concept that attaches some such characteristics to phenotypic "markers," but in a nonhierarchical way, as we find in W.E.B. Du Bois.¹³ The point here is not that one of these understandings is better than the others (and, to be sure, each has its problems); again, the point is that Andreasen's cladistic approach does not map onto *any* of the more dominant folk conceptions of 'race', insofar as those conceptions are about more than genealogy.

Surely, however, ancestry—which is at the heart of the cladistic approach—does play a large role in many conventional understandings of race. (This is one horn of Andreasen's two-pronged response

time or another, conventional notions of 'race'. Andreasen offers some overlapping characterizations of common-sense ideas of race in "Race," p. S663. See Luther Wright, Jr., "Who's Black, Who's White, and Who Cares: Reconceptualizing the United States's Definition of Race and Racial Classifications," *Vanderbilt Law Review*, XLVIII (1995): 513–69, for summary and analysis of legal definitions of race in the U.S. Two relevant results can be found there: when not conflated with ethnicity and national origin, the legal definition of 'race' usually boils down to either overt physical traits or descent. (And, since on the second criterion one is of race *R* when both of one's parents are of *R*, presumably parental racial classification at some point must be defined by some non-genealogical criterion, most likely physical traits.) Finally, see Charles Hirschman, Richard Alba, and Reynolds Farley, "The Meaning and Measurement of Race in the U.S. Census: Glimpses into the Future," *Demography*, xxxvii (2000): 381–93, for how U.S. citizens self-identify in census reporting.

¹² Andreasen, "Race," p. S664.

¹³ "The Conservation of Races," reprinted in Du Bois, *The Souls of Black Folk*, David W. Blight and Robert Gooding-Williams, eds. (Boston: Bedford, 1997).

to the type of objection offered here.¹⁴) In the United States, at any rate, the “one-drop rule” has had a crucial role in our system of racial classification, so that persons of mixed black-white ancestry often get labeled as (and identify as) black, morphological indicators notwithstanding. As has been pointed out, of course, the one-drop rule regarding blackness is problematic on several levels, including being inconsistent with U.S. policy regarding Native Americans.¹⁵ The cladistic approach need not rely on the one-drop rule, however, for there is a more general ancestral component to the common-sense notion of race: a person is of race *R* if and only if her parents are both members of *R*.

Yet even this general genealogical element in common-sense notions of race does not match the cladistic approach. First, while ancestry is often *part* of the folk meaning of race, people frequently mean more than ancestry when they use racial discourse; skin color, for example, seems like a central—and inextricable—part of the folk meaning of ‘race’. Indeed, race is sometimes thought to include even more than skin color. Again, there are overt racists, who adhere to hierarchical racial essences, as well as those, like Du Bois, who seem to hold that the races, while not hierarchically ordered, still have essential characteristics beyond the phenotypic ones.

Second, whatever else conventional notions of race are intended to mean, they all seem to include the idea that races still exist. This, in turn, entails that the folk concept of ‘race’ at least means more than isolated reproductive groups that are vanishing (or have already vanished). Andreasen, by contrast, holds that because interracial reproduction eliminates isolated breeding populations, races are ceasing to exist. Thus, it seems that the viability of Andreasen’s cladistic approach, with its emphasis on ancestral isolated reproductive groups and dismissal of the centrality of phenotypic traits, does not entail that race—in its common-sense meanings—is real.¹⁶

¹⁴ Andreasen, “Race,” p. S665.

¹⁵ See, for instance, Naomi Zack, *Race and Mixed Race* (Philadelphia: Temple, 1993) and M. Annette Jaimes, “Some Kind of Indian,” in Zack, ed., *American Mixed Race: The Culture of Microdiversity* (Lanham, MD: Rowman and Littlefield, 1995) pp. 133–53.

¹⁶ In their analysis of census-style self reporting on the 1996 Racial and Ethnic Targeted Test, Hirschman et al., “Meaning and Measurement,” note that American folk classifications might be more productively captured in terms of origin, rather than race, but these origins are importantly different from Andreasen’s ancestral breeding populations. The origins identified in Hirschman et al. include more recent origins like ‘Hispanic’, and national origins like ‘Ecuadoran’, which do not map on to Andreasen’s ancestral breeding populations (intensionally or extensionally).

III

This brings us to the methodological question that is at the heart of Andreassen's theory, for she agrees that she has not shown that race *in its usual meanings* is real: "Questions about biological classification can be about ordinary language classifications, or they can be about scientific classifications. For example, the question 'is there a biologically objective way to define race' could be asking whether biology vindicates our common-sense notions of race. Alternatively, it could be asking whether there are *any* biologically objective ways to divide humans into races."¹⁷ As Andreassen sees it, the theory proposed by those who think that race is socially constructed rather than real seeks to answer the first question—about common-sense notions of race. The cladistic approach, not inconsistent with the constructionist view, seeks to find a biological notion of race, whether or not it matches up with common sense.

This agenda reveals the core question: How revisionist can one be about the meaning of 'race' and still call it 'race'?¹⁸ For instance, one might argue that because biologists can (to a large extent, though not entirely) divide the human species into two groups, namely those with XX chromosomes and those with XY, there is a biological notion of race, with two races, female and male. The right response to such an argument, I think, is that while it is true that this is one way of dividing up people biologically, it does not converge with what either intellectuals in the race debate or those who employ common sense mean by 'race'. Therefore, the argument has not established that races are biologically real. On the other hand, consider an approach that gave biological backing to race, but only required comparatively minor revisions to the common-sense notion of 'race' (for example, it required putting a group under the racial category *R* that previously was not thought of as *R*, but which contained members who were phenotypically similar). Perhaps we would concede that, indeed, races are biologically real and that we should revise our notion of 'race' in this minimal way.

Thus, while some minimal revision to the meaning of 'race' (as for all definitions, of course) is allowable in the search for biological backing for race, we must stay fairly close to the vest, or we risk not talking about race at all. The question, again, is: How much revision

¹⁷ Andreassen, "A New Perspective," p. 218.

¹⁸ While Andreassen is working independently of common-sense notions of race, she is also engaging in dialogue with those in "the race debate," as indicated by the title of her paper, "A New Perspective on the Race Debate." As such, it seems all parties ought to be in the same neighborhood, more or less.

is allowable? I cannot offer a good answer to that question here, but I do not think it is necessary. (Although, in section iv, I will suggest a limiting condition on concept revision.) For it seems to me that the burden is on the revisionist to show that her revisions are warranted. We need an argument from Andreasen that we should still call her breeding populations 'races', even though, first, her nine populations do not correspond extensionally to what we usually identify as races, and, second, her concept of 'race' as breeding population does not agree intensionally with the folk concept, insofar as we normally mean something beyond mere isolated reproductive groups, such as groups demarcated by skin color.

Andreasen does offer a response to this concern (this is the other horn of the two-pronged response): "One can find in the history of science many instances to support the idea that the objectivity of a [natural] kind is not undermined by the fact that ordinary people have mistaken beliefs about its nature."¹⁹ Here she cites examples such as whales. Common-sense belief tells us (or once told us, anyway) that whales are fish. However, science classifies whales as mammals. This disagreement between science and common sense does not mean that whales do not exist; rather, it merely means that common sense is wrong. The upshot is that we can replace common-sense concepts with scientific ones when common sense is mistaken.

I think, however, that the analogy between whales and race is tenuous. In the disagreement over the status of whales, the scientist and the layperson can point to a thing they mutually agree is called 'whale', and the scientist can explain why it is more naturally lumped together with mammals than with fish, in terms of common properties like warm-bloodedness. This is a disagreement over how to classify one anomalous species in an otherwise fixed classification schema.

In Andreasen's account of race, however, there is a wholesale reshuffling of the classification schema itself. If, for instance, Andreasen and a layperson were to pick out a person of a certain genealogy and phenotype, where the layperson would classify that person as (say) 'Asian', and Andreasen would classify her instead as 'North East Asian', there would be a much different ensuing dialogue than that in the case of whales. Since Andreasen's classification schema puts the person in question closer to Caucasians than to South East Asians (while South East Asians are closer to Australians than to that person), it would soon become clear that the disagreement is not primarily about where to put this person in a fixed schema of classification, as it was in the case

¹⁹ Andreasen, "Race," p. S662; cf. S665.

of labeling whales either fish or mammals. Rather, the disagreement is over the classification schema itself, and, consequently, over each schema's underlying definition of race—one focuses on descent and breeding group, while the other focuses on descent and phenotype. This disagreement accounts for each party using a different label to refer to the same person, in contrast to the case of whales, where both parties can agree on one term—'whale'—to refer to the object picked out by that term.

At this point the layperson could reasonably assert that now the disagreement is not about how to classify the person in question; rather, it is about what classification schema and definition of race to adopt. And, if our layperson were informed that the common-sense understanding of race, centered on phenotype, is biologically unfounded, it would not be unreasonable for the layperson to reply that perhaps this simply means that there are no races. In this respect, the disagreement is very different from the whale case, where the layperson would be unreasonable to claim that there are no whales. In short, there is a stand-off here that was not present in the whale case, regarding which classification schema and definition of 'race' to choose. Reclassifying anomalous cases of misclassification (like whales) is not analogous to making wholesale changes in the classificatory system.

Accordingly, we need a further argument for revising our concept of race; saying that if we revised our concept of 'race', then it would be more similar to the case of whales than to some nonexistent kind like witches, is not itself a ground for revising our concept of race. Rather, one must argue for revising the concept of race as part of showing that race is more like whales than witchcraft. Only then, if we accept that prior argument, can we explore other conceptions of race.

As a final note, the following claims cannot fill in the missing argument: common-sense races are not biologically real, whereas cladistic races are; therefore, we should replace the folk notion with the cladistic notion. Such an argument begs the question of whether a biologically real notion of 'race' that is minimally related to the common-sense notion is preferable to a conventional, but biologically nonexistent, notion of 'race'. This, I take it, is one of the more crucial questions in the race debate, and any answer must argue for, rather than simply stipulate, one side over the other. Below (section VI), I will further examine the question of replacing or significantly revising common-sense racial discourse.

IV

The above argument against Andreassen's account of race relies on four key premises: (1) that account's nine races present a system of racial classification that is substantially different from folk racial classifications; this extensional difference is based on the facts that (2) the cladistic model's reproductively isolated groups are disappearing (and so its eroding ancestral element does not match up with the folk notion's persisting ancestral element) and (3) reproductively isolated groups do not map onto the phenotypical groupings that seem essential to the folk concept of 'race'; finally, (4) scientists are not themselves the arbiters of the meaning of 'race'. The first three points are about the meaning of race; the fourth generates a meta-question about how meaning gets settled in the first place. What, then, if there were a viable classification of human races that could disrupt one or more of these premises? Indeed, Kitcher's theory of race seems to bypass the objections in (1)–(3). In this section, I want to examine premise (4); I take up Kitcher's alternative in the next section.

The foregoing suggests that treating races as reproductively isolated breeding populations is too different from the common-sense notion of 'race' to provide an adequate biological account of race. To then conclude, however, that there is no biological basis of race might seem to presuppose a blanket premise that everyday folk, rather than professional scientists, have the authority to determine the meanings of purported natural kind terms. As a general principle, however, this presupposition is not so easily defended, particularly if we adopt the causal theory of reference as found in the work of Saul Kripke and Hilary Putnam.

In Appiah's analysis of the meaning of 'race', for instance, he adopts a method of "semantic deference" that follows Putnam's "linguistic division of labor," a justification for nonspecialists' engaging in discourse that uses terms with meanings that those nonspecialists cannot identify. The only way that such discourse is legitimate is if specialists can identify the meanings of those terms so that they may be freely used in folk discourse.²⁰ And, if we follow Putnam's Twin Earth thought experiment, we find that water, necessarily, means H₂O, even if nonspecialists point to a watery substance with a chemical composition of XYZ and call that 'water', in part because of the authority vested in specialists. Why, then, should it be a strike against Andreassen's model of biological racial realism if nonspecialists point to

²⁰ Appiah, "Race, Culture, Identity," p. 41.

a set of entities (for example, the “three major races”) and call those ‘races’ in a way that is different from what the cladistic approach would suggest? Thus one rejoinder to my objection to Andreassen might be that since the experts, rather than common sense, determine the meaning of natural kind terms, it is irrelevant whether the biological data can provide a referent for the folk concept of race.

As I see it, there are two problems with this rejoinder. The first is that semantic deference requires an expert definition of the term in question, and this requires both a defined set of experts and a (near) consensus on what the expert definition of the term is. Chemists, for example, can provide a unified expert judgment that water is composed of H_2O . In the case of race, presumably the experts include biologists and philosophers (among other parties, such as physical anthropologists). However, there is severe disagreement among those experts when it comes to race, and that disagreement exists on two levels. On one level, there is disagreement over which entities are supposed to be identified as races in the first place. As we have seen, Andreassen identifies the nine populations in Figure 2. At the same time, however, Appiah’s own examination of the concept of ‘race’ identifies the “three major races” of African, Asian, and Caucasian. Kitcher also identifies those as the three major races.²¹

On another level, even if that first question could be settled, there is widespread disagreement as to whether there is any biological reality to those racial classifications, and, if so, what the underlying biological referent is. For example, while Kitcher argues for the biological reality of the three major races, Appiah disagrees. Also consider Andreassen’s use of her main source of biological data, Cavalli-Sforza: while Andreassen takes those data to generate a plausible story about the biological reality of race, her source disagrees.²² In this respect, then, the expert consensus that water is H_2O is very different from the ability of experts to fix the meaning (both extensional and intensional) and ontological status of race—unlike water, there simply is no decisive expert opinion on the nature of race.

A second, related, point from above is pertinent here as well. We give preference to the views of experts over common sense only under certain limiting conditions. For instance, we prefer the specialist definition of water as H_2O , even when nonspecialists identify both H_2O and XYZ as ‘water’, only when there is reasonable overlap between the

²¹ Appiah, “Race, Culture, Identity,” p. 77; Kitcher, p. 87. Cf. notes 9 and 11 above.

²² Cavalli-Sforza, P. Menozzi, and A. Piazza, *The History and Geography of Human Genes* (Princeton: University Press, 1994). For Andreassen’s take on this disagreement, see “A New Perspective,” p. 213.

gross physical substances identified by specialists and nonspecialists concerning the object to be defined. To change the example, suppose chemists pointed to a substance *S*, with the chemical compound NaCl, and told nonspecialists that chemical analysis reveals that water is NaCl, despite the mass of nonspecialists calling substance *W* (with the chemical composition H₂O) 'water'. Nonspecialists would rightly respond that NaCl is called 'salt', not 'water'. This is the limiting condition on semantic deference: meanings of folk terms are determined from the ground up by folk usage, rather than from above by specialists, to the extent that technical categories have to overlap reasonably with the folk categories themselves (like the relationship between water and watery substances, but unlike that between salt and water). If there is no scientific backing to some given folk category, and if there is no reasonably overlapping technical category that does have scientific backing, then that is when we determine that there simply are no things of that kind (for example, witches). This point about "reasonable overlap" is not particularly radical: the claim is simply that at some point (anomalous cases aside) what terms designate becomes *rigidified*.

The problem with the chemists' approach in the water-salt example is not that they have incorrectly analyzed the chemical composition of *S*. Instead, they have made a prespecialist categorization mistake by identifying the wrong substance in need of chemical analysis: they chose to analyze gross macrophysical substance *S*, which is rigidly designated as 'salt', rather than substance *W*, which is rigidly designated as 'water', on the incorrect presupposition that anything with the chemical composition of *S* is designated 'water'. And this is much like the proposed problem with Andreassen's account of race. The objection presented above is not that there is faulty biology, or even faulty analysis of that biology, but, rather, that there is a pre-specialist categorization mistake. The groups offered up as races (for which we can grant that scientists have identified real biological properties) simply are not races, just as salt is not water.

So the causal theory of reference will not bolster Andreassen's cladistic approach.²³ To put it roughly, the causal theory holds that natural kind terms get "baptized" in an initial naming process, and then those terms rigidly designate the objects that they so name. If, later, it is discovered that the baptizers (or other competent language users) identified properties with the object that are not, in fact, constitutive

²³ For her part, Andreassen holds that her approach "does not depend on" the causal theory—see "Race," p. S662.

of the object, so much the worse for the folk definitions. On this theory, science, rather than folk usage, tells us what properties are associated with the term in question. The reason this does not aid Andreassen's approach is that her theory of race requires de-rigidifying the term 'race'. On that approach, 'race' no longer picks out the same macrophysical objects (say, the three major races), nor does it pick out a reasonably overlapping object, which subsequently could be determined by scientists to have a different underlying structure than competent language users previously thought.²⁴ Rather, Andreassen's approach picks out different objects entirely (the nine populations in Figure 2).

In short, then, it does not help Andreassen's cladistic approach to privilege specialist over nonspecialist understandings of race. For, first, the specialist understanding of race (as presented by Andreassen) does not reasonably overlap with the folk category; that is, the relationship between cladistic 'races' and folk races seems closer to the relationship between salt and water than that between H₂O and XYZ.²⁵ Second, in any case, unlike water, there is no scientific consensus that race is a real biological kind; there is no expert consensus about (a) what entities we should identify as races (the three major races, Andreassen's nine, and so forth), or (b) whichever entities we choose, whether they have a biological basis.

V

All of the above does nothing to dispel the idea that if we could formulate a cladistic model that matches the common-sense notion of 'race', race would be biologically real. As it turns out, Kitcher presents a biological picture of race that ends up being strikingly

²⁴ Nor, for that matter, is it like Putnam's case of lemons that have changed from yellow to blue, since the proposed theory of race is not that the original objects picked out as races have themselves undergone a constitutional change, like lemons that have changed from yellow to blue—see Putnam, "Is Semantics Possible?" reprinted in his *Mind, Language, and Reality: Philosophical Papers*, Volume 2 (New York: Cambridge, 1975), pp. 139–52.

²⁵ This is worded too strongly: perhaps there is an argument for seeing the relationship between Andreassen's race and the folk concept as closer to that between H₂O and XYZ, rather than salt and water. But, as I argued above regarding the analogy with whales, this is not evident, and it requires a non-question begging argument, rather than mere stipulation. Andreassen does offer one analogy in response: like the difference between the folk concept of race and Andreassen's concept, a similar difference is found with species and higher taxa, insofar as they are defined historically by specialists, rather than according to shared phenotypic traits; and, since we would not therefore decide that species or higher taxa do not exist, so we should not decide that races do not exist—"Race," p. S665. The case of species, however, is different from the case of race: 'species' is not de-rigidified in the way that 'race' has been by Andreassen's account.

similar to everyday usage. For Kitcher, a pure race (where purity merely connotes reproductive isolation, rather than any kind of racial superiority) is just a subset of *Homo sapiens*, where offspring are of race *R* when their parents are of race *R* and parents are of race *R* when their offspring are of race *R*. Like Andreasen's account, this identifies races not "on the basis of traits," but, rather, on "patterns of descent." Finally, two further conditions are necessary for this classification to have any "biological significance." First, the members of the pure races must "have some distinctive phenotypic or genetic properties." Second, the mixed-race population cannot be so large that once-existing pure races are no longer reasonably substantial parts of the general population (*op. cit.*, pp. 92–94).

So far, this account is much like Andreasen's. Indeed, Kitcher identifies inbreeding among populations—reproductive isolation—as the factor that ensures the required difference between interracial and intraracial genetic properties. A key point of distinction from Andreasen's picture, however, is that for Kitcher, reproductive isolation persists through the present. On the basis of what he admits to be limited data, Kitcher finds that there are comparatively low rates of sexual union among blacks and whites, though the same is not true of whites and (at least some populations of) Asian Americans (*op. cit.*, pp. 99–100). On this account, human reproductive isolation is not a matter of geographic isolation (though it once was); rather, it is a function of what can be extremely subtle isolating mechanisms, such as cultural barriers to interracial relationships and breeding (*op. cit.*, pp. 105–10). As for the claim that there have been periods of high rates of interracial reproduction in the U.S. (in particular, the widespread rape of black women by white slaveowners), Kitcher notes those high rates were nevertheless much lower than intraracial breeding; and, importantly, we can conceive of this gene pool modification as a "coercive restructuring of the minority race" (*op. cit.*, p. 102). Indeed, since the mechanisms that isolate breeding populations are in this way socio-cultural, for Kitcher race is both socially constructed and biologically real.

This picture, then, is much more faithful to the folk category 'race' than Andreasen's: unlike Andreasen's model, Kitcher (a) finds reproductive isolation, and so race, persisting through the present; and (b) identifies as the races (isolated breeding groups) traditional racial groupings, such as black, white, and so forth.

Nevertheless, I do not think that this picture is sufficiently faithful to the folk category. Kitcher acknowledges that he has only accounted for a difference between Africans and Caucasians in the U.S., while he has not provided evidence for a distinction between Asians and

Africans and little for a division between Asians and Caucasians.²⁶ Moreover, since this notion of race hinges only on reproductive isolation, different social classes that are reproductively isolated (such as landowners and peasants in England after the Norman conquest) would end up being classified as different races (*op. cit.*, p. 103).

Accordingly, this presents a classification of 'race' that is substantially different from the folk meaning of the term. Kitcher's treatment of the folk category 'Asian' is particularly inconsistent with folk usage. If there is no division between Asians and Caucasians or Asians and Africans, but there is a division between Africans and Caucasians, what happens to Asians in locations where the three meet (*op. cit.*, p. 100)?²⁷ Are Asians raceless? Or perhaps Asians become Caucasian, or African? Or do Asians combine with either Africans or Caucasians to form a new, fourth race? It is difficult to see how any of these options would be sustained, or how dramatic political implications could be mitigated. More to the point, however, none of them seems to match the folk categorization of race.

One might argue, however, that this problem arises only because of insufficient data on reproductive patterns. That is, if we had more complete data, we might find significantly higher rates of intraracial reproduction than interracial reproduction; and, since these reproductive behaviors are influenced by people's *perceptions* of what race is (rather than any biological facts), the resulting breeding populations are going to end up matching folk racial groupings.

This question leaves us waiting for more complete data. In the meantime, however, Kitcher's account faces two further problems. First, Kitcher himself admits that to be "a workable biological conception of race," there must be mating patterns between the races that are sufficient "to sustain the distinctive traits that mark the races (which must, presumably, lie, at least in part, in terms of phenotypes, since organisms have no direct access to one another's genes)" (*op. cit.*, p. 97). That is, while Kitcher's model identifies races as reproductively isolated breeding populations, and so phenotype alone is not the *basis* for race, this reproductive isolation is *significant* only so long as it maintains phenotypic differences between the races. But this exposes his model to old worries about the possibility of making sense of racial

²⁶ Kitcher does not mention Native Americans, and only briefly mentions Hispanics, in remarking that there are low rates of sexual union between Hispanics and Asians.

²⁷ For Kitcher, since interracial sexual unions may occur at different frequencies at different locations due to different isolating mechanisms at those locations (say, differences between Oakland and Memphis in the cultural barriers to interracial dating), racial distinctions may shift depending on the locale.

divisions based on phenotype. Naomi Zack puts it this way: "The visual and cultural markers for membership in the black race differ too greatly for there to be any physical traits shared by all black individuals, and likewise for whites."²⁸ By Kitcher's own standards, then, in order for race to be a significant category, we at least need an additional story about which phenotypic traits are supposed to go with which races. If Zack is right, such a story cannot be told.

Second, the races-as-breeding-populations model seems too broad, as evidenced by the counterintuitive result that peasants and landowners would have to be considered races. Folk usage, of course, distinguishes between socioeconomic classes (for example, peasants) and races (for example, "white people"). And this reflects an intensional difference in the two meanings of race: the folk concept of race seems to include a phenotypical component, including traits such as skin color, that does not correlate one-to-one with class status; class status is orthogonal to membership in any given race.

The more general point here is that potentially there are many breeding populations (based not only on class, but small regions, professions, cultures, and so forth), which are not accurately labeled 'races'. Indeed, it is possible that nonracial breeding populations even could generate distinct phenotypic features, such that one population has, say, "hitchhiker's thumb." On Kitcher's model, such a population would have to be called a 'race', which seems to stretch the meaning of 'race'. Thus, while Kitcher's account of race might seem to avoid significant divergence from the folk category of race, in the end there do seem to be substantial intensional and extensional differences between the two.

VI

Genetic findings recently published in *Science* by Noah Rosenberg and others might seem capable of plugging the holes that we have so far seen in the races-as-breeding-populations theory.²⁹ They report that while 93–95% of genetic variation occurs within geographic populations, a further 3–5% of genetic variation distinguishes five populations that correspond to five "major geographic regions": Africa, Eurasia, East Asia, Oceania, and America (where Eurasia includes Europe, the Middle East, and Central/South Asia). In essence, without prior identification

²⁸ Zack, "Life after Race," in Zack, ed., *American Mixed Race: The Culture of Microdiversity* (Lanham, MD: Rowman and Littlefield, 1995), pp. 297–307, here p. 303.

²⁹ Rosenberg, Jonathan K. Pritchard, James L. Weber, Howard M. Cann, Kenneth K. Kidd, Lev A. Zivovotovsky, and Marcus W. Feldman, "Genetic Structure of Human Populations," *Science*, CCXCVIII (December 20, 2002): 2381–85.

of one's geographic ancestry, genetic information can be used to identify that ancestry. Given that some disease risks are higher for different populations, this is particularly significant for health care treatment and epidemiological research.

It is notable that the authors of this study never use the word 'race' to describe the geographical populations they identify. Yet *The New York Times* reports that they were willing to say in interviews that "[the five major] regions broadly correspond with popular notions of race."³⁰ Can we therefore say that this is the biological basis for race?

While these data certainly get us closer to the folk concept of 'race', it still seems too distant to say that race is biologically real. Consider, again, both the intension and the extension of the folk concept. Throughout, I have emphasized the significant degree to which the intension of 'race' is tied to gross morphological features, such as skin color. The data reported by Rosenberg and his co-authors provide no indication that those features can be mapped onto population-based properties, and, again, there is the point from Zack that even if such data becomes available, it is difficult to see how we would identify even vague criteria for assigning certain phenotypic properties to one race and not to another.

Relatedly, the geographic populations identified by Rosenberg and his co-authors seem extensionally different from the folk notion of race. For example, consider that the population of Adygei, from the Caucasus (from which the term 'caucasian' originates), is lumped into the same major geographical population as the French, Palestinians, and Pathan/Pushtuns of Afghanistan. Perhaps we should say that these groups all compose one race, but I think that further argument is required for doing so. This point becomes particularly compelling when one considers the political implications of these categories. Might, for instance, a race-conscious Palestinian categorize herself within a group that does not include the French?

Political questions are important here not just because possible answers reveal something about the way we categorize ourselves. In section III, I noted that the new racial biological realism needs a further argument showing either that we should replace race with the distinct (and more biologically defensible) concept of breeding

³⁰ "Gene Study Identifies 5 Main Human Populations," *The New York Times* (December 20, 2002), Late Edition, Section A, page 37. It should be noted that geographic populations are not identical to breeding populations. In defense of the breeding population model, however, one might argue that reproductive isolation results from geographic barriers. A claim of this sort is made in the *Times*' report on Rosenberg et al., "Genetic Structure."

population, or that we should modify our conception of race in this substantial way. Such a position bears the burden of explaining how it would be practically possible to revise so significantly entrenched racial discourse.³¹

But in addition to the practical problems that would arise, there are also significant political hurdles facing any argument for either replacing race with another discourse entirely or substantially modifying the concept of race. For example, the classifications provided by both Kitcher and Andreasen struggle to make sense of the folk category 'Asian'. If our political practices ought to contain no descriptive falsehoods, then their accounts of race would disallow political tools focused on Asians, such as those that might fight uniquely anti-Asian discrimination. This is only one of the problems with the "black/white binary" model of race, which others have discussed more extensively.³² Furthermore, if the races-as-breeding-populations account ends up conflating different political axes, such as race and class (for example, English peasants), we might be left with impoverished political resources for dealing with social problems that are unique to each (which, again, others have discussed more extensively). The point can be stated briefly: a substantive revision to, or replacement of, the concept 'race' must show either that it can offer the requisite conceptual resources to justified political causes, or that those causes must be abandoned for the sake of conceptual coherence.

Yet one might take a different argumentative tack and argue that this substantive revision is already taking place, rendering any political or practical questions moot. After all, since scientific discourse is not wholly isolated from folk discourse, it is conceivable that the biologists' identification of breeding populations is itself changing the meaning of the folk concept of race, particularly in light of significant media coverage of these new biological data. While this change is conceivable, however, it seems doubtful that it has already been effected, given the divergence between the folk concept and the concept of races as breeding populations that has been discussed here. The source of this divergence is evident: the folk meanings of socially

³¹ One potential practical problem with the revisionist program is that such a revised concept may retain some hidden references to the previous, inadequate concept. Appiah expresses concern about this in "Social Forces, 'Natural' Kinds," in Abebe Zegeye, Leonard Harris, and Julia Moxted, eds., *Exploitation and Exclusion: Race and Class in Contemporary US Society* (London: Hans Zell, 1991), pp. 1–13, in favor of abandoning race-talk: "if you want to talk about morphology, talk about morphology; if you want to talk about populations, talk about populations" (p. 12, n. 9).

³² See Linda Martín Alcoff, "Latino/as, Asian Americans, and the Black-White Binary," *The Journal of Ethics*, vii (2003): 5–27.

charged concepts like race are influenced by social practices (which, in the case of race, have significant normative dimensions) that often are not themselves restricted to being biologically accurate, as much as we might like them to be. Thus, given the divergence between the folk concept of 'race' and the biological facts, racial discourse seems to be at a crossroads: either we must acknowledge that we have no biological basis for that discourse, or the meaning of 'race' must be changed to reflect the biology. In this case, the pressing question is one of social policy: Should such a change in racial discourse be effected? The suggestion here is that any argument in favor of this substantive revision requires a substantive defense against the potential political problems just raised.

VII

All of the above leaves open the possibility that there might be some as yet undiscovered biological basis for race (though any such account of race would need to respond to Zack's challenge that there simply are no phenotypic traits shared by all blacks or all whites). It also leaves intact the idea that we might profitably make distinctions between humans based on reproductively isolated breeding groups, even if we do not cash out race in these terms. Finally, the arguments made here leave open the possibility that race might be real as a social, if not biological, kind. The foregoing, however, does suggest that we have not yet been given an adequate argument for holding that breeding populations are the biological basis of race.

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