CHAPTER 11

RACE, DEFINITION, AND SCIENCE

ALBERT ATKIN

Debates over the reality of race often rely on arguments about the connection between race and science—those who *deny* that race is real argue that there is no significant support from science for our ordinary race concepts; those who *affirm* that race is real argue that our ordinary race concepts are supported by scientific findings. However, there is arguably a more fundamental concern here: How should we define race concepts in the first place? The reason I claim that this definitional question is more fundamental is that our handling of the underlying definitional problem often determines the scientific support our ordinary race concepts need, and importantly the likelihood of finding such support. In short, the definitional question, "How do we define race?" often undercuts the question of whether race is scientifically meaningful.

In what follows, then, we shall address the definitional question by dividing the terrain into two parts. First, we shall examine the definition of race in ordinary nonscientific contexts. After all, if debates about the reality of race concern the reduction of ordinary concepts to counterparts in biological science, we had better be clear about what our ordinary concepts are, where they come from, and whether it makes sense to ask about the prospects of *naturalizing* them, that is, of turning their study over to the empirical sciences. Second, we shall examine the definition of race from the viewpoint of science itself. After all, we need to know which putative race concepts are available within current biological science, whether they form viable scientific race concepts, and whether they represent convincing candidates for naturalizing our ordinary race talk. Throughout, we shall see that by addressing definitional issues first, we can make progress on questions about the support our ordinary race concepts might receive from biological science, and do so without becoming swamped by complex specialist argument about the interpretation of cutting-edge science, which is a virtue of starting with definitional questions.

Ordinary Definitions of Race

The first area we shall examine is the definition of our ordinary race concepts and racial categories. In particular, we shall look at three common suggestions for recovering ordinary

definitions—from origins, from "the folk," and from the armchair—before identifying issues with each of these methods. Finally, we shall look at just what the broader implications of this are for any attempt to assess whether or not race is scientifically meaningful.

Definition from Origins

A common method of defining ordinary race concepts in philosophy is to identify the origin of present race talk (Appiah 1996). The standard view is that race concepts first emerged during the age of colonial expansion and were cemented by the endorsement of Enlightenment science (Zack 2002, 2–3). So, for instance, the need to justify slavery and the colonization of the "New World" led to claims that different groups are divided by essential differences in character, appearance, intelligence, and morality. At the same time, a set of supporting racial definitions emerged in the work of such taxonomists as Linnaeus (1758/1997). Of course, we now find these Enlightenment racial taxonomies to be scientifically baseless, but the definitional claim here is that current ordinary assertion about race is derived from and related to the assumptions and assertions of the originating period. What this means, then, is that if we want to define our ordinary concept of race and racial categories, then we need do no more than acknowledge the authoritative role that this origin plays and proceed to recover ordinary concepts by looking to expert opinion of the past.

Definition from "the Folk"

A second method is to look at the assertions and assumptions of ordinary language users more directly. Put simply, if we want to define ordinary race concepts, then we ought to examine ordinary assertion and practice. Although it is unlikely that ordinary speakers could deliver fully fledged definitions of what they mean by "race," because we behave and speak in ways that characterize and categorize people racially, we have a ready source of useable material from which to recover ordinary race concepts. For example, governments frequently use census taking to obtain statistics about their citizens, and the collected data often include information about race and ethnicity. This gives a partial guide to ordinary thought about racial categories within any given country. Additionally, we can discover common beliefs about race among "ordinary folk" by simply asking questions and conducting social research (Morning 2009). This means that we can examine ordinary thought and practice directly, and if we want to define an ordinary race concept, then we need do no more than to talk to ordinary people about race.

Definition from the Armchair

A third method for defining ordinary race concepts uses the tools of philosophical analysis. In broad terms, this project uses the familiar "armchair" method, whereby we derive definitions of interesting concepts from our philosophical intuitions, and then test and amend those definitions in light of *problem cases* derived from thought experiments. This method, commonly known as the *Method of Cases*, is a frequently used philosophical tool—the definition of knowledge as *justified true belief*, and the many suggested counterexamples (known

as Gettier cases) that seemed to undermine this definition is a particularly instructive example of how the Method of Cases works. Importantly, though, it would seem that this method should be as applicable to the analysis of race as to any other philosophically interesting concept (Hardimon 2003, 441). What this means is that if we want to define an ordinary concept of race, then we need do no more than look to the results of our best philosophical intuitions.

These three methods are not the only means of defining our ordinary race concept, since a hybrid of folk and armchair views has also been proposed (Glasgow 2009), but they do represent the main methods used in the philosophy of race. More important, there are problems with these methods that have ramifications for how we assess whether race is scientifically meaningful. In what follows, we shall look at three related problems for these methods of answering the definitional question, before drawing out how this impacts on our answers to questions about the scientific reality of race: the range of origins, selection of folk authorities, and the authority of armchair philosophy.

Range of Origins

The problem with definitions derived from origins is that there are a range of possible origins for our ordinary race concepts. On a rather standard picture, where "contemporary talk about 'race' [is] the pale reflection of a more full-blooded race discourse that flourished in the last century" (Appiah 1996, 38), the presumed experts are figures such as Carl Linnaeus (1758/1997) or Immanuel Kant (1777). The scientific emptiness of these expert race concepts—for instance, Linnaeus erroneously thought characteristics such as greed and shame were due to race, whereas Kant thought that race was fixed unalterably by climate—is enough to mean that ordinary race concepts derived from them are similarly empty. However, we can see that this argument rests heavily on which historical figures are claimed as the originating source. Why think that the pseudo-scientific concepts of Linnaeus give the origins of current ordinary concepts? Why not figures such as W. E. B. Du Bois or Frederick Douglass (Taylor 2000)? Indeed, why not prominent recent thinkers and figures who have said much in the public arena about race? The concern here is simply that if historical expertise is supposed to give us our current ordinary concepts of race, the definition will depend very much on which figures and which origins are taken to be relevant, because a Kantian origin for race thinking will give a very different ordinary definition from a Du Boisian one. As a means for recovering an ordinary definition, then, things are less clear than they might initially seem.

Selection of Folk Authorities

The problem with definitions derived from "the folk" is that the definition we obtain will largely depend on who we talk to. That is, how do we identify which "folk" count? It is well documented that different countries have different histories of racial formation. For example, the racial history of the United States suggests that ordinary race talk, focusing on skin color and ancestry, identifies four or five racial groupings (Omi and Winant 1986). By contrast, the racial history of Brazil, focusing on a wider class of skin colors and much less on ancestry, identifies as many as twenty-eight racial groupings (Telles 2004). Such sociological evidence of variation in race concepts across different groups makes it clear that what we ask of any scientific naturalization of such concepts would need to vary quite starkly. Biological

evidence needed to support a folk definition derived from the United States would look very different to that needed to support a folk definition derived from Brazil.

The Authority of Armchair Philosophy

The problem with definitions derived from "the armchair" is that it is unclear why we should think that these philosophical intuitions, these methods, or these philosophers are the ones that should define our ordinary concept of race. Part of the worry here stems from recent work in experimental philosophy, which shows that philosophical intuitions are not the stable and objective guide that many take them to be (Machery et al. 2004). In addition, two related worries are quite specific to applying this method to questions of race.

First, modern analytic tools and methodology were developed as a means of producing general accounts and definitions by abstracting away extraneous detail. Problematically, race (along with class and gender) has traditionally been treated as one of these extraneous details. Consequently, it becomes hard to see how a methodology that excludes such features can then be used as a stable source for recovering the ordinary definitions of those concepts. Second, it is not clear that standard analytic methods are well suited to defining our ordinary race concepts, because using politically significant terms such as "race" in the *Method of Cases* seems to render intuitions unstable. An account of how standard intuitions about meaning give way when dealing with gendered terms can be found in Saul (2012). It would be unsurprising to find that similar things hold for racial terms.

It therefore seems that there are problems with all three definitional methods of origin, folk, and armchair philosophy due primarily to the variety of experts, folks, and intuitions that are available for defining ordinary race concepts. But what is the significance of this general difficulty for questions about the scientific reality of race? Given the range of methods, our ordinary definitions will depend on which method we choose, and they will then further depend on which experts we think matter, or which folk we talk to, or which intuitions and thought experiments we think are important. There is no reason to think the definitions recovered from these various methods will deliver anything like a stable or uniform account of race and racial categories, but ultimately, this is what makes the definitional problem so crucial to issues about the scientific reality of race. On the one hand, it is unclear at a first pass which ordinary race concept we are (or should be) asking biological science to naturalize. On the other hand, even if it turns out that we can offer an answer to the question of whether or not some particular ordinary race concept is scientifically meaningful, it is not obvious that this marks a very significant advance. Does showing that we cannot naturalize an ordinary race concept derived from a Kantian origin show that race *is not* scientifically meaningful? Similarly, does showing that the ordinary Haitian folk concept of race *is* scientifically meaningful thereby prove the scientific reality of race in an appropriately robust sense? I suspect the answer to each of these questions is "no."

The Scientific Definition of Race

Turning now to the second way of approaching the definitional concern, how might we go about trying to define race by starting with the available science? After all, it is not an

incontestable fact that when we are trying to address whether race is scientifically meaningful that we *must* begin with our ordinary concept of race, or even think that our ordinary use *must* be the primary driver in any reductive project. However, defining race scientifically is not so straightforward as with the ordinary race concept, and this is because (except in certain very specific arenas) "race" is not a concept much used in science. What this means is that we are instead looking for an appropriate counterpart concept in the biological sciences that can be defined as a *scientific race concept*. To judge whether our putative scientific race concepts are good definitions, however, it seems reasonable to use the following three criteria:

First, any putative scientific race concept needs to be *well motivated*. What this means is that: first, the concept should be a well-recognized and widely acknowledged scientific concept—*oxidation* and *chemical reaction* would be well-recognized explanations for cell energy; *orgone* or *odic force* would not. And, second, the concept needs to have broad application across the biological sciences and include nonhuman populations.

Second, any putative scientific race concept needs to be *applicable to human populations*. So, for example, "strain" is a *well-motivated* taxonomic concept—it is recognized and used to describe various microorganisms, and, in laboratory circumstance, rats and mice. However, it does not apply to human populations—there are different strains of influenza virus, but there are not different strains of humans.

Third, any putative scientific race concept needs to *approximate ordinary use* well enough to either map on to that usage or to provide good reasons for changing ordinary usage. To be clear, there is often variation between the way ordinary speakers and scientists think of the same concept. However, this need not be an automatic barrier to using scientific definitions to underpin ordinary usage, and it is seldom the case that divergence between scientific and ordinary use leads us to conclude that the science is empty. In definitional terms, then, this means that small or negligible differences between a scientific race concept and ordinary use should not be treated as automatically terminal—in this approach, scientific definitions are leading the way, and ordinary use can certainly be informed by scientific fact and discovery.

With these three criteria in place, then, we can now look at some possible scientific race concepts from the biological sciences. Although there are various concepts we might examine here, we shall only look at the two most common suggestions for defining a scientific race concept—*subspecies* and *population clusters*. In what follows, we shall outline the details of these concepts in turn, judge them by the three criteria we have introduced here, and assess the impact of these definitional issues on the question of whether or not race is scientifically meaningful.

Subspecies

The most common suggestion for defining a scientific race concept is "subspecies." However, Richard Lewontin (1972) famously argues that ordinary race talk is biologically meaningless by using "subspecies" as a scientific race concept. Subspecies are commonly defined as isolated breeding populations within a species whose members could still breed with the members of the larger species population and produce fertile offspring. In terms of our three

criteria for defining a viable scientific race concept, it is clear that "subspecies" is *well motivated*, because it is a widely recognized scientific concept in the biological sciences, and it is used as a natural division across nonhuman populations. However, once we begin to look at the second criteria, *applicability to human populations*, the viability of defining a scientific race concept in terms of "subspecies" begins to look problematic.

The problem is rather simple: human populations are not dividable into subspecies. To see why, we need to understand that a more precise definition of "subspecies" uses a well-recognized standard for marking genetic variation between subspecies. To keep matters reasonably simple, consider that individual members of any species will be highly genetically similar, but that there will nonetheless be some genetic variation among them. In humans, for instance, although we are over 99 percent genetically similar, we can still find small amounts of genetic difference between two individuals. In terms of defining subspecies, however, we need to know how much of this genetic variation is due to the normal differences we find between individuals from the *same* breeding population, as opposed to variation we find between individuals from *different* breeding populations. The greater the amount of variation attributable to *cross-group* differences, as opposed to *in-group* differences, the more likely it is that we are dealing with individuals from different subspecies. Importantly, though, in the biological sciences the standard threshold for marking the difference between two subspecies is where at least 25 percent of variation between two individuals from different breeding groups is attributable to *cross-group* rather than *in-group* difference (Smith et al. 1997).

To give a slightly extended illustration of the importance of the subspecies concept in the biological sciences, and the use of this 25 percent threshold in determining the existence of subspecies, we can look at some recent work on genetic variation in Common Chimpanzee breeding groups. It is widely recognized that there are five distinct breeding populations of the Common Chimpanzee species: *pan troglodytes versus* (found in Upper Guinea); *pan troglodytes ellioti* (found in West Cameroon); *pan troglodytes troglodytes* (found in Central Equatorial Africa); *pan troglodytes schweinfurthii* (found in Western Equatorial Africa); and *pan troglodytes marungensis* (found in Eastern Equatorial Africa). However, these five breeding groups are taken to constitute only three subspecies—*pan troglodytes versus; pan troglodytes ellioti*; and *pan troglodytes troglodytes*—because the genetic variation between the three Equatorial African breeding groups attributable to cross-group difference *is less than* the 25 percent threshold for subspecies difference. Consequently, all three of the Equatorial breeding populations are treated as the same subspecies—*pan troglodytes troglodytes*. By contrast, the genetic variation between the three recognized subspecies attributable to cross-group difference is around 30 percent—clearly above the 25 percent threshold for subspecies differentiation (Kaessmann et al. 1999; Gonder et al. 2011).

Although the use of genetic variation in Common Chimpanzee breeding groups to determine subspecies is instructive, more interesting is that by comparison, cross-group genetic variation between humans populations falls a long way short of the 25 percent threshold for subspecies differentiation. For example, Lewontin (1972) suggests that while any two human beings are 99.8 percent genetically similar, only 7 percent of the 0.2 percent genetic difference between them is attributable to cross-group variation. Indeed, more recent estimates of genetic variation in humans derived from 2002 research (Rosenberg et al. 2002) and used for comparison in Common Chimpanzee studies (Gonder et al. 2011) suggests that as little as 4 percent of variation in humans is attributable to cross-group variation. So what does

this mean? Well, it means that cross-group genetic variation in humans falls well below the 25 percent threshold needed to mark subspecies. As a result, if subspecies fails to be applicable to human populations, then subspecies is not a viable scientific race concept. In terms of the scientific reality of race here, we can see that addressing our definitional question has given us one answer: "subspecies" is not a viable definition for a scientific race concept—it is a *well-motivated* definition, but it is not *applicable to human populations*. Therefore, any attempt to naturalize our ordinary race concept using "subspecies" looks wrong-headed from the start.

Population Clusters

Although it is widely acknowledged that "subspecies" is not a viable definition for a scientific race concept, there are alternative ways of dividing populations in the biological sciences that neither rely on subspecies concepts nor the related standards for counting in-group and cross-group variation. Most prominently, recent techniques used in population genetics to identify the structure and ancestral hierarchy of a given population have led to claims that *population clusters* are a viable candidate for defining a scientific race concept (Spencer 2015). So, what are population clusters, how viable are they for defining a scientific race concept, and how might they be used to argue for the reality of race?

Population geneticists identify and genetically profile various local populations or breeding groups, by adding progressively more and more local groups to their picture, to build a genetic profile of larger population groups, up to the level of recognized subspecies and species. With this genetic profile at hand, geneticists can use computer analysis to detect where genetic material and differences cluster (to however small a degree) across the larger population, and that gives them a picture of the structure and hierarchy of the larger population. For example, using population clustering analyses on the five breeding population groups of Common Chimpanzee mentioned earlier, population clustering techniques support arguments for there being only three subspecies and they are also able to identify genetic clusters that suggest the following: the *pan troglodytes versus* subspecies from Upper Guinea has been a separate breeding population for fifty-four thousand years; *pan troglodytes ellioti* from West Cameroon has been a separate breeding population for the last three hundred thousand years; the three breeding groups making up the *pan troglodytes troglodytes* subspecies in Equatorial Africa only formed separate breeding populations in the last one hundred thousand years or so (Gonder et al. 2011). These observations about how the larger population forms genetic clusters, what the larger ancestral structures are, the age at which different breeding groups form, and the genetic distance between them are interesting and useful, and they have been applied by population geneticists to many different species. Recently, this population clustering analysis was applied to humans, and the results of the 2002 study by Noah Rosenberg and colleagues (Rosenberg et. al. 2002) have proved to be of particular interest.

The Rosenberg study used population clustering techniques on more than one thousand individuals who, by self-identified race and ethnicity, came from over fifty ethnic groups. With the larger genetic profile at hand, the Rosenberg study used computer analyses to partition the larger population into various clusters, ranging from two to six. The results that reignited the question of whether or not race is biologically meaningful arose when the larger genetic group was partitioned into five clusters. The five clusters identified by computer

analysis seemed to group individuals in the study into a set of populations that mirrored the racial groups suggested by participants' self-identified races. More specifically, the underlying genetic clustering grouped individuals into one of a sub-Saharan African group, readily identified as an African race; a North African and West Eurasian group, readily identified as a Eurasian race; an East Eurasian group, readily identified as an Asian race; a North and South American group, readily identified as a native American race; and finally an Oceanic group, readily identified as a Pacific Islander race. The important question that this work presents is, "Could population clustering give us a viable scientific race concept capable of supporting or naturalizing our ordinary race concepts and racial categories?"

Some have attempted to address the scientific results and claims made for the Rosenberg study directly. For example, similar cluster studies (Behar et al. 2010) seem to suggest that the sample used in the Rosenberg study is not fine-grained enough; that is, the number of participants was too small and from too narrow a geographical location (all participants were American). Our aim here, however, is not to question the science directly but to address the underlying definitional question in terms of the three criteria that we identified earlier: Is population clustering *well motivated, applicable to human populations*, and does it *approximate ordinary usage* closely enough, to either map onto current use, or provide good reasons to change ordinary use? If the answer to these three questions is "Yes," then "population clusters" seems to offer a good definition of scientific race.

It seems clear that "population clusters" meets the first two conditions. It is *well motivated* in virtue of being both widely acknowledged and applied to many nonhuman populations; and we can see from the Rosenberg study that it is *applicable to human populations*. For "population clusters" to be a viable definition for a scientific race concept then, it simply needs to *approximate ordinary use*, by either mapping or offering good reason to change ordinary usage. Arguably, though, things are not so clear cut here, and at least two issues seem to present themselves.

First, ordinary use and "population clusters" seem to make different assumptions about how neatly human populations are divided. Population clusters do not give us neat divisions between groups, and they allow for admixture or interbreeding between different populations. This means that individual membership in a population cluster will be a matter of degree, rather than an all-or-nothing affair. Our ordinary race talk, however, does not seem to allow for partial membership in a racial group. Races seem to be treated as entirely separate entities with membership in one group excluding membership in another. This looks like an important gap between "population clusters" and ordinary thought and talk about race. That need not be the end of the matter, of course, so long as treating "population clusters" as a scientific race concept suggests good reasons for changing ordinary use. However, again, it is not immediately obvious that there are good reasons.

One clear problem is that, although it has been suggested (Spencer 2015, 49) that our recognition of "mixed-race" status suggests that ordinary commitment to the exclusionary nature of racial groups is already changing in favor of the partial membership suggested by population clustering, it is not entirely obvious that this true. Identities of mixed race just as easily prove the strength of our ordinary commitment to the exclusionary nature of racial groups, especially given social and philosophical research (see Zack 1993) suggesting that mixed-race individuals are not clearly identified as members of two (or more) races, and are instead seen as either forming another separate racial group, or in the case of a black-and-white mixture in the United States, as wholly a member of one race (i.e., black).

The second issue that tells against "population clusters" approximating ordinary use is that it is not clear, despite claims made, that the five Rosenberg study clusters do map onto ordinary racial categories in a compelling way. To begin with, as we have already noted, the nature and number of racial categories vary across different social and national racial contexts. As a result, the *best* that we can say about the apparent mapping of the five Rosenberg study clusters to five ordinary racial categories is that this mirrors ordinary usage *in the United States*. Indeed, some advocates of reducing our ordinary race concepts to "population clusters" endorse the view that we should think of these issues in terms of the reality of US racial groups (see Spencer 2015, 46–47). However, this move looks problematic for two reasons. On the one hand, by conceding that ordinary race concepts are locally and socially constructed, it makes the claimed discovery that partitioning populations mirrors ordinary usage in *one* of these local contexts, looks accidental at best and suspicious at worst. On the other hand, it looks as though ordinary users of race in the United States would have to accept that their concept of race is not universal and their usage should be amended. It is difficult to see how arguments about population clustering could be used to do that.

Restricting scientific support to *US race* is not the only problem with the mapping claims. On closer inspection, the five population clusters and the five racial groups of ordinary usage do not seem to mirror each other all that neatly. In terms of ordinary US racial categories, the Eurasian group would need to map to the "white" racial category. However, many individual members of the North African/Eurasian population cluster of the Rosenberg study are unlikely to be identified as "white" in ordinary use. Ordinary American usage is unlikely to assent to any claim that a Northern European, a North African, and a Persian Tajik are all of the same race, because only the Northern European would be called "white." There may be five population clusters in the putative scientific concept, and five racial groups according to ordinary usage, but it is far from clear that they mirror each other closely enough, or that they would not require quite drastic changes in ordinary usage.

With all this said, then, it looks as though "population cluster" is not a viable definition for a scientific race concept. It is *well motivated* and it *applies* to human populations, but it does not *approximate ordinary use* nearly so well as initial claims suggested. In particular, it requires a drastic change in the way that ordinary language users think of the separation of racial groups, and it needs to concede that it captures only one among many ordinary social practices for defining race—a rather counterintuitive result for most ordinary users.

Conclusion

What we have seen here, then, is that questions about the scientific reality of race can be approached by looking at the more fundamental issue of how we define race in the first place. Importantly, the variety of means by which we can and could define our ordinary race concept makes the question of potential scientific support look intractable. Similarly, if we set about solving the definitional question by finding putative concepts from biological science to serve as scientific race concepts, we do not seem to have any viable candidates. Neither "subspecies" nor "population cluster" meet all three of the criteria needed to define a viable scientific race concept: "subspecies" is *well motivated*, but not *applicable*; "population cluster" is *well motivated* and *applicable*, but does not *approximate ordinary usage*. It may be that in

the long run we can find ways to recover our ordinary definitions in a manner that makes the question of scientific support tractable. Or we may find viable scientific race concepts from the biological sciences. At any rate, by attending to definitional matters, as we have here, we will arrive at a clearer sense of where we really stand on whether or not race is really real.

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