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M'charek, A.

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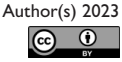

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Curious about race: Generous methods and modes of knowing in practice

Amade M'charek

Abstract

What is race? And how does it figure in different scientific practices? To answer these questions, I suggest that we need to know race differently. Rather than defining race or looking for one conclusive answer to what it is, I propose methods that are open-ended, that allow us to follow race around, while remaining curious as to what it is. I suggest that we pursue *generous methods*. Drawing on empirical examples of forensic identification technologies, I argue that the slipperiness of race—the way race and its politics inexorably shift and change—cannot be fully grasped as an 'object multiple'. Race, I show, is not race: The same word refers to different phenomena. To grasp this, I introduce the notion of the *affinity concept*. Drawing on the history of race, along with contemporary work in forensic genetics, the affinity concept helps us articulate how race indexes three different scientific realities: race as *object*, race as *method*, and race as *theory*. These three different, yet interconnected realities, contribute to race's slipperiness as well as its virulence.

Keywords

race, affinity concept, generous methods, facial morphology

University of Amsterdam, Netherlands

Correspondence to:
Amade M'charek, Anthropology, University of Amsterdam, Nieuwe Achtergracht 166, Amsterdam 1018WV, Netherlands.
Email: A.A.Mcharek@uva.nl

> I tried to give my sheep the opportunity to behave like chimps, not that I believe that they would be like chimps, but because I am sure that if you take sheep for boring sheep by opposition to intelligent chimps they would not have a chance. (Thelma Rowell, in Latour, 2000, p. 372)

Opening the conversation

In *The Trouble with Harry*, a black comedy by Alfred Hitchcock, we find ourselves on a sunny autumn day in the idyllic Vermont countryside. Harry is a corpse, and various people fear they might accidentally have had something to do with his death. But the real trouble with Harry is that he just won't stay buried. He pops up again and again, once with his socked feet sticking out from under a tree, then in the bathtub of one of the protagonists. Harry's corpse causes problems, but also constantly raises new questions: Who is Harry? Who was responsible for his death? Why does his corpse keep turning up? Recalling Goldberg's (2006, p. 338) observation that, in Europe, race has been buried and 'buried alive', Harry serves as a good metaphor for race. Indeed, *The Trouble with Harry* may help us attend to the 'haunting presence of race' (Haraway, 1997; Kowal, 2023; M'charek & van Oorschot, 2019) and its troubling 'absent presence' in science and society (Law & Singleton, 2005; M'charek, 2020; M'charek et al., 2014).

But what is race? One quick answer would be: Race is a biological difference between groups of people, and resonating with 19th-century race science, these groups can be ordered hierarchically (Barkan, 1992; Stocking, 1982). Race, then, is a biological reality, a fact, to be found on the surface, or deep down in the body. Another answer to this question would be that race is not biology, but rather a social construction (e.g. Fuentes, 2002; Roberts, 2011), an effect of social inequalities vested in our minds as well as our institutions. But the default nature of these responses can prevent us from taking the time to become really curious about race[1] and may stop us from raising questions, such as: What is race? What is it made to be? How does it figure in various scientific practices?

Posing such questions indicates we cannot assume we know what race is. So, how can we become more curious about it? How can we stay in the mode of curiosity, rather than immediately jumping to the critique of practices in which race figures?

Here is Foucault on the issue of curiosity:

> Curiosity is a vice that has been stigmatized in turn by Christianity, by philosophy, and even by a certain conception of science. Curiosity is seen as futility. However, I like the word; it suggests something quite different to me. It evokes 'care'; it evokes the care one takes of what exists and what might exist; a sharpened sense of reality, but one that is never immobilized before it; a readiness to find what surrounds us strange and odd; a certain determination to throw off familiar ways of thought and to look at the same things in a different way; a passion for seizing what is happening now and what is disappearing; a lack of respect for the traditional hierarchies of what is important and fundamental.
>
> I dream of a new age of curiosity. (Delacampagne & Foucault, 1980, p. 325)

Foucault notes that curiosity and care are related. They share Latin etymological roots via *curiositas, curiosus*, and *cura*: desire for knowledge, being careful, and care. To be curious about race might thus also suggest caring for race. We may think of caring as something that comes easily, or even feels good, when directed towards something we

value. Caring for the environment, for biodiversity, or humanity—these all seem politically and morally good things to do. But how can we care for something as ugly as race, something that has caused so much harm? Moreover, how can we care for something that is often elusive or hidden in coded language (Skinner, 2006; Wade, 2002), an *absent presence* (Bleumink et al., 2021; Law & Singleton, 2005; M'charek et al., 2014)? A first step might be to shift from caring for the object of inquiry to caring for the mode of relating with it, in this case, the methods we use to know it. Perhaps this is a call for what Law and Lin (2020) term care-ful research. Care and curiosity share an ethos of relating to the object of inquiry, a desire for knowledge that involves entering into a relation (Haraway, 1991a; Mol, 2008; Puig de la Bellacasa, 2012). Knowing and caring involve being open to (unexpected) modes of relating. To care for someone is to be open to what that person in that moment needs. Similarly, to produce knowledge should mean being open to how your subject matter might surprise you. Knowing and caring are necessarily open-ended (Law, 2004). Here, I want to explore modes of knowing race by introducing the concept of *generous methods*. Generous methods are not after quick and conclusive answers, but rather entail a process of crediting our 'objects of research' with opportunities to surprise, move, and change us as we come to know them.

Curiosity, care, and methods

It has taken me ten years to write this piece. I am still in the process of understanding this wild thing we call race. I have been working on race, at times as part of a research team,[2] since 2010, when it was not often spoken of in the Dutch context. In those days, the word race was rarely uttered, to the point where I would flinch when I heard it. Its political weight historically and at present is frightening (see Goldberg, 2009), contributing to the becoming taboo of the word.[3] While the English word 'race', largely due to the U.S. history of anti-racism and the civil rights movement, has come to stand for the social construction of race, the Dutch word '*ras'*, like the German '*Rasse'*, is closely linked to the long history of colonialism, race science, and World War II. *Ras* thus tends to refer to innate biological differences (see Lipphard et al., 2018; M'charek, 2022b). In Dutch society, the fixation of and assumed explanatory power of cultural or ethnic differences for social phenomena, from health disparities and educational attainment to a propensity for criminal activity, remains prevalent (De Koning, 2012; Essed & Hoving, 2014; Helberg-Proctor, 2016; M'charek, 2013, 2022a; Wekker, 2016). This politically charged absent presence poses a challenge: How can we know race in practice, in contexts where race is not spoken of?

Studying race as an absent presence, I take inspiration from Law and Singleton (2005), who developed the concept in an analysis of the erraticness of alcoholic liver disease. They suggest that 'not everything can be brought to presence' (p. 342). An object's presence necessarily entails making other things absent, but also, its presentness may be dependent on these things that are absent.

Analyzing absences can be crucial for grasping the configurations of erratic and slippery objects. One absence that has proven key to knowing race in practice is its sedimented history. The knowledge produced as part of race science did not disappear, but was materialized in routine sites such as archives, protocols, methods, and technologies (Braun, 2014; M'charek, 2014). Attending to that history is particularly important

because race is assumed to be irrelevant or dead in contemporary societies, even as racism and racial violence are alive and kicking. However, taking that history seriously, for example, by tracing the afterlives of race in scientific practices, is crucial to recognizing that words and practices of doing difference, seemingly indifferent to race, both resonate with and are dependent upon a history of racialization (see e.g. Hopman, 2021; Hopman & M'charek, 2020; Jong, 2022; M'charek, 2020; M'charek & van Oorschot, 2019). A naïve, yet dominant, post-World War II idea about the nonexistence of race has contributed to the assumption that the history of race and race science are a thing of the past and do not matter (also in the sense of materializing) to the here and now (Goldberg, 2008; Lipphardt, 2012; Skinner, 2006). Making histories of race relevant to the present is therefore a way of attending to the practices and materialities that help enact race and the multiple temporalities that they fold together to do so (Baedke & Delgado, 2019; Kowal, 2023; M'charek, 2014; Nieves, 2020; Schramm, 2020).

Studying race as a set of material and temporal practices reveals that it is a relational object configured differently in different settings (M'charek, 2013), making it an 'object multiple', in Mol's (2002) understanding. While conducting this research with my team, I grew interested in and irritated—in the sense of feeling provoked—by a frequent statement scientists, geneticists, and physical anthropologists make: 'We don't do race anymore.' The statement is partly a response to the common idea that race is a societal construction and partly related to a focus on the individual in a number of practices, such as in forensics. In the everyday work of science, though, race is at work in so many places, in presentations and publications, in collections of samples and the methods for clustering the results. What is going on here? I wondered. What if we are not talking about the same thing? What if the word refers simultaneously to different realities?

Leaving behind the default approaches to what race is—a matter of biology or of culture—might invite us to seek novel modes for relating to the issue. I want to suggest that race is more than just an 'object'. It is also a 'method' and a 'theory'. In making this suggestion, this essay contributes to an ongoing concern in science and technology studies (STS) with the performativity of methods (Haraway, 1991b, 1992; Law, 2004; Law & Ruppert, 2016; Law & Urry, 2004; Lury & Wakeford, 2012) and how methods interfere with the realities we study.

There is no question that methods are performative. Studying science as a practice through ethnography, for example, brings about the messiness and sometimes irratic nature of scientific work, whereas a study of science based on published scientific work will glans over such processes but help understand the geneaology of scientific thought or its development within a scietific network. A different but classic example is Hacking's (1986) 'Making up people', in which he shows that statistics do not simply represent groups of people, but through classifications bring them into being. In STS, the turn to practice and to 'follow the actor' has created sensitivity to modes of knowing and the ways these shape objects of interest across sites and practices. Law's (2004) *After Method* revisits a series of classics within the tradition of Actor Network Theory (ANT) and after, to consider the methodological innovations these studies propose. Books such as Latour and Woolgar's *Laboratory Life* and Mol's *Body Multiple* contribute radical approaches to how knowledge is produced, convincingly showing that objects of study cannot be disentangled from the methods for studying them, with the methods in fact, co-shaping and co-producing the objects.

The studies revisited by Law (2004) can be read as a collection of interventions into standard social science methods. Such methods, he argues, are, more or less, based on the idea that reality is out there and is independent of human action, that reality precedes us and is composed of a definite set of relations, and finally that reality and the world comprise a common that is the same everywhere (Law, 2004, p. 24). By contrast, the ANT studies that Law revisit make clear that methods are not simply tools that help us acquire a clear view on a pre-given reality, but devices that co-shape reality and the very objects they aim to 'discover'. Methods are generative (Law et al., 2013; Law & Urry, 2004; Ruppert et al., 2013). Now, if methods are generative, it is important to pause and consider how they help us engage with our objects of research. This is even more urgent when an object is difficult to grasp, such as race. Law writes: '[Social] science should also be trying to make and know realities that are vague and indefinite *because much of the world is enacted in that way*. In which case it is in need of a broader understanding of its methods' (2004, p.14, emphasis in original).

In this article, I foreground methods for studying race in practice, proposing *generous methods* to research this thing that keeps slipping through our fingers. In its common meaning, 'generous' denotes a readiness to give, and perhaps in this case, to give more of our attention to our object of study (e.g. Gomart, 2002; Law, 2004). But there is more to it, if we consider the etymology of the term (Science of Generosity, 2023). 'Readiness to give' is rooted in its original meaning, which is 'of noble birth'—which might sensitize us to problems with generosity. The Latin *gener-* is the verbal stem of *genus*, meaning kin, clan, race, or stock, and the Indo-European meaning of *gen* is to beget (to cause, to effect). 'Generous' then evokes (1) sharing, giving and plentitude, (2) relations and connections, and (3) effecting, bringing about, and making. Generous methods, I want to suggest, embody an ethos of 'going out of our way' for our objects of study giving them our time and attention, even, or especially, when those objects are emotionally or politically difficult. While we may not necessarily love these objects, generous methods invite 'care' for the practices in which they figure and through which we come to know them (Dányi, 2017; Law, 2021; Law & Lin, 2020; Mol et al., 2015; Puig de la Bellacasa, 2011).[4] Generous methods also encourage material semiotic takes on our objects of study, to view them not as singular entities, but as inherently relational to the practices in which they figure and thus with the ability to shift and change depending on those practices. This relational entanglement necessarily includes also our methods of studying them as our objects are also effects of modes of knowing, modes of bringing them into view. I want to suggest that curiosity, as proposed by Foucault, is at the heart of generous methods. Thus generous methods are generative, advance a careful inquisitiveness into our objects of study as to articulate their relationality in practice. While I initially focused on race as an object (a relational object, an absent presence, a folded object), I here pursue generous methods to move beyond the 'objectness' of race, that is, as a mode of clustering people, and to attend to it also as a method for assembling material and a theory for analysing data. To grasp these different realities of race I introduce the *affinity concept* that I elaborate below through a short detour into the history of race. In the second part of the paper I analyse a series of examples, mostly from forensics, research on face morphology and genetics, to demonstrate how race works as an affinity concept, how it figures as object, method and theory and draws together different realities to generate something new.

Race trouble

'We don't do race anymore.' This statement and variations on it have resonated in my mind for quite some time. How can I not regard it as ignorant or naïve? I started to ponder the possibility that race is not race. Race, an extremely powerful and potent concept, might have lured us into thinking in terms of 'a one-world world' (Law, 2015), whereas, in fact, we are encountering different realities altogether. To elaborate what this might mean, especially because the past is never quite left behind, I present a brief history of race, with a focus on the European context. However, rather than the common approach to how the idea of race evolved and developed to be superseded by newer and more contemporary ideas (Banton, 1998; Barkan, 1992; Hannaford, 1996), my aim is to broadly sketch three different approaches to race still relevant today, namely as lineage/genealogy, resemblance/appearance, and tool. I will use these takes on race to elaborate on the affinity concept.

The word *race* stems from Italian *razza* and Spanish *raza*, historically referring to the non-human animal world, to indicate breed, genealogy, or descendent from a common ancestry (Banton, 1998). In the 16th century, the English and French word *race* was also used for humans to mean lineage, family, or kin. The French physician and travelogue François Bernier is credited with being the first to cluster humans in four races, in 1684, based on physical, mostly facial, features (Hacking, 2005; Vartija, 2021a). Meanwhile, 'race' also came to signify a more general idea of nation or people of common stock, or even humans at large, as in 'the human race'. By the 18th century, usage of the word 'race' had become common to refer to 'human groups of presumed common origin' (Douglas, 2006, p. 2). The term was used interchangeably with tribe, nation, people, variety, kind, or species. It connoted *lineage* and descent from a common ancestor, such as the race of Abraham, including all his descendants irrespective of skin color or other physical features (Banton, 1998; Wade, 2002). Despite Bernier's classification system, the predominant use of 'race' between 1500 and 1800 was genealogical. However, in the 1800s, there were important shifts in this take. The French naturalist Buffon introduced a move from descent and genealogy to resemblance and diversity. In 1777, Buffon postulated that race is identical to *variété*, (variety) or *espèce* (in its understanding of kind). He forcefully defended the unity of the human species and argued that physical differences between populations must be primarily explained by environmental effects (Vartija, 2021a, b). Important for us here is that he added to the idea of race as lineage, *race as resemblance*, based on similarities in appearance, that is, *phenotype*.

While Buffon used the term 'race' to refer to groups of people that share the same phenotype and a common origin, his concept was inherently fluid, since a race or species is subjected to 'the constant succession and uninterrupted renewal of the individuals that constitute it' (quoted in Vartija, 2021b, p. 610). This is similar to the position of Johan Friedrich Blumenbach, who is famed for the introduction of the five varieties, later called races. Blumenbach assumed that morphological differences, based on studies of crania and other physiological markers, could be explained by environmental effects and found that differences between groups of people could not be clearly demarcated: They 'all do run into one another, and that one variety of mankind does so sensibly pass into the other'

(quoted in Vartija, 2021a, p. 50). In short, differences in morphology are small, gradual, and transient, contributing to flexibility in what counts as race.

Although Buffon suggested clustering people according to appearance and observable physical traits, he seemed to consider race a 'knowledge effect', stating that: 'only individuals really exist in nature … genera, families, and classes only exist in our imagination' (quoted in Vartija, 2021b, p. 610). Buffon's groups are not simply out there in nature, but necessarily connected to the kinds of categories imposed on them. Race is thus a tool for clustering people. This approach to race is, as Müller-Wille (2014) shows, also at the heart of Carl Linnaeus's classification of humankind into four varieties. His classification's tool character lies in the fact that the varieties do not assume resemblance to the people clustered together. Linnaeus' classification based on color and distinction in the four continents was not aimed at resemblance among people, so Müller-Wille argues, but was to 'serve as a tool for ordering knowledge' (p. 601).

Immanuel Kant, who was a great admirer of Buffon and in particular of his definition of species as a group capable of mating and producing fertile offspring, took this firm situatedness of humans in nature as inspiration to reflect on race. Kant was the first to define race as a distinct subcategory within species and embraced race as a taxonomic term to classify human diversity. In Kant's thinking, race is out there in nature: as permanent, inherited characteristics independent of analysts and methods.[5] Kant is explicit about the difference between classifications 'in here' (school classification) and those 'out there' (natural classification).

> The school classification [*Schuleinteilung*] works from classes [*Klassen*] based on similarities, the natural classification [*die Natureinteilung*], however, works from groups related by heredity [*Stämme*], which categorize the animals according to their relation due to procreation. … [T]he first has only the intention to categorize plants and animals under a title, the second has the intention to organize them according to laws (Kant, 'Von den Verschiedenen Racen der Menschen' quoted in Gray, 2012, p. 398).[6]

Race is thus a rigid category, a variation among kinds found in nature.[7] Kant further embraced race as a taxonomic term to order human diversity hierarchically. This understanding of race influenced the emerging field of physical anthropology and fueled its endeavor to study human diversity by determining racial types.

One could read this brief account of race in a modernist way, whereby race was first about lineage and descent, became a tool to help loosely cluster observable characteristics based on physical similarities, and then finally, rendered an object of nature that exists independent of our will and according to the laws of nature. However, although these approaches succeeded each other, they did not necessarily supersede each other. I want to suggest that these modes of doing race have not only co-existed alongside one another, but they also continue to do so. In this case, 'we don't do race anymore' might refer to one specific reality of race, that of race as a naturally existing object out there, but not to others. It might mean: 'we are not interested in clustering people into different races'. Taking stock from this history of race, where we encounter race as lineage, a classificatory tool and as a natural object, in what follows I explore race as three different realities: *object* ('natural phenomenon'), *method* ('classificatory tool') and *theory* ('lineage'). I argue that

these are not three different versions of race. Race is not simply an object multiple (Mol, 2002). Although multiplicity is at issue, I suggest that the notion of *affinity concept* better captures the realities of race and the relations between them. So while the 'object multiple' crucially helps us to understand the way an object is enacted in different versions, the affinity concept aims to grasp the different realities of a phenomenon, the way these realities presuppose each other and together produce something else.

I use *concept* precisely to underline that a term such as race does not map onto the phenomenon it aims to describe. Although we may put it to use to represent a phenomenon, the word is better treated as a toolbox with which to think (see also Müller-Wille (2014, p. 603). I take inspiration from Deleuze, for whom the core business of philosophy is the invention of concepts. In the words of the translator of *A Thousand Plateaus*, for Deleuze a concept packs 'a potential in the way a crowbar in a willing hand envelops an energy of prying' (Massumi, 1987, p. xv). Concepts thus hold the promise of curiosity.

My use of *affinity* is intended to capture different processes indicated by the same word and with the tendency to connect and produce something else together. To be sure, an affinity is not the same as a homonym, in the sense of the same word is being used for totally different things, such as lime (both fruit and material). The different realities of an affinity concept are related; they meet and, in so doing, produce yet other realities, in this case of race.

Affinity concept is inspired by chemistry, where affinity has a long history and refers to the *attraction* or *compatibility* between different particles or molecules. Reflecting on chemical elements and their characterization in terms of affinity, Stengers (2021, p. 23) reminds us that the first version of the Mendeleev table was published with the title 'An attempt at a system of the elements based on their atomic weight and chemical affinity.' This underlines that chemical elements represented in the periodical system are not only ordered according to atomic weight, but that their belonging to certain chemical families also indicates that they ''behave' in a similar way, that is, have similar affinities for elements of another class' (Stengers, 2021, p. 23). Affinity indicates the attractive force that binds atoms into molecules.[8] Affinity concept, I will demonstrate, moves us beyond race as object, aiding articulation of different realities in which race figures as object, the thing a racial category represents or brings into being, but crucially also as method and theory

Generous methods and affinity concepts

In what follows, I do not present an ethnographic account of race in practice, but rather an ethnographically informed reflection on methods-and-race-together. Using a series of examples, mostly from forensics, research on face morphology, and genetics, I specify how race works as an affinity concept to draw different realities together and generate something new.

Over the past three decades, scholars in the social sciences have contributed immensely to our understanding of race in contemporary scientific practices and to the ways novel configurations of race are produced in and through the life sciences. Spurred by the

quickly expanding fields of genetics and genomics, this scholarship has demonstrated how race, though seemingly irrelevant to present-day science, is, as Duster (2015) has put it, 'inscribed at the molecular level'. While the field of genetics and genomics initially focused on gene mapping and all things molecular, and thus could be said to contribute to the 'molecularization of race' (Fullwiley, 2007), more recently, there has been a growing interest in the surface of the body. Mindful of the history of physical anthropology and, in particular, its interest in the face, I have elsewhere called this 'the return of the phenotype' that evokes a biologization and racialization of appearance (M'charek, 2020). To explicate race as object, I here elaborate on this 'resurfacing' of race through attention to the face in forensic practices.

As I noted above, in the 17th century, Bernier used facial morphology to typify racial differences. Although the skull had famously become the preferred object of study in physical anthropology and related disciplines during the era of scientific racism (Stocking, 1982; Sysling, 2016; Wolff-Mitchell (forthcoming)), the face had consistently occupied a central role in representing human diversity (M'charek & Schramm, 2020; Morris-Reich, 2019). Representations of human diversity through the face, as developed by the Swiss physical anthropologist Rudolf Martin, were used in the early 20th century to educate physical anthropology students and teach them how to see race in/through the face, using the German verb '*ersehen*', to elicit specific perceptions (M'charek, 2020, p. 371). Present-day forensic policing has moved the face back to center stage (Hopman & Bleumink, 2023; M'charek, 2008; Ossorio, 2006; Samuel & Prainsack, 2019; Skinner, 2020). Whereas conventional technologies compare DNA profiles (e.g. DNA traces at crime scenes to suspects' DNA),[9] more recent technologies make it possibile to infer the identities of unknown suspects from DNA traces collected from crime scenes. One of these technologies is called DNA phenotyping and entails inferring skin, hair, and eye color or facial shape.[10] The human face, geneticists tell us, often in reference to monozygotic twins, 'represents a combined set of highly heritable phenotypes' (Xiong et al., 2019, p. 2). In addition to monozygotic twins, the argument goes, the heritability of facial features is also illustrated by 'stable facial features within, and differences between major human populations' (Xiong et al., 2019, p. 2). So, the face is both highly individual and collective. Scientists generally acknowledge that they are currently only scratching the surface in terms of the 'genetic architecture of the face', which is known to be utterly complex (e.g. Alshehhi et al., 2023; Naqvi et al., 2022; Sero et al., 2019). The hope however is that, even in its current state, DNA phenotyping could be useful in forensic practice to narrow pools of potential suspects (Naqvi et al., 2022). This narrowing of the pool indicates that the intended purpose is not to identify individual suspects, but rather suspect populations for the police to further investigate.

In what follows, I draw on one study of facial morphology to unpack the three different realities in which race figures. We will first encounter race as object in a public lecture reporting on the study. Then, we will examine the study in published form to see how race figures as a method for ordering and analyzing data. Finally, the publication will help us trace a third reality, where race figures as theory contributing to an interpretation of the phenomena studied.

Race as object

One of the leading scientists in facial morphology is Peter Claes, a specialist in medical imaging and facial genetics, based at KU-Leuven in Belgium. Claes collaborates closely with population geneticist Mark Shriver, based at Pennsylvania State University in the US. Below, I consider two public presentations Claes and Shriver delivered in which they explained facial variations. These demonstrate how race is rendered a facial feature discoverable in the world and thus how race functions as an object. I begin with an excerpt from a TED Talk Claes delivered at his university in March 2015 and then draw briefly on an example from a lecture Shriver gave in the same year at the World Science Festival in New York City. To be very clear, my purpose here is not to debunk Claes and Shriver as racists. I know both scientists personally and value their work.[11] Here, I use their work as but one single examples of the persistent problem of race in scientific research on human diversity.

In his presentation, Claes uses his own face as his primary example.[12] He starts off with genetics, giving the example of his family tree, explaining how we inherit 50% of our DNA from each of our parents, and how the next generation will inherit 25% from each of their grandparents, indicating an accumulation of variation. Then, he suggests we 'zoom out' and consider a longer time frame, in which variation develops over a much larger number of generations across the world. This leads him to argue: 'Starting from the proper databases in which you collect DNA and faces of different populations across the world, you are actually able to study the differences between those populations in terms of genetics and faces.' This 'allows you to change the genetic background of faces' and show how genes affect facial morphology. On screen we see Claes' face hopping over the globe demonstrating what this looks like. He uses a software program to facilitate the journey. Starting in Antwerp where he lives, he jumps to Tuscany, to show us how his face morphs.

> What you can see changing in my face most prominently is my nose, is being elevated like *a typical Roman nose*. The next stop on our journey is Tokyo, Japan. And what you see happening is that *my typical European profile* is changing into an *Asian profile*. Where the zygomatic structures are moving forward, and the chin is slightly pressed backwards. Let's continue across the oceans, all the way to the other side of the world and we end up in Mexico. The *Mexican me* has very *smooth* and *rounder features*, so everything is less sharp and pointy. If you travel up north to the States, in particular Utah, you see the opposite effect. My features are becoming more prominent, and actually, my skin is slightly paler than it is back in Europe. And in order to close the circle we will end in West Africa. And what you see changing here is changes in the lower jaw and the nose besides skin pigmentation which you could also see in the other simulations.

Geography, genetics, and phenotype are drawn together to index difference.

While the use of one and the same face is meant to show diversity as a continuous spectrum, placing the modified face onto distinct locations on a map also undoes the idea of a spectrum. 'Changing the genetic background' combined with a geographic location produces clusterings that are reminiscent of typological racial differences. It

produces genetically and morphologically distinct faces that belong to genetically distinct groups of people. Despite Claes's aim, emphasizing differences between faces combined with geographical distance racializes people into groups. The idea of race as a natural phenomenon becomes especially clear when he articulates the presumed differences between 'the typical European profile' and the 'Asian profile'. This reproduces an idea of race as a distinct box into which individuals can be placed (Marks, 2008; M'charek, 2005).

Mark Shriver's lecture on his collaborative research with Claes and other scientists at the 2015 World Science Festival shows how this assumption works in practice.[13] Shriver first explains how he and his colleagues identified five principal components of the face: (1) face shape (round vs. long), (2) protrusions (brow ridge, nose, cheekbone), (3) overall face (convexity vs. concavity), (4) nose size and projection, (5) lower face (projection vs. retrusion). He indicates that these principal components were based on a dataset of '600 people with African and European ancestry', calling them the 'low-hanging fruit' of face research.[14] To demonstrate how facial morphology changes between the extreme poles of the principal components identified, depending either on Africanness or Europeanness and on sex variation, Shriver also uses his face and 'runs it through the software'.

> Just to give an example of the ancestry, I click on ancestry and move it over to the right and we get a more African profile. These are the PCs, principal components, that are affected by ancestry. Move it to the left and we get a more European face. … move the slider to the right make myself more European than I am now.[15]

Using the software program to slide through facial diversity again exemplifies the matter-of-factness of race as a natural given that allows us to cluster faces (and bodies) racially.

This is the most common way we, as critical race scholars, attend to race. Much of our work is geared towards demonstrating how race, again and again, is produced as a quality of bodies, how, in specific practices, bodies are enacted as racialized. We could stop here. We could perhaps even show through the example above that race is a multiplicity, enacted as geography, genetics, facial morphology, and more. But we could also, mindful of the example of the sheep, give race a chance to behave otherwise. We could embrace generous methods as an approach to study dull or difficult matters from which we would perhaps rather keep our distance. Embracing generous methods would encourage us to go beyond mere critique of race, similar to 'matters of concern' (Latour, 2004), 'matters of care' (Puig de la Bellacasa, 2011), or 'staying with the trouble' (Haraway, 2016). Remaining generous, combining open-ended inquisitiveness with care for what we study and how we study it, fosters a generative relation with our 'research object'. This entails taking genuine interest in the practices we study and perhaps also having a stake in the knowledge that emerges from them. But it could equally be a matter of being intrigued by statements such as 'we don't do race anymore'. Folded into the above example of race as object are its other realities as method and as theory. To elaborate this point, I invite you to examine the academic publication at the heart of Claes' and Shriver's presentations and the software used.

Race as method

'Modeling 3D facial shape from DNA' is co-authored by 23 scholars among whom Claes is the first and Shriver the last author, the two most important positions, according to life science conventions (Claes, Liberton, et al., 2014). It makes a claim for what the authors call 'predictive modelling' of the face based on DNA. They also indicate that its use in forensics is promising. It could help narrow pools of potential suspects. Pressing this point, three of the authors, including Claes and Shriver, published a short version of the article in a forensics journal (Claes, Hill, et al., 2014). This genetics-driven modelling of the face aims to break with 'traditional approaches' to facial morphology, which comes with 'limitations' the authors call a 'phenotype first' approach in a subsequent publication (Claes et al., 2018). This approach is used in, for example, Genome Wide Association Studies (GWAS), with a handful of facial characteristics (phenotypes) genetically mapped onto a large cohort. This 'physical simplification' (Claes, Hill, et al., 2014, p. 209) is limiting (as it results in the small number of five genes associated with facial features), 'considering the compelling evidence for genetic effects on facial features and the large numbers of both faces and genetic markers screened in these efforts.' The problem with this simplification, the authors state, is that the effects of the genes selected in GWAS do not coincide with the phenotypic features used to classify faces. They thus opt for a 'data-driven approach', based on facial complexities. This data driven approach, I want to suggest, is precisely where race comes in handy, this time as an ordering device, *race as method*. Race as method implies that the goal is not racial differences between bodies or, in this case, faces. Instead, race becomes an important tool. As we will see, in this instance, the researchers were not interested in the appearances of the populations sampled, but in genetic admixtures in which race figured methodologically to produce knowledge about genes that they could relate to the facial morphology of all human beings.

The authors acknowledge that the face is highly complex, as its morphology is not only affected by genes, but also 'as people grow, hormones and biochemical factors'. They indicate that the 'inability to systematically summarize facial variation has impeded the discovery of the determinants and correlates of face shape' (Claes, Liberton, et al., 2014, p. 1). The article presents preliminary results, reporting on the discovery of 24 single nucleoid polymorphisms (SNPs) on 20 genes in a small sample study of the faces and DNA of 592 individuals.

Here, I focus on how the specific ordering of samples and data contributed to this discovery. The participants stemmed from populations in the United States (State College, PA, Williamsport, PA, and The Bronx, NY); Brazil (Brasília); and Cape Verde (Säo Vicente and Santiago).[16] The authors indicate that, because of the 'multivariate nature of the face and the large number of genes likely affecting variation in the face', they chose to focus on 'between-population variation' (Claes, Liberton, et al., 2014, p. 2). Participants were included only if, based on Ancestry Informative Markers, they showed more than 10% West African ancestry and less than 15% combined Native American and East Asian ancestry. To reduce complexity and order the phenomena under study to discover relevant genes, the population samples became a range of mixtures of European and West African ancestry, coming to indicate what Fujimura and Rajagopalan

(2011) call a 'genome geography': first relating genes to faces and then faces to geographic origins, thus assuming a 'natural relation' and racializing populations. However, the authors indicate: 'By simultaneously modeling facial shape variation as a function of sex and genomic ancestry along with genetic markers in craniofacial candidate genes, *the effects of sex and ancestry can be removed from the model*, thereby providing the ability to extract the effects of individual genes.' (Claes, Liberton, et al., 2014, p. 2, emphasis added). This means that racializing the faces and the phenomenon studied was crucial to identifying genes related to facial morphology. However, although race (along with sexual differentiation) was important to start with, to order the samples and reduce complexity, the objective was not aimed at racializing differences between faces, but at candidate genes found in all human beings. The goal was not race. Race was a means to accomplish the work. Hence, *race as method*.

Race as theory

The article's short version, aimed at a forensic audience, states that the research's goal is to improve the predictive modelling of facial morphology based on DNA. An improved model would be used for identification, going well beyond current DNA phenotyping that predicts only a small number of visible characteristics, such as hair, eye and skin color (Claes, Hill, et al., 2014). Ancestry, and usually racialization of individuals, is at the heart of this process of individualization. We saw this above through the geographic lenses used to morph Peter Claes's face, but it also occurs in the context of DNA phenotyping (e.g. M'charek, 2020). In an interview that Roos Hopman and I conducted with Mark Shriver, we discussed the details of the articles, especially the relationship between face and ancestry. Shriver stated: 'It's pretty strongly related. You know, you can predict from the face what somebody's ancestry is. Or, you know, reconstruct the average ancestry face, based on that [genetic] ancestry level.'

The authors emphasize that sex and ancestry affect facial morphology in complex ways, yet 'these variables are useful summaries of the degree to which particular faces are more or less ancestry-typical and sex-typical, respectively' (Claes, Liberton, et al., 2014, p. 3). Figure 1 illustrates their assertion.

Figure 2 takes Europeanness as a kind of baseline (0) and displays an increased West Africanness in ancestry along the horizontal axis. But, along the vertical access, it also suggests a correlation between genetic ancestry and more European or more West African faces.

The authors explain that '[a]pproximately two-thirds of the [facial] variation in RIP-A [ancestry] across these three West African/European admixed populations is explained by genomic ancestry' (Claes, Liberton, et al., 2014, p. 3). At the heart of this conclusion is that admixture, like population growth, might lead to 'accelerated evolution' (Claes, Liberton, et al., 2014; Hawks et al., 2007), that is, higher genetic variation in a relatively short period of time.[17] Rapid local evolution is seen to support the assumption of a correlation between variation in physical features, such as facial morphology, and variation in genes, such as allele frequency for specific genes (Claes, Liberton, et al., 2014, p. 10).

How does this help us understand the reality of race as theory? By 'race as theory', I do not mean a theory of racial differences, but the contribution of race (racial clustering

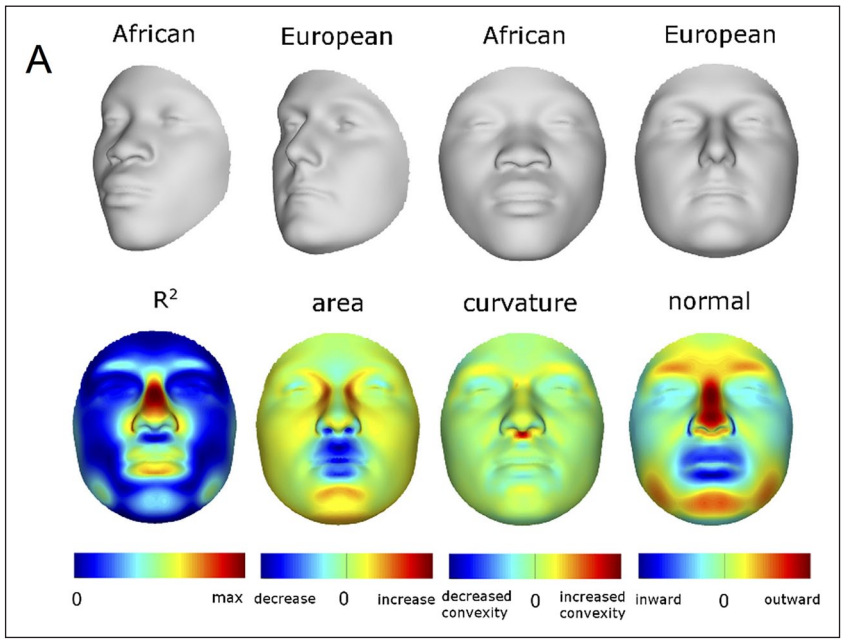

Figure 1. Facial morphologies (from Claes, Liberton, et al., 2014).

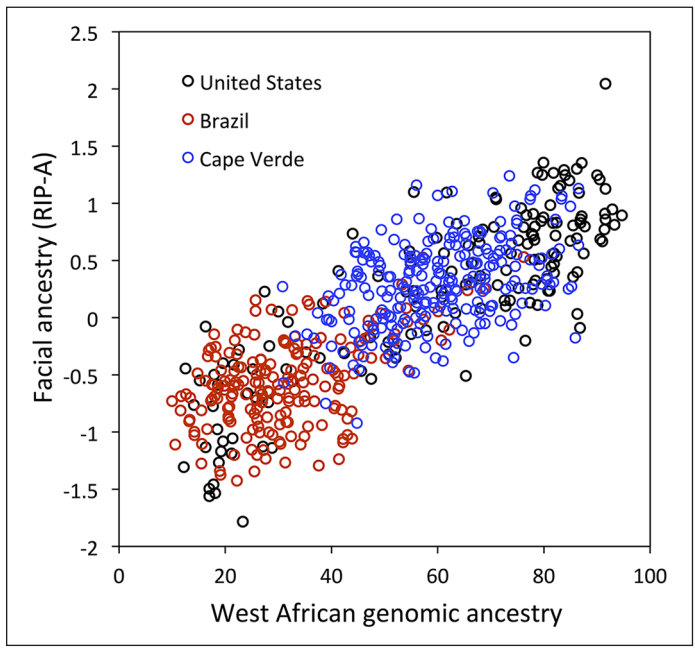

Figure 2. Facial vs. genomic ancestry (from Claes, Liberton, et al., 2014).

of samples or data) to theoretical (epistemological) explanations of 'natural' phenomena. Race as theory mobilizes race to interpret data. It is linked to evolution, ancestral groups, and admixture. Race as theory thus introduces a temporal aspect to the understanding of similarities and differences. The study samples displayed in the graph above obviously fold in other temporalities as well, for example, those of colonialism and the transatlantic slave trade. Something that jumps out from the graph above is that, apparently, the U.S. population has more West African ancestry than the population based in West Africa, namely Cape Verde. Beyond this, the very fact that two of the populations sampled are in fact not from either continent, Africa or Europe, indicates that Europeanness or Africanness is not simply a geographic situatedness, but crucially a temporal one. While the samples included reflect colonial times, those excluded based on too much Native American or East Asian ancestry suggest that Europe and West Africa are placed in an evolutionary temporal relation to one another. Through this temporal relation, these locations become sites of ancestral populations, with the samples likewise expressing contemporary admixtures between members of European and West African populations. Although the variables do not include time, the graph suggests development over time, precisely because it concerns admixture and divergence between West African and European ancestry. Hence, it is noteworthy that Europe seems to function as the baseline and the graph shows more African ancestry or facial morphology. If one were to foreground the out-of-Africa theory and evolutionary time, the directions would be reversed. One could argue that this is merely a trivial representation of the results. Yet it is normative, as it obviously feeds off a 'racial gaze' (Hall, 1997), through which we take Europe as the norm and everything else a deviation. This representation and the temporal line it evokes thus contribute to the further racialization of Africanness and Europeanness.

Although race as theory depends on racializations like these, it is not aimed at human bodies as such, but at making sense of results, in this case, genes that are presumably related to facial morphology. The orientation of ancestry and admixture along a temporal line takes us back to race as lineage and descent that we encountered above in the historical section. Paradoxically, while taking stock of the diversity of bodies clustered together, a diversity interlinked with heredity (of different biological, physical, and associated markers), race as theory is best viewed as indifferent to appearances (think of the race of Abraham). Race as theory and its intricate link to lineage and genealogy, introduces a process of thinking about how differences have come about based on assumptions concerning human origin, divergence, and admixture. It conceptualizes change and correlation, thus introducing a framework to explain scientific results in light of human evolution, and contributes to understanding how contemporary populations relate.

Keeping the conversation going

So, race is not race. This is the lesson I learned by following race across time and space. Puzzled by the elusive nature of race and the default negation that 'we don't do race anymore', I slowly learned to make race more interesting to myself. I learned to look beyond the raceness of race, such as its virulent, violent politics. I started pausing with it and finding ways to be curious. Inspired both by Foucault's notion of curiosity as pertaining to an open-ended inquisitiveness and care for one's object of study, and by a

material semiotic take on methods as generative, I developed *generous methods*. Generous methods, resonating with Law (2004), are a version of slow and open-ended methods, that are tolerant of difference and engage with the array of possible manifestations of the object of study. The crucial aspect of generous methods is that it gives our object of study *a chance* to behave otherwise and to be known otherwise. Let us remember the sheep given the opportunity to behave like chimps.

It feels highly uncomfortable to adopt a generous mode toward practices in which race figures. Yet precisely because race is such a political force, we need to remain inventive in how we analyse it. Because race is simultaneously obvious and elusive (Wade, 2002), it warrants more space and care as an object of research. Here a generative open-ended and careful inquisitiveness helped me to see that we are dealing with different realities of race. It helped me to move beyond the 'objectness' of race, beyond representation. In my example of a research article on genetic facial morphology, we first encountered *race as object*, where race was a matter of fact, a natural phenomenon, that allows scientists to cluster bodies in certain ways. Second, *race as method* is seen in the discrepancy between the classification of the samples collected and the classification applied to order the data. Race was an important beginning, to order the samples according to a research question and to reduce the complexity of the phenomenon studied. The researchers' objective however was not race differences, but identifying genes that all human carry with them. Finally *race as theory* points to how research relies on race in the form of ancestral groups, yet is not aimed at differences between these groups but at analysing the research findings. The idea of human evolution and temporal change through admixture between ancestral groups, 'the low-hanging fruit' Shriver mentioned during his talk, offer possibilities for analyzing data and deducing relevant results.

The *affinity concept* is an analytic to help us grasp and articulate race beyond objectness (however multiple). The different historical iterations of race have typically been read as different definitions or ideas about race: as lineage, as classificatory tool, and as natural object. I have suggested that these iterations are more interesting than that and better seen as different practices that belong to different realities of race that have never quite disappeared. Rather than superseding each other, these iterations refer to realities that coexist. I have translated the historical iterations into race as object (natural phenomenon), method (classificatory tool) and theory (lineage). The affinity concept helped to capture how these realities that go under the same word relate. The dominant take on race, namely as an object, that is, referring to differences between bodies, is perhaps the reason that we have been thinking that we were dealing with one and the same thing, one and the same reality.

The *affinity* part of the affinity concept suggests that the different realities of race are not indifferent to one another. Taking inspiration from the notion of affinity in chemistry, where it indicates the *attractive force* that for example binds atoms into molecules, the affinity concept underscores the fact that the three realities of race necessarily co-exist, connect and recombine. Sharing an interest in human variation they feed off and feed into each other to do 'meaningful' work. In the scientific article I used as an example, race figured as method to find 24 genetic polymorphisms that could be related to facial morphology. These polymorphisms are not unique for a particular group of people but can be found in all human beings. A bit further down the line, race figures as a theory to

analyze these data in the light of ancestry and admixture. These analyses, as indicated, are indifferent to actual appearance and are just aimed at correlating genetic and morphological variation. Then again, in a practice of race as object, we saw how the results that were indifferent to appearance were again related to faces. They affected and racialized the face of Claes as he moved around the world and assumed a different 'genetic background'. These realities do not *translate* into one another but *react* with another as to produce something new. Through this attractive force, the faces presented by Claes and Shriver have become not individual faces, but faces that represent different typological races. Precisely this is why race is a political force.

The research on race and science has been extensive, sophisticated, and important. The affinity concept contributes to this scholarship by offering and analytic to *disentangle* and be more specific about the different realities in which race figures and what phenomenon we are actually dealing with. It also provides us with an analytic to grasp the *slipperiness* of race, how it disappears to become seemingly irrelevant, or slips into assumedly neutral things such as genetic variation, SNPs or PCs. The affinity concept also helps us to grasp the *persistence* of race in science and in what reality it figures while doing work in scientific practice. For example, my analysis of race could be read by well-intentioned scientists to claim, 'yeah, race is a social construction, and we only use it as a method or a theoretical approach', a version of 'race in the meantime' (Kahn, 2012). However, race as method or theory cannot exist, or would be meaningless without race as object. These modes of doing race not only feed on race as object, but feed into and invigorate existing modes of doing differences in science and society. The affinity concept forcefully advances the idea that although the different realities of race can be disentangled, they cannot exist without each other. They are always subjected to the attractive force to recombine and to produce typological race, the very monster that many of us want to fight.

The affinity concept thus allowed me to grasp the three different realities that come under the heading of race while making clear that these realities are necessarily related. This observation has a much wider relevance. One could for example think of racialized crime databases as methodological tools, where diverse data about crime, location, and prevalence are mounted according to bureaucratic demographic classifications. These databases, aimed at research such as estimating prevalence of crime, or at pre-empting crime, may not be primarily geared at bodies and skin color, but at crime and types of crime. However, when put to use, the racial classification of the data in the database tends to recombine with bodies in society, feeding into the racialization of citizens (race as object), as well as assumed ideas about their inclination to commit crime (race as theory).

Over the years, race has caused me trouble. I have kept trying to understand this ill-fitting thing. Instead of simply reducing race to its cruel effects, such as the effects of racism, I decided to generously open up to its unrelenting uses in scientific practices. This generative gesture allowed me to move beyond race as object and see how it also figured as method and theory, realities that I have drawn together through the affinity concept. I like to think that the affinity concept has a wider relevance, beyond race. It might help us grasp the work of other key words, like sex, individual, family, and more. Might it be that these words not only describe but also cluster and analyze? The affinity concept presented here could help us understand the slipperiness and politics, not only of race but of all identity words.

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ORCID iD

Amade M'charek https://orcid.org/0000-0001-5242-2406

Notes

1. Because of the default nature of race or the common assumption that people already know what it is, Jackson (2005) speaks of 'raciality' to make his readers stumble over it and to problematize the word.
2. This is the RaceFaceID-research team, see https://race-face-id.eu/. In this paper I draw and referece some of that collaborative work, especially the work of Roos Hopman, Lisette Jong, Ryanne Bleumink, Ildikó Plájás, Irene van Oorschot and Alana Helberg-Proctor.
3. In the past twenty years or so, race and overt racism have changed from taboo issues to part of the general discourse, under the influence of extreme right parties in the Netherlands. A similar move can be documented in other European countries. Dutch rightwing politicians, such Geert Wilders or more recently Thierry Baudet, have attracted disturbing numbers of voters based on their xenophobic, anti-Muslim and racist stances (e.g. De Koning, 2016; Ghorashi, 2023).
4. Importantly the relevance of the concept of care within studies of technoscience has moved well beyond healthcare studies and domestic labor, to include for example, the care for data, for water (e.g. Domínguez-Guzmán et al., 2022), or for waste water (Smits & de Wilde 2023). Also although care is essentially about improving, it does not always embody a good: Care can also be about killing (Harbers, 2010; Law 2015) or about confronting dying and loss in more careful ways as Parreñas (2018) argues in the case of orangutan conservation and extinction.
5. I refer here only to European naturalists and philosophers and their contribution to this genealogy. For example, Edward Long (1774), an English plantation owner in Jamaica, also classified different races in his *History of Jamaica*, which was published a year before Kant laid out his own classification in 1775.
6. The German word '*Stämme*' is actually better translated as 'lineage.'
7. I use 'kind' somewhat loosely, but see the important and insightful elaboration on this term in relation to race by Hacking (2005).
8. Affinity has also gained traction in population genetics and forensics, where it is used as a synonym for ancestry or race (see e.g. Berg & Ta'ala, 2014). Contributing to a debate on race in forensic anthropology and as an attempt to undo race, affinity is proposed as a more appropriate statistical and data driven approach (see Ross et al., 2021).

9. These technologies are also used to identify victims of crime, Disaster Victim Identification (DVIs), or dead migrants (M'charek & Casartelli, 2019; Olivieri 2018; Toom 2016, 2018; Wagner, 2008).
10. In some jurisdictions, e.g. the Netherlands, only the inference of skin, eye, and hair color, as well as that of sex and biogeographic ancestry are currently admissible in forensic practice (see e.g. M'charek et al., 2020).
11. In fact, in April 2018, Mark Shriver invited me to teach a class on race and science to one of his undergraduate courses and organized a small, focused workshop with his graduate students and team, inviting me to discuss with them the controversial publication on race and science by David Reich in March that year in the *New York Times* (Reich, 2018).
12. See https://www.youtube.com/watch?v=Fii45aFKDl4 (accessed 28 August 2023)
13. See https://www.youtube.com/watch?v=P_jKypC8X7o (accessed 16 April 2023)
14. See https://www.youtube.com/watch?v=P_jKypC8X7o (accessed 16 April 2023)
15. I cannot ignore the setting in which Mark Shriver spoke: While he sat on the very left of a panel with three white female speakers, on the very right was the moderator, the journalist Randall Pinkston, who is of African descent, looking very 'interested' at the morphological changes of the face, from a European to very (stereotypical) African looking face. I cannot but wonder about the work that this scenery as a whole did during that panel.
16. Typically, the articles do not provide any details on the how and why of these populations. It is however remarkable that these are three locations of recent historical migration and population admixture, as well as locations implicated in the transatlantic trade. Cape Verde was until the 15th century an uninhabited archipelago and stopover for transatlantic slave trade, and Brasilia is the youngest big city in Brazil, with very high population diversity and is *the* regional immigration hotspot in the country.
17. This point might explain the specific sample choice, which falls slightly out of focus when we generalize samples from specific locations to represent national samples: U.S., Brazil, and Cape Verde.

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Author biography

Amade M'charek is Professor of Anthropology of Science at the Department of Anthropology, University of Amsterdam. She has been studying race in the context of the team-based ERC-Consolidator *RaceFaceID-project*, on forensic identification and the making of face and race. In her most recent research project *Vital Elements Postcolonial Flows*, again a team endeavour finaced through an ERC-Advanced grant, she reclaims forensic methods to study migrant death in relation (post)colonial circulations and extractions.