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## Shifting Winds: Using Ancestry DNA to Explore Multiracial Individuals' Patterns of Articulating Racial Identity

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### ABSTRACT

This study explored how genotype information affects identification narratives of multiracial individuals. Twenty-one multiracial individuals completed individual interviews before and after receiving a DNA analysis to clarify their genetically based racial ancestry. Based on results, this article proposes patterns of articulating racial identity by multiracial individuals. Four patterns extend evolving research in multiracial identification, namely (1) the individual articulates a monoracial identity; (2) the individual articulates one identity, but this can shift in response to various conditions; (3) the individual articulates an extraracial identity, opting out of traditional categories applied to race; and (4) the person distinguishes traditional categories of race from culture and owns the two identities in different ways. Implications of these findings are discussed. First, adding new ancestry DNA information further muddles the neat categories of race, consistent with the view of race as socially constructed. Second, results emphasize the fluidity of identification for multiracial individuals. Third, DNA information challenges the neat percentages people tend to associate with their backgrounds. Particularly for younger multiracial individuals, there was less of a sense that race was a real thing and more that culture played a big part in how they saw themselves.

### KEYWORDS

Ancestry DNA; articulation patterns; genotype; identity; multiracial identification; narrative

The easy availability of ancestry DNA offers a new way for people to understand their racial or ethnic identity. For multiracial individuals, who have to negotiate more than one heritage, this information could help bring clarity to the choices they make in their identification. The purpose of this study was to explore how genotype information affected identification narratives of multiracial individuals by presenting findings on their patterns of articulating multiracial identity before and after taking an ancestry DNA test. This work is part of a larger research program that considers the impact of new ancestry DNA data on racial identity. The discourse of people who already may be flexible about their racial identification can offer insight on new directions to come.

### Models of multiracial identification

Goldstein and Morning (2000) highlighted the complexity of multiracial identification and suggested that genealogy, awareness, and/or identification could all be employed as strategies for operationalizing multiracial identity (p. 6231). Because this work focuses on personal attitudes and narratives, we utilized individuals' self-reports, which include elements of all three. Richeson and Sommers (2016) made the following case about the term *biracial*:

[It] often presumes that there are two distinct biologically meaningful parental racial categories that are then passed down to biracial children. This view, then, prioritizes biology rather than the myriad cultural factors that

give rise to racial identity. In addition, it ignores the historical truth that all of the racial categories that we recognize today in the United States (as well as in many other countries) are actually groupings of peoples with quite varied “racial” ancestries. (p. 443)

And yet, the term has been employed over the decades to explain the identity and experience of people who classify themselves as of more than one race. In the past, the term was more often imposed externally than embraced personally. Today, elements of both can be seen, and we accept self-reports as a reasonable strategy for assessing biracial or multiracial identification.

The study of multiracial individuals has evolved dramatically over the past century, as early work (Park, 1928; Stonequist, 1935) utilized alienating language such as “the marginal man.” The title of Stonequist’s article “The Problem of the Marginal Man” framed the existence of multiracial individuals as a complication, implying their subordination to dominant monoracial groups in society as well as their difficulty in belonging to any of their specific races.

Over decades, scholars have proposed models that have shifted the landscape regarding how multiracial individuals identified or were perceived by other people (Renn, 2008). Theoretical contributions have ranged from creating linear minority identity development models (Cross, 1995; Helms, 1995; Poston, 1990) to psychological, social, and ecological models (Kilson, 2001; Renn, 2003, 2004; Rockquemore & Brunson, 2002; Root, 1998; Shih, Bonam, Sanchez, & Peck, 2007). The early models of biracial or multiracial identity development were linear, positing that these individuals underwent a crisis of identity in their early years, which led to a sense of marginalization, but eventually they reached a point of identity consistency. Poston’s biracial identity development model (1990) had five linear stages: (1) *personal identity*, when young children did not yet associate with a specific racial group; (2) *choice of group categorization*, when an individual chose an identity that included both parents’ heritage groups or a dominant culture from one background; (3) *enmeshment/denial*, when an individual felt guilt at not being able to identify with all aspects of his or her heritage; (4) *appreciation*, when an individual learned about all aspects of their backgrounds; and finally (5) *integration*, when the individual valued all of her or his ethnic identities.

Later models conceptualized identity as a fluid, rather than a stable, concept. The concept of fluidity has been used in other types of identification, most notably in studies of gender and sexual orientation. Davis (2009) made the point that inherent in the notion of fluidity is the rejection of identity stereotypes that might be oppressive. Fluidity allows individuals the freedom of choice to move beyond social constructions of specific genders. Root (1990) reconceptualized the biracial experience as positive by proposing four possible resolutions in biracial identification: (1) acceptance of the identity society assigns, (2) identification with both racial groups, (3) identification with a single group, and (4) identification (of biracialness) as a new racial group. Renn (2004, 2008) also conceptualized race as fluid and identified five patterns of multiracial identity among college students, which were drawn from an ecological perspective, namely (1) student holds a monoracial identity; (2) student holds multiple monoracial identities; (3) student holds a distinct multiracial identity; (4) student holds an extraracial identity (e.g., deconstructing race or opting out of identification with standard classifications); and (5) student holds a situational identity, identifying differently in different contexts. One of the main differences between these patterns and previous models is that these patterns do not imply linearity or preference; there is no defined endpoint, and there is no implication that one is inherently better than another. Indeed, Kramer, Burke, and Charles (2015) differentiated between the older “stability-oriented” theories and the newer “context-oriented” ones, concluding that the latter were more accurate and that identity stability was overrated.

Scholars have used the term fluid to characterize patterns of racial classification in several countries. Telles and Paschel (2012) examined the extent to which skin color, nation, class, and region shaped who identified as black or mulatto in Brazil, Costa Rica, Panama, Colombia, and the Dominican Republic. They found that not only phenotype but social status, region, state policies, and nationalist narratives influenced this process. In addition, Nix and Qian (2015) quantified changes in racial identity and the phenomenon of “passing” between Black and White from 1880 to 1940 in the United States and found

that passing was almost always accompanied by geographic relocation to communities with a higher percentage of Whites, occurred at all ages, and was positively associated with political economic opportunities such as schooling, earnings, and voting rights for Whites relative to Blacks. Their study showed that exogenous factors played a big role in racial choice.

Further, Saperstein and Penner (2012) analyzed two decades of data from the National Longitudinal Surveys of Youth in the United States and concluded that there was a reciprocal relationship between racial fluidity and inequality, showing that individuals changed race over time in response to changes in social position. Aspinall and Song (2013) studied mixed-race identification in Britain and found considerable fluidity, especially when respondents were allowed to freely indicate their race/ethnicity instead of choosing from closed categories. People were likely to give not only detailed descriptions but also multiple and fluid classifications. In the National Longitudinal Study of Adolescent Health in the United States, Doyle and Kao (2007) analyzed determinants of racial identification among multiracial and monoracial adolescents. They concluded that multiracial individuals changed identification more than monoracial individuals, and physical appearance and socioeconomic status were major influences in these decisions. Other places and groups where multiracial identification has been studied qualitatively and quantitatively are Germany (Hubbard & Utsey, 2015), Canada (Knight, 2001), China (Wing Fai, 2015), Japan (Carter, 2014), Mapuches of Latin America (Valenzuela & Unzueta, 2015), and Native Americans (Liebler, 2010; Liebler, Bhaskar, & Rastogi, 2014). These studies highlighted the role of a multitude of factors in the multiracial identification process.

Such factors included physical appearance (Doyle & Kao, 2007; Telles & Paschel, 2012), family narratives and priorities (Perry & Whitehead, 2015; Song & Gutierrez, 2015; Valenzuela & Unzueta, 2015; Valetine, 2015; Williams, 2015), cultural experiences such as language (Foeman, 2009; Hubbard & Utsey, 2015), interpersonal options such as dating (Curington, Lin, & Lundquist, 2015), geographical neighborhood and school options (Nix & Qian, 2015; Rothstein, 2011; Saperstein & Penner, 2012; Wright, 1994), perceived advantage such as in college applications (Rockquemore & Arend, 2002), socioeconomic status (Hitlin, Brown, & Elder, 2006; Korgen, 2010; Rastogi, Noon, Zapata, & Jones, 2012), and peer and community relations (Renn, 2000), among others.

Another group of studies has looked at the psychological effects of identification choices on multiracial individuals. A few studies have documented stigma experienced when individuals were asked questions such as, "What are you?" Scranton (2014) found that responses to stigma included confronting, deflecting, internalizing, and giving no response due to confusion. Khanna and Johnson (2010) reported that Black/White biracial individuals used the strategy of passing as Black to fit in and to avoid stigmatized identity. There is also literature on the positive effects of being multiracial. Kramer et al. (2015) reported that identity inconsistency was not associated with negative outcomes and might be associated with positive benefits for multiracial individuals who had access to White privilege. Moreover, Viki and Williams (2013) stated that biracialness fostered creativity. Other positive effects included flexibility (Gaither et al., 2014), lower vulnerability to stereotyping, higher levels of self-esteem, and a greater sense of efficacy (Bracey, Bamaca, & Umana-Taylor, 2004; Shih et al., 2007; Shih & Sanchez, 2005).

In sum, this literature has seen a shift in models of multiracial identification from negative to positive and from stable-oriented to fluid. In addition, a number of social, psychological, and ecological factors has been identified that contribute to multiracial identity development. With the increasing availability of ancestry DNA for public consumption, this study sought to explore how genotype information affected identification narratives of multiracial individuals by exploring patterns of articulating multiracial identity before and after taking a DNA test.

## **Narratives and DNA**

One of the initial studies that looked at how individuals responded to their DNA information was conducted by Hirschman and Panther-Yates (2008). They found that identity issues arose when people learned that their DNA profiles did not match the ancestry they believed they had. Foeman

(2009, 2012) built on this research by qualitatively exploring the relationship between racial narratives and ancestry DNA data. Foeman, Lawton, and Rieger (2014) then looked at qualitative and quantitative data and found that the majority of people who identified as of one race had genetic ancestry that suggested multiple racial lineages. Findings also suggested that people who identified as only White were unlikely to change their self-identification based on conflicting DNA data, while people who identified as non-White were significantly more likely to identify with multiple races and to add races/ethnicities to their identification.

Foeman et al. (2014) presented graphs that showed “participants generally overestimated their European background and generally underestimated Latino, African, and Asian backgrounds (p. 11).” However, participants also stated that they would share their findings with friends and family, and many would engage in behaviors, such as researching history and attending cultural events, that would help make sense of DNA profiles that conflicted with family narratives. They stated:

Two-thirds of participants will initiate changes in their stories and will investigate the meaning of their genetic data, and about a quarter believe that society will change how they are viewed. As the use of these tests proliferates and people discuss the findings and develop narratives to incorporate them, the broader sense of race could shift in its trajectory (p. 286).

The question was posed whether this change in identification narratives shared with friends and family would shift and soften perceptions of race over time and for future generations.

Aside from the previously mentioned research, very little has been done looking at the intersection of genetics and personal narratives. One recent study by McLaughlin (2015) examined the role genetics played in how values were ascribed to families. The study showed strategies parents used to distance themselves from people they were related to who were “troubling” or who appeared to undermine respectability, such as those who carried genes for diseases or mental illness. Such decisions were often framed by narratives of responsible parenting and keeping a distance from “bad blood.”

This study looked at genetic information and narratives, but in relation to racial identification narratives of multiracial individuals. The U.S. Census estimates that one in five individuals will be multiracial by 2050 (Shih & Sanchez, 2009). Already shifting racial attitudes, as well as the increasing popularity of ancestry DNA testing, may further accelerate the fuzziness of race and is worthy of examination. It is reasonable to explore the experiences of multiracial people to reflect the direction in which racial identification is moving.

All science—whether physical or social—involves storytelling. The process of multiracial identification involves understanding social, psychological, and ecological factors in each individual’s story. Scholars have discussed family narratives as a kind of “willful pairing down of multiple lines of descent” (Wailoo, 2012, p. 14). So, what role does genetics play in this process? Each individual has genes that have been passed down from one generation to the next in a story of genetic combinations and recombinations resulting from multiple possibilities; thus, each individual has a unique story of what ethnic traits he or she has inherited from ancestors (Ancestry.com, 2015). Ancestry DNA interpretation is another kind of narrative, and a multitude of scientific and procedural factors shape how the ancestry DNA story is interpreted and presented. Genetic data represent thousands of years of information; family narratives and social variables are often current or go back to no more than a few generations, spanning at most a couple hundred years. In each case, the two storylines have to be reconciled in a person’s mind and narratives. Ultimately, for multiracial individuals, these stories are more complex than those who believe they come from one race. Multiracial people have the potential for more fluidity in identification, resulting from the more complex social, physical, and historical contexts they have to navigate in the process.

This study therefore adds to the literature by looking at a factor that has not previously been examined in research on identification of multiracial individuals: genotype information. In a sense, this brings biology back into the equation, but not in the manner that phenotype was used subjectively to create social hierarchies. Rather, it blurs racial lines. Our genes are part of us, and technology has put this information within easy reach. As such, it is not something to be feared, but

studied. Therefore, this study explored how genotype information plays a role in multiracial individuals' ongoing process of identification by exploring patterns of articulating identity that build on previous research on categories of multiracial identity.

## Methodology

### Participants

Data for this study came from 21 multiracial individuals residing in the Mid-Atlantic region of the United States. We used self-report as the basis for racial identity, similar to the U.S. Census (U.S. Census Bureau, 2010). Specifically, participants stated that each parent was of a different race. Participants ranged from 9 to 62 years old and were recruited using snowball sampling and by word of mouth, because it was difficult to recruit multiracial individuals. (Please see Table 1 for the breakdown of interviewees' gender, race, and age.) Because this study is exploratory in nature, researchers chose to cast a wide net in including a range of ages and racial backgrounds in the sample. Hochschild, Weaver, and Burch (2012) made the point that the individuals from younger generations have a greater level of comfort in talking about race because they are growing up when race is not seen as being as problematic as it was in the past. We wanted to explore how minors as young as 9 talked about race, whether they were more accepting of their biracial status, and whether they had a more fluid view of race. Institutional review board approval was obtained for the research protocol, which included a parental consent form and a simplified assent form for minors. Minors were introduced to the study with their parent(s) present, then after the minor signed the assent form, parents were asked to wait in another room during the interviews.

### Procedures

Each participant was preinterviewed face-to-face or by Skype using a semistructured protocol to assure uniformity in general questions but that allowed for in-depth probing as needed. Preinterview questions asked participants how they identified racially, how they identified using

**Table 1.** Participants' gender, race/ethnicity of parents, DNA results, and age.

| Gender | Father/Mother                          | DNA results   | Age |
|--------|--|---|-----|
| Male   | White/Asian                            | 97% East Asian, 3% other  | 16  |
| Female | African American/White                 | 57% Middle Eastern, 32% European, 9% Hispanic, 2% other                               | 21  |
| Female | White/African American                 | 77% European, 18% Middle Eastern, 5% other  | 21  |
| Female | African American/White                 | 53% European, 18% Hispanic, 14% Middle Eastern, 15% other                             | 62  |
| Female | Latino/White                           | 43% Hispanic, 34% Native American, 16% Middle Eastern, 7% other                       | 22  |
| Female | White/Asian                            | 89% East Asian, 11% other   | 13  |
| Male   | African American/White                 | 91% European, 9% other  | 45  |
| Female | Latino/Asian/White                     | 51% East Asian, 45% South Asian, 4% other   | 44  |
| Male   | Asian/White                            | 76% European, 14% Hispanic, 9% East Asian, 1% other                                   | 13  |
| Male   | Asian/African American                 | 99% African, 1% other   | 22  |
| Male   | African American/Asian                 | 42% Hispanic, 20% South Asian, 16% East Asian, 13% Middle Eastern, 9% other           | 22  |
| Female | African American/Native American/White | 98% African, 2% other   | 40  |
| Female | White/Native American                  | 45% Hispanic, 32% Middle Eastern, 14% European, 9% other                              | 53  |
| Female | African American/White                 | 52% Hispanic, 24% South Asian, 15% African, 9% other                                  | 34  |
| Female | White/Asian                            | 64% European, 24% Middle Eastern, 9% East Asian, 3% other                             | 23  |
| Male   | Latino/White                           | 44% South Asian, 18% Hispanic, 12% European, 11% African, 9% Middle Eastern, 6% other | 12  |
| Male   | Latino/White                           | 41% European, 33% Hispanic, 21% Middle Eastern, 5% other                              | 9   |
| Female | African American/Latino/White          | 99% African, 1% other   | 14  |
| Female | Asian/White                            | 55% East Asian, 30% European, 15% other   | 24  |
| Male   | Latino/Asian                           | 48% Middle Eastern, 31% Hispanic, 17% South Asian, 3% other                           | 22  |
| Female | Latino/White                           | 46% East Asian, 33% European, 15% Hispanic, 6% other                                  | 23  |

census categories, to draw a chart with how they believed their racial breakdown would be, what ancestry would be unexpected in their background, what their perfect racial or ethnic background was and why (to determine whether there was a preferred background or a racial hierarchy, as well as overestimation of particular races as found by Foeman et al. [2014]), whether they identified differently for various issues, and how they thought others saw them. Each interview lasted from 30 minutes to 1 hour.

After interviews, DNA samples were taken and sent to a commercial lab for processing. Ancestry DNA tests were provided to subjects free of charge. After the ancestry results came back to the researchers, these were sent to participants, who were then interviewed face-to-face or by Skype again. Postinterview questions asked the same questions as the preinterview and added a few more, including whether their results came out the way they expected, what results were hard to believe and why, how they reacted to their results, how they might adjust their family narrative, whether friends/family might see them differently, and whether they will change any behaviors given the new information. Three participants wrote down their responses to some of the postinterview questions but did not want to do the full postinterview face-to-face for reasons that will be explained in the discussion below.

### **Data analysis**

Interviews were done by both researchers together face to face or via Skype. Both interviewers are female, between 50 and 60 years old. One is African American and the other Asian. Detailed notes were taken during the interviews, and interviews were transcribed. Thereafter, researchers independently openly coded as many categories as possible from the preinterviews and postinterviews and compared each mentioned code of a specific identification category to other responses. Then researchers came together and discussed the codes and overlaps they found. Lindlof and Taylor (2002) explained this process as axial coding, which maps out connections among codes and thus results in the creation of either new codes or a theme. Seidman (2006) presented similar guidelines on the process of identifying key themes from interviews, stating that the process is done by reducing the text of interviews to what is most interesting for the research. Data analysis involved both inductive and deductive process. Thomas (2006) stated, “*inductive analysis* refers to approaches that primarily use detailed readings of raw data to derive concepts, themes, or a model through interpretations made from the raw data by an evaluator or researcher. *Deductive analysis* refers to data analyses that set out to test whether data are consistent with prior assumptions, theories, or hypotheses identified or constructed by an investigator” (p. 238). He went on to describe how in practice, many projects use both inductive and deductive analysis.

As themes were developed inductively, it became clear that there were similarities to the findings of previous theorists on categories of how multiracial individuals identify. Renn’s fluid approach and patterns for classifying responses was important, as well as the rejection of assumptions of linearity and a final stage of identity consistency. The first three themes created deductively matched some of Renn’s patterns of identification. This study assumed that these patterns were not mutually exclusive and various patterns may be expressed by one individual over a lifetime and given changing internal and external factors.

Both authors met several times and grouped codes into patterns that reflect how DNA information could affect multiracial people’s articulation of their racial identification. A graduate assistant was also asked to review the clarity of the patterns as a consistency check of the classifications of initial codes.

### **Results and discussion**

Genotype information provided new and sometimes conflicting data from some of the multiracial individuals’ existing narratives. The goal of this research was to explore the role that ancestry DNA

played in multiracial individuals' ongoing expression of their racial identity. It does so by exploring patterns of articulating identity, building on previous research on categories of multiracial identification, specifically Renn's. Consistent with earlier findings (Hitlin et al., 2006; Nix & Qian, 2015; Song & Gutierrez, 2015), results showed that when genotype information conflicted with existing narratives, multiracial individuals responded in different ways, depending on such factors as age, where they grew up, and lived experiences, such as their exposure to different cultures. They had to reconcile these pieces of information, and they did so in various ways that affected how they identified. Some chose to stay with their old narrative, some chose to change their identification. Overall, researchers, like Doyle and Kao (2007), did find that multiracial individuals were relatively comfortable with racial ambiguity and open to new racial identities.

While, as stated above, results reflected Renn's more fluid and nonlinear model, our findings are unique because of our intergenerational sample (not focused on college-aged individuals), ranging in age from 9 to 62 years old. A second difference was that rather than focusing on the individual's internal process of identification, this study took a communication perspective and focused on how identity was articulated and/or expressed in narrative. Third, perhaps because the subject pool was more diverse, we identified a global perspective that extended beyond the United States. Finally, we observed that multiracial individuals articulated a clear distinction within their multiple identifications that differentiated between culture and race, equally valuing both and owning various aspects of each. After considerable organizing and reorganizing of themes, we identified four patterns of multiracial identity articulation.

The four patterns of articulating racial identification by multiracial individuals include (1) the individual articulates a monoracial identity; (2) the individual articulates one identity, but that identity can shift in response to various conditions; (3) the individual articulates an extraracial identity, opting out of any of the traditional categories applied to race; and (4) the person distinguishes traditional categories of race from culture and owns the two identities in different ways. Each of these patterns is discussed below.

### ***The individual articulates a monoracial identity***

There was a different articulation of this theme across generations. Those aged 40 and older were more likely to express that they were of one race and kept this position from preinterview to postinterview, regardless of DNA results. Three individuals, in particular, talked about their race in this way. In fact, in two cases, women in their 60s, both of whom identified as Black (African American), did not know until later in life that they were of multiracial lineage. One said, "I just thought my mother was light-skinned like all of the other kids I knew." She went on to say, "Before I went to college she told me." This participant attended a historically Black college and expressed some sadness that, while there, she was not able to run for homecoming queen because it was generally accepted [during the 70s era] that she did not represent the image of Black beauty. When her DNA results reflected very little African ancestry, she sent a Facebook message to one of the authors (whom she knew personally) immediately after receipt of the results. She said, "OMG . . . got it!! So is this chart telling me that that little bit of that pie is all I have of African American??"

She asked when results would be forwarded to another woman in the study, who also discovered in adulthood that her family was not African American at all, although that was always how they identified themselves. The first woman went on to say, "OK now [she] is in shock . . ." even though the DNA profile (with no African ancestry) confirmed what she had told the researchers. Both women continue to identify as Black. The shock they expressed upon receiving their profiles and the conflict this presented had no impact on how they continue to view themselves as singularly Black. However, while these women consented to write down responses to some of the postinterview questions, researchers were never able to complete a full face-to-face postinterview with these women.

Another gentleman was somewhat younger (40s), but from the South where, he explained, he had not known any other biracial people like himself. He identified as Black, although he clearly



articulated details of how he appears to others, specifically mentioning his “sharp nose” and “light skin.” His profile also revealed a high percentage of European ancestry and very little African ancestry, and he responded, “What are you trying to do to me? You caused a lot of trouble in my family.” He, too, was reticent to provide a full postinterview but provided written responses to some of the postinterview questions, where he stated that he continues to articulate his identity as that of a Black man:

I benefit from [W]hite privilege everyday as a light-skinned person, but my politics are as [B]lack as the night. For me to say I want to be entirely Black would reflect my politics. . . . Today I don't identify as mixed because people who identify as biracial do it to appease [W]hite people. In no way will I or my kids identify as not Black.

A fourth Black-White woman with mostly European ancestry also said that she will continue to identify as Black because the result “does not change racial categories in the [United States].”

These responses suggest that these individuals were led by their times and settings to identify as one race. Furthermore, there are historical and political reasons Black Americans would reject any White ancestry. For example, having African slave heritage and White heritage may be a source of pain or anger among mixed-race Black people. Finding other genetic information for these individuals was therefore disorienting and, to some degree, undermining. On the other hand, the phenomenon of “passing” showed that not everyone rejected White ancestry; some chose to embrace it to avoid the norm of being categorized under the minority race. Richeson and Sommers (2016) discussed that association could place individuals into categories that were not consistent with how they looked (and perhaps their underlying genetic profile) for a variety of reasons and that “the historical convention” was “to categorize individuals with mixed racial ancestry into the socially subordinate parental race” (p. 443). This was especially so in earlier generations and in some geographic regions (Chen & Hamilton, 2012; Richeson & Sommers, 2016).

It is far less likely that young multiracial individuals do not know they are multiracial, compared to these older participants. Therefore, the older generation tended to fall into this first category, but not the younger ones.

### ***The individual articulates one identity, but that identity can shift in response to various conditions***

All participants described themselves by stating their parents' races, such as half Black and half White, half Chinese (or Asian) and half White, half Asian (or Chinese) and half Black, or half Latina and half Black. However, 10 participants explained how they would choose one racial identity depending on the situation. This shifting was consistent before and after the genetic testing.

When probed, these individuals often articulated that their identities shifted in certain settings. For example, they might feel more sensitive when issues about one of their identified groups came up in school or when issues in society were discussed. Some talked about feeling one race at one family reunion and another when with the other family. One Native American–African American–White woman said, “I identify as Native American when people bitch about immigration, and I identify as African American when people are gunned down unarmed.”

Several light-skinned participants said that others often just assumed they were White, and they tended to go along with that until something was said that was offensive about the other “half” and they then exerted that identity. Three participants talked about completing college applications and checking the box for African American or Latina, even as they explained how they lived day-to-day in a White world. One teenager said that while his peers just assumed he was White most of the time, he felt academic pressure and pride because of his Asian background, which he clearly saw as tied to both his mother's ethnic Chinese background and her status as an immigrant. Darker-skinned people were assumed to be African American by others and had to clarify when an offensive or stereotypical statement was made about Whites or Asians.

Foeman et al.'s (2014) work referencing Fisher's (1987) criteria for a successful narrative informed the dilemma for people who identified as a combination of distinct races. According to Fisher (1987), a successful narrative must meet standards of coherence and fidelity. It must be both possible and resonant. For multiracial people who do not look like what society expects, maintaining a biracial (two-race) narrative may be a challenge. When DNA data reinforce what is lived, the identity is supported; when DNA data contrast with the lived identity, maintaining a biracial narrative may be all the more difficult. In one case, a Chinese-Black participant reviewed results that indicated that he had inherited a largely African American genetic profile. He responded:

I have no doubt that my father is Chinese, I have no other narrative to tell. My family is confused. However, my [African American] mother doesn't care and she finds it funny. I think it doesn't matter to her because she's only ever viewed me as [B]lack.

This young man decided to go live in China.

Other pressures can force the individual to fight for each specific racial identity. One man in his 20s, whose father is African American and mother is Chinese, said that the one argument his parents had explicitly had about race was when he wanted to play basketball with an Asian team and his mother was pleased, but his father felt it was a waste of time. His father exerted himself and insisted that his son play with other African Americans. He prevailed, but the son, who liked linking to the Chinese part of his background, summarized, "That was a trip."

Sometimes comments made by participants seemed inconsistent unless viewed from this perspective. For example, one person said that she thought of herself as culturally White and racially biracial. Later she said that she would, "never under any circumstances identify herself as [W]hite." Apparently in a passive way, this person allowed herself to be assumed to be part of the majority, and she articulated that it was because she related to the sense of not being limited or defined by race, which she experienced as coming along with being a person of color. So some of these people seemed to passively accept being assumed to be one race (Black or White or Asian) and seemed to go with that on a daily basis, although another identity could be called up.

### ***The individual articulates an extraracial identity, opting out of any of the traditional categories applied to race***

This parallels one of Renn's (2008) identification patterns, which viewed such classifications as resistance to traditional socially constructed categories of race. This pattern was manifested in several ways. Two of the participants claimed a solely "multiracial" identity that was on par with other racial categories. Everyone else had laundry lists of what was in their backgrounds, but they saw these categories as discrete, rather than as one multiracial whole. Four of the youngest participants expressed wanting to be "everything" in the preinterview, and two expressed a desire for a world where race does not matter. In that vein, researchers found that one way this is manifested is by multiracial individuals mentioning racial identities tied to a global context. Almost all younger participants (younger than 25 years old) took this position before and after DNA testing, such as a teenager who looked at her profile and said, "I love having so many races on my profile." People who expressed this global view tended to be middle- to upper-middle-class children of professionals. Many had traveled or lived abroad. They had studied other cultures in school. One Black-White interracial young woman discussed the history of Latin America and the differences in how ethnicities integrated when Europeans came to Central and South America versus the United States. In particular, this pattern seems to apply more to middle- to upper-middle-class respondents who are able to have these experiences, perhaps because they have more life options and a wider perspective.

These participants articulated clear understanding of styles, behaviors, and histories of other parts of the world that shaped their expression of self. For some respondents, the process of deconstructing race from its common social construction of being heavily based on phenotype involved expressing an appreciation of having unexpected results in their DNA. This seemed to free them

from the constraints of being associated only with specific races. After receiving her DNA results, one respondent in her early 20s who initially identified as Black and White said:

If I was in an in-depth conversation with someone, I will now elaborate and explain that I am mixed with a number of ethnicities. I would explain that though my parents appear to look Caucasian and African American that it has been proven that I also have many other ethnicities.

These individuals seemed interested in being part of and representing a diverse world. In addition to being interested in and seeking knowledge about global diversity, other multiracial participants had either immigrant parents or grandparents and felt personal links to cultures beyond the United States. A White/Latino 9-year-old respondent whose father is Latin American talked about attitudes about soccer in Latin America, where he has visited several times. Unlike generations past, these individuals had roots in other countries, freely traveled back and forth, spoke to relatives on the phone, and did not hesitate to talk openly about where they were from. In particular, when parents were from two different backgrounds, cultural differences may be discussed specifically and blending cultures may be part of daily conversation, and the experience seemed to untether them from a narrow view of race.

One person expressed, “I think my results are perfect because it represents so many societies and the joining and merging of so many ethnicities.” Several comments were similar, such as, “My perfect background would be all races because I would have all those cultures to pull from.” These people were probably the most racially flexible.

On the other hand, not relating to a particular race in a racialized society may be problematic. A Brazilian–African American–German woman said, “When we’re watching videos in school about slavery, it makes me uncomfortable. It’s as if they’re putting it on me because they’re my ancestors. I feel sorry for what happened, but I don’t relate to slaves.” She resented people pegging her simply because of her skin color. Adding to her complexity, this young woman had a mother who identifies as German and Latina and a father who was African American. She mentioned that her father’s mother has often said, strangely, “My son is married to some Korean woman.” When the mother (who was also tested and interviewed) had a DNA profile that come back with a high percentage of Asian descent, everyone (except, perhaps, the mother-in-law) was baffled. All wondered what the mother-in-law was seeing in her daughter-in-law all these years. The revelation expanded an already demanding racial narrative for the daughter, but she said she will expand her narrative to include this new information.

### ***The person distinguishes traditional categories of race from culture and owns the two identities in different ways***

This perspective gives the individual authority to claim a culture and identification even if a DNA link is not expected or found (perhaps in the same way a Chinese child adopted into a White American family may identify as White because of lived experience but is often given authority by non-Chinese to speak about the Chinese culture and may feel pressure from culturally Chinese to behave or feel in certain ways). About half of respondents used this pattern of articulation, concurrently mixing and matching their racial and cultural identities. This happened quite a bit when DNA results did not have a racial profile that they expected but they felt they owned because they had lived experience in that culture. Participants who articulated identification that fell into the second or third pattern often also brought this pattern into their identity narrative. Often, their identification not only shifted among their racial DNA categories but also included their culture and lived experiences.

One person explained that she loved Latino culture but pulled from majority culture a certain feeling of entitlement that she did not see in her Latino peers. Still, she retained what she valued from the Latino culture, such as the warmth of people, the language, family orientation, and food:

I look very White and my dad (from Ecuador) traveled a lot so I spent more time with my mom (who is White). I would say I'm culturally White ... I'm not sure if it's so much race as culture. You could say, I mean it could be, culture is probably almost synonymous. My dad (from Ecuador) has a much more group-oriented culture. So first is family, as I'm not sure if my mom has told you any of this story but the dynamic of the mother-in-law, the parent, the in-law dynamic, it's a cultural difference in Ecuador and South America. It's customary for, I know especially, well I mean I can't speak for other South American cultures, but in Ecuador it's customary for the ... parents of the newlyweds to be present for the honeymoon. And the newlywed couple goes to visit family on their honeymoon. It's what my parents had to do when they got stuck with my grandma and grandpa from Ecuador, and my parents had to chaperone them and take them around New York for 2 weeks instead of going on their honeymoon. And my "abuelo," my dad's father, suggested that they all share a hotel room on the very first night when they got to New York because they wanted to save on costs. My mom was like "what?"

A multi-ancestry DNA profile confirmed her distinction between a rich culture and a racial background that was not tied to a single group. Especially when an already multiracially identified person finds that their ancestry profile is not the neat breakdown predicted (half Chinese and half African, for example), they feel most compelled to articulate the race-culture distinction.

Some respondents wanted to claim a cultural identity more fully because it showed up as part of their genetic background. One woman talked about interest in joining the club for students of color in college because she was invited, being "half black." She said that she felt welcome, but that never fully happened because she did not relate emotionally. Her DNA profile just further complicated her sense of race because it had more Middle Eastern than African results, but she (a biology major) said this was likely her more distant ancestry, and she did not relate to that at all culturally and could not identify as such because it was not part of her lived experience.

The DNA results of another respondent who initially identified as African American and Native American showed 98% African and no Native American. However, because of her family experience in Native American culture, she continued to identify as both, even if not everyone in her family did:

I think that was just a cultural thing. In fact, my dad is the chief of the Nanticoke tribe. My oldest sister feels very much that because a lot of the Native Americans back then didn't want any of the darker skin Indians in the Nanticoke tribe, that we shouldn't identify with them at all because [of] that rift ... whatever happened in the tribe. My mother passed in July but she was the same way. She would help with the powwows, and cook and stuff, but she would never officially join the council because she always felt like they had alienated and segregated themselves and she just couldn't quite get past that.

This perspective can give insight regarding a person like Rachel Dolezal, the sensationalized case of an American woman born into a White family, who became ensconced in African American culture and community. She ultimately changed her looks and began to call herself biracial and African American. When confronted, she described herself as genetically White and culturally Black, clearly implying that her lived experience, or culture, was equally if not more salient than her biological ancestry. Many in the African American community found her story offensive, but this study suggests that this might happen more often than one might suspect. One could also ask, if a person like Rachel Dolezal took an ancestry test and found any African in her background, would the critique of her change, and exactly how much ancestry would be required to give her authority to make a claim? The fact that she felt that she had to "perform" a Black identity by changing her physical appearance and creating a personal narrative is intriguing. There is a perceived price to pay when one does not have genetic authority, which is why finding no ancestry in the area with which one has always identified is also anxiety-provoking.

Multiracial people do seem to offer some insight into a world where racial lines are accepted as fuzzy and where racial profiles and stigma are challenged even within oneself.

Changes in world communication, travel, migration, and social, political, and economic dynamics, as well as changes in racial categorizations per se and ancestry DNA testing, which continues to advance (Sudmant et al., 2015), are leading to more complex ways mixed-race individuals choose to identify and how they articulate this. Ancestry DNA has pushed people to the edge of their racial classifications. It

provides an additional layer of information to consider in how they choose to identify themselves, a process which, as explained in the introduction, involves a myriad of factors such as phenotype, social class, language spoken, family narratives, and peer relations.

This work leads to three conclusions regarding the link between ancestry DNA and the racial identity of multiracial people. First, adding new ancestry DNA information further muddles the neat categories of race, consistent with new articulation of race based on genetic data (Hirschman & Panther-Yates, 2008; Hochschild et al., 2012) and the view of race as socially constructed (Richeson & Sommers, 2016). Second, for multiracial individuals, it emphasizes fluidity of identification theorized by researchers such as Renn (2008). Third, and relatedly, even for people who identify as multiracial, it challenges the neat percentages they tend to associate with their backgrounds. Particularly for younger multiracial individuals who were presented with this more fluid image, it gave them less of a sense that race was a real thing and more of a sense that culture played a big part in how they saw themselves.

It is interesting that many multiracial people seem to have developed a comfort with a narrative that functions in the context not only of their DNA but also of culture and experience. Yet, since many of them already challenge society's conception of race, they will probably continue to expand their articulation of self, leading the way to new views of race and perhaps comfort with the idea of racial ambiguity. The potential clearly exists and has been noted by others who are exploring ancestry DNA data and race (Hirschman & Panther-Yates, 2008; Hochschild et al., 2012). Our exploration of how genotype information affects identification narratives of multiracial individuals concludes with a finding that multiracial individuals, especially younger ones, use new DNA information to add texture and depth in talking about their identities. Their increased flexibility may push society as a whole toward more complicated views of race, although the process is slow and certainly not straight or unidirectional.

All of this brings up the point that narratives of race are in transition and that this is only highlighted among people who have already pushed the boundaries of race. Narratives are important—and not just narratives of family and culture but also genetic narratives. Multiracial individuals view all of these narratives to be valid in how they see themselves, and they are at the forefront of questioning societal limitations and impositions on how they claim and articulate their race. One could make a case that the world is surely in need of expanded narratives regarding race.

## Limitations and future directions for research

There are six limitations that can be highlighted—four related to participants and two to ancestry testing. First, as referenced above, the definition of multiracial is complicated. For example, Latinos and African Americans almost by definition embody a diversity of ethnic backgrounds. In addition, groups have separated and remixed throughout human history, back to the Neanderthals (Smithsonian Institution, 2016), so the idea of “biracial” and even “multiracial” could be misleading. Because this work focuses on identity rather than some external standard, the authors feel that self-identification is an adequate measure, although not ideal.

Second, in addition to the complexity of identity, the range of ages represented in this project is challenging. The small number of participants in each age group made it difficult to have definitive statements about age differences. Our analyses had to manage differences in identity that varied across generations, and sometimes the underlying reasons for variations were difficult to distinguish, especially in the small sample. This is justified by the goal of seeking broad preliminary findings that will continue to be explored with both qualitative and quantitative approaches. Future researchers can recruit more strategically across age categories.

Third, in this work, most participants identified as part White, which can add elements of majority/minority identification that were not explored in depth here. And, finally, while other work in our broader research program examines single-race people (Foeman, 2009, 2012; Foeman et al., 2014), this study does not compare the experience of single-race people to

multiracial individuals extensively, although this is a topic that would be useful to explore in future research.

In terms of the test itself, genetic ancestry is different than the common concept of race and is not always understood. Also, geographic lines between countries and ethnic groups shift and change over time, as do association with these groups, which challenges interpretation. These too are issues to explore in future investigation.

As options develop, people may shift categories more and more people may move into the multiracial category. The cultural trend is toward more identifications, rather than fewer, as suggested in U.S. Census data (Shih & Sanchez, 2009). The implications for social movements based on race as well as social programs that track by race may only be evident in the long term, and the ability to articulate what these things mean in the face of complicated new information, including ancestry DNA testing, remains to be seen.

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