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Backdoor To Essentialism? Genetic Ancestry Testing And The Social Deconstruction Of Whiteness

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BACKDOOR TO ESSENTIALISM?
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DEDICATION

To my interview participants, this project would not have been possible without your voices, thank you for trusting me with your intimate stories. This dissertation is also dedicated to my departed family members. I could not have completed this project without their lifelong love, guidance, support, and encouragement that influenced my academic career path long before I chose it.

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Chapter 1 Introduction

In 2008, prominent attorney and law professor Elizabeth Warren announced a bid for a US Senate seat in Massachusetts. During the campaign, Warren's opponent, Scott Brown, suggested she had gained professional advantages by falsely claiming to be Native American. During a televised debate, Brown stated "Elizabeth Warren said she was a Native American, a person of color, as you can see, she's not." Though she won the race for Senate, Warren continued to face pressure to prove that she never used Native ancestral status to gain entry to college or law school or advance her academic career (Catanese 2012). In response to her critics, Warren publicized [1]Direct to Consumer (DTC) DNA test results indicating she had a distant Indigenous ancestor.

Publicly sharing her results backfired for Warren and instead prompted additional criticism. In February 2019, the Cherokee Nation pressured Warren to issue a public apology for politicizing her DNA test results. The Cherokee Nation's communications director stated: "[B]eing a Cherokee Nation tribal citizen is rooted in centuries of culture and laws, not through DNA tests" (Oprysko 2019). Even Warren's liberal supporters questioned her political motives and labeled her ancestral claims a form of symbolic violence (TalBbear 2019). The controversy surrounding Warren's genetic lineage and ethnicity underscores the increasing prevalence of genetic testing in popular culture, where it is being used to authenticate a social identity by "proving" racial/ethnic group membership with genetic evidence (Duster 2006; Roth and Lyon 2018).

In the late 20th century, spawned in part by the Human Genome Project, ideas about race and ethnicity shifted away from the essentialist belief that humans can be grouped into biologically relevant, discrete races. More recently, however, Genetic Ancestry Testing (GAT) has exploded

[1] Direct to consumer (DTC) genetic testing is also known as Genetic Ancestry Testing (GAT). As such, they are used interchangeably throughout the manuscript.

in popularity, as individuals seek to identify their ancestry and/or genetic health profiles through genetic testing. For instance, testing is marketed as a way to connect with one's ancestral past or as a diagnostic tool for the propensity of developing certain health problems. Such trends suggest the popularity of testing could be a new platform for disseminating essentialist views on racial categories, because they suggest a biological reality for race and ethnicity; a reality that is purported to have an impact on individual health, tastes, and personality.

Purpose Statement

The purpose of this dissertation is to understand how the widespread use and advertising of DTC testing shapes individual attitudes towards the biological basis of racial classification. Through a mixed method study employing in-depth interviews and a survey experiment, this dissertation addresses two objectives: first, through interviews with test-takers, I explore the motivations for test-taking and investigate how test takers think and talk about the relationship between their genes, race, and racial identity. Second, after learning from the experiences of test-takers, I will deploy an online survey experiment analyzing if the framing of DTC testing in advertisements impacts the general public's views of race and biology.

To date, there is limited sociological research on the implications of widespread use and advertising of genetic tests for popular understandings of race. Early scholarship suggests that people who identify as white are both more likely to take genetic tests and to change or exoticize their identity based on results. These studies suggest that DTC testing may allow white Americans to have "exotic" identities while still cashing in on white privilege in their lives. This research seeks to explore if the utility and the advertising of DTC testing also shapes individual's beliefs about the biological reality of race and ethnicity, thereby representing a "backdoor to essentialism."

Contributions

This project offers important empirical and theoretical outcomes. First, this underexplored area of research is timely as DNA testing companies like *23andMe*, and *Ancestry* have amassed the genetic data of as many as 25 million people and counting.

Second, the disproportionate impact of COVID19 on communities of color could reify the biological realities of race in the imaginations of white Americans, this project will provide additional insight into how Americans understand the link between socially mediated racial categories and genetic profiles.

Third, this study contributes to theoretical scholarship because my participants offer a unique account of how the social construction of race is experienced in the context of genetic testing, ancestry, and identity formation in a "post-racial", "post Trump" era. Drawing on Omi and Winant's pivotal work on the social construction of race, I argue there is a newly emerging racial formation process occurring among white individuals. The dynamics of racial formation, in this capacity, are motivated by a new type of racial project, the GAT, in which coinciding institutions of science and media implicitly encourage whites to reconsider their racial identity.

Dissertation Map

In the following dissertation, Chapter 2 reviews the theoretical frameworks and scholarly literature which contextualizes the current study. The theoretical underpinnings of racial essentialism and the social construction of race provides the historical and sociological backdrop to the literature on racial identity, public conversations about genes, and the role of genetic ancestry testing. This chapter also describes current scholarship on genetic testing while also demonstrating what the present study can add to the literature, as well as the relevance and importance of the study.

Chapter 3 describes the mixed methods research design used. Here I explain the interview process and survey experiment. I also explain my coding process and which coding methods I used to analyze the data. This chapter serves to make the research process transparent and replicable for future studies.

Chapter 4 describes the in-depth interviews with white individuals. In this chapter, I describe and use examples of participant motivations behind genetic ancestry testing, aspirations to discover a Native past, and how genetic testing prompts white racial formation to reconceptualize and deconstruct what it means "to be white." While describing participant experiences, I also explain similarities and differences within extant scholarship.

Chapter 5 explores the in-depth interviews with nonwhite individuals. In this chapter, I explicate and use examples of how genetic ancestry tests appeal to diverse groups, their experiences with genetic ancestry testing and identity formation, accounts of being 'othered' in America, and the difficulties navigating institutions of whiteness as a multiracial/ethnic individual.

Chapter 6 reports on the survey experiment. In this chapter, I describe the survey design, measures use, and the major results gleaned from analyses. Based on these data, I also discuss interesting patterns that promise interesting directions for future analysis.

Lastly, chapter 7 intertwines supporting literature and overall empirical findings. After briefly summarizing each chapter, I make the theoretical argument of the "social deconstruction of whiteness." Moreover, I discuss opportunities for future research, reflexivity, and limitations of the project.

Chapter 2 Theoretical Framework and Review of Literature

Racial Essentialism

During the eighteenth and nineteenth centuries, racial essentialism was the leading racial ideology in the U.S. Racial essentialism is the belief that the human species can be divided into discrete, biologically distinct racial groups and that the genetic differences that lead to phenotypic differences among groups also have social implications. During this era, powerful white figures spread ideologies of a racial hierarchy that placed white Europeans as superior to other racial groups as a way to justify rigid racial hierarchies and white supremacy. Characterizing people of color as unintelligent, hostile, or animalistic justified slavery and white supremacy, and convinced a majority of the white population to regard any type of interracial relationship as a threat to white society. Subsequent issues of "blood purity" became the leading facilitator in maintaining segregation and a precursor to biologically deterministic racial classifications such as the "one drop rule," which stated anyone who "looks" like they have one drop of African American blood was officially categorized as black by society (Harris and Sim 2002; Roth 2005; Feagin 2013). Even in the context of essentialism, racial classification varied by region, and was contingent on social and political interests; in Virginia an individual was characterized as black if a great-grandparent was black, but in Alabama and individuals was considered black if they have any black ancestors. Although authorities could not fully deter white colonists and slave owners from intermingling with enslaved women, legally enforcing the one-drop rule and criminalizing interracial relationships served to deliberately prevent an increase in multiracial individuals and maintain "white purity" specifically tied to ideas that race was carried in the blood (Roth 2005).

Essentialist belief systems undergirded several biological theories endorsed by early science. For instance, polygenism is the belief that different racial groups hold different origin and

creation events. Polygenists aimed to obtain evidence proving different races constituted a different species of existence (TallBear 2013). Phrenology was another leading belief; phrenology suggests differences in intelligence and behavior is based on the shape and size of the human brain across different races. With little scientific evidence, Morton and Nott reported the shape of Europeans skulls to be larger than other groups of people, which, they argue, demonstrates the superiority of white Europeans (TallBear 2013). By the early twentieth century, eugenics became the new leading proponent of essentialist beliefs. Eugenics is a movement committed to perfecting humans through selective breeding (Duster 2003; TallBear 2013). However, by the end of World War II, international pressures influenced several countries to publicly disengage with this type of work because of Hitler's association to eugenics (Duster 2003; TallBear 2013).

The Social Construction of Race

In contrast to the essentialism of the past, scientists today overwhelmingly understand that racial groups are not biologically real but are instead a product of socially constructed ideas that occur during a particular set of historical circumstances and serve to justify racial hierarchies (Omi and Winant 1986, 1994; Morning 2018). In a touchstone work on the social construction of race, Omi and Winant (1986, 1994) emphasize the contemporary and ongoing relationship between the state, racial classifications, and racial movements as they are complex, interconnected, and rooted in predetermined ideologies. These authors delineate how historically situated "projects" encourage racial formations to emerge from the inequities in society. Racial formation is a socio-historical process by which concepts of racial categorization are created, inhabited, transformed, and destroyed (Omi and Winant 1994). Systems of hierarchal social structures are reproduced and maintained by socially classifying groups of people by skin color or other phenotypic traits (Omi and Winant 1986, 1994; Harris and Sim 2002; Brubaker 2018). Bonilla-Silva (2001) asserts that

the socially constructed act of using human traits, like phenotype, to designate a racial category or to justify prejudice and discrimination is always social and is always structured in some hierarchical pattern that maintains dominance and enables white privilege.

Predetermining racial classifications enable white political leaders to dictate race and ethnic identity in different contexts and during different points in time. For instance, the first census was used as a means to record the number of "free persons" or white males and females (Emigh, Riley and Ahmed 2015). Eventually, it became standard procedure to catalogue skin color on the census which propelled the conventional process of separating white people or "full citizens" from enslaved African Americans in documentation. Anderson (2003) asserts, to be white is not to be black, and blackness is therefore constructed in opposition to the white identity. White is a category in which ethnic and racial differences are drawn from, and iterations of the census have been used throughout history as a tool for political institutions to determine Native-born citizens and separate nonwhite racial groups from the rest of society (Waters and Jimenez 2005). Accordingly, efforts to categorize groups of people also significantly influence how society perceives ethnic/racial groups, individual feelings of belonging and the idea that to be "authentically American" is to be "white."

After the turn of the century some white Europeans were also marginalized as ethnic minorities which, for a period, posed real consequences for lived experience and social mobility; Italians were viewed as murderers and bootleggers, and Jewish students were subjected to stringent university quotas (Hirschman 1983). Eventually, European immigrants were encouraged to abandon ethnic practices, learn English, and begin assimilating into American/white society (Hirschman 1983; Waters and Jimenez 2005). Opportunities were increasingly being presented to light skinned immigrants who could "pass" as white, which "increased the possibility of

controlling one's own life rather than being the object of others domination (Bell 1995)." Assimilation helps white passing immigrants to participate and benefit in mainstream social, political, and economic arenas, essentially becoming white.

Subsequently, most white Americans of European ancestry have the option to be what Waters (1990) calls "symbolically ethnic." For example, today, individuals considered to be white have the privilege and ability to be take ethnic pride in St. Patrick's Day (Waters 1990; Hartigan 1997). In this capacity, white people can bend their culture, ethnicity, and identity, while groups racialized as nonwhite experience unequal social outcomes in nearly every social indicator of society. Nonwhite people are unable to experience those options as readily, which scholars underscore problematizes idea of being "American" with being "white" (Hartigan 1997; Kibria 2000; Gallagher 2003). Similarly, Gallagher (2003) highlights how whites can tap into ethnicity anytime by playing "the white ethnic card." For instance, in a study consisting of interviews with white respondents, many generations removed from early immigrant experiences, Gallagher (2003) finds participants commonly likened their ethnic family history to oppressive circumstances experienced by marginalized people during the Asian migration, European immigration, or Antebellum slavery.

According to Gullickson (2016), as a reflection of the "white ethnic" struggle, racial ancestry studies became popular when identifying the ancestral ties of a particular white immigrant population. As immigration rates increased, so too did integration and assimilation, complicating efforts to prove ancestry. Overtime, white identity has also become increasingly complex in the way the category of "white" is measured by the census. For instance, today, people from Latin America and the Middle East experience conflicting racial logics; they are legally considered "white" on the census even though they are treated as non-white in everyday society.

Each of these examples underscore that race is a social construction because racial categorizations are not dependent on genetics or ancestry, but instead on a constellation of social and political interests at any given time-period.

Race, Genes, and Identity

Despite being social constructs, the categories of race, and the importance of skin color for racial classification, have a significant effect on individual outcomes, experience, and identity making, particularly for biracial and multiracial/ethnic individuals in U.S. society (Rockquemore 2002). For instance, some biracial individuals can make choices regarding racial identification by relying on resources like lighter skin color and/or structural location (Rockquemore and Arend 2003). Lighter skinned individuals that "look" white have more autonomy and social mobility. Exploring Asian identity, Khanna (2004) indicates respondents use reflected appraisals as part of their identity making process. For example, respondents were more likely to identify as white in spaces they believe people would classify them as white or white passing, and similarly, respondents were more likely to identify as Asian in spaces when they believe others perceive them as such. For some multiracial individuals, Rockquemore and Brunsma (2002) indicate that a "socially perceived appearance" is more meaningful than their self-described racial identity. Although respondents may self-identify as biracial, they experience life as a person of color because that is how they believe society perceives them.

Kibria (2000) similarly emphasizes racial categories place constraints on everyday social interactions that promote perceptions of "foreignness" and "sameness." Drawing from in-depth interviews, Kibria (2000) finds that, for some Asian ethnonational groups, "downplaying ethnic distinctiveness" emancipates the ethnic binds experienced by second-generation Korean and Chinese Americans in contemporary US society. Assumptions surrounding "ethnic authenticity"

impact the dynamics between Asian ethnonational groups and non-Asians and encourages intergenerational conflict.

Even more problematic are the tensions between cultural and biological definitions of Native American identity, which are particularly challenging to navigate, especially for those seeking to authenticate or legitimize Native identity. U.S. political society has gone to great lengths to exclude people from participating in or from receiving federal support, resulting in official government definition of this racial category. For many individuals, proving Native membership through "blood quantum laws" or "tribal blood rolls" can be a complicated, and sometimes controversial, undertaking (Bonilla-Silva 2001; TallBear 2013). Some individuals eschew biological definitions of Native identity and attempt to reclaim an Indian or Native American ancestral identity by participating in a tribe's culture and traditions. Yet, despite these efforts, reclaimers without a proven biological link to Native ancestry, are sometimes called "wannabes" or "fake" by both Indians and non-Indians (Jacobs & Merolla 2017). In contrast, these reclaimers consider the individuals formally recognized in tribal or federal contexts as simply "talking the talk," whereas reclaimers consider themselves as "walking the walk" (Jacobs & Merolla 2017). To confuse matters further, genealogical DNA tests for racial and ethnic ancestry are increasingly being framed in larger public contexts as a way to legitimate or authenticate group membership and identity (Roth and Lyon 2018).

The surge in DNA testing is controversial for tribal membership (TallBear 2013). For the benefit of non-Natives, DNA tests imply mixed Natives are less Native, which contributes to the disappearance of Native people. Native scholar, TallBear (2019) emphasizes ancestral claims publicized by people who are far removed from the Native American experience, like the case of Elizabeth Warren's DNA tests results, are a "form of symbolic violence." According to TallBear

(2019), Warren's resistance to meet with the Cherokee Nation's Chief displays a loyalty to colonialism above the chance for kinship. If Elizabeth Warren participated in Cherokee culture and traditions, would that have been more acceptable? Still, in some cases, reclaimers of Indian identity are being criticized as a "wannabee" despite "doing the boundary work" by engaging in tribal culture.

Racial ancestry is a dimension of race that influences other dimensions, like self-perceived identity and socially observed race. Regulating the fractional breakdown of racial ancestry has been the basis for determining who is black or indigenous for the better part of US history (Roth 2016). There is a long history surrounding Native American tribal membership on both federal and tribal levels, which shift in relation to historical context, political interest, or financial gain. Due to the forceful elimination of many tribes throughout the U.S., several have been left to reconstruct their cultural heritage. Further, because of the government inaccurately allocating people into the correct tribes, much leftover dispute lingers among Native American families. Although genetic ancestry testing helps people explore racial ancestry, it has also opened subsequent pathways for contemporary whites, like Elizabeth Warren, to prove ethnic distinctiveness based on genetic evidence.

Return to Essentialism: Public Conversations about Race and Genes

The initial aims of the human genome project sought to explore genetic explanations for disease and risk for the human population. However, research in subsequent years has increasingly placed focus onto racial differences, based on Asian, European, or African populations; within the smaller, 0.1% of the genome (Duster 2003; Phelan, Link and Feldman 2013; Phelan et al. 2014; Fitzgerald 2014). Duster (2003) argues the mounting focus of race-based health differences further enable the media and public to interpret race as a biological reality. For instance, when disorders

have both inheritable and environmental components, the inheritable components are often the favored explanation. By drawing on the imprimatur of medical science, using genetic health screenings and treatments as the entry point, Duster (2003) warns that current and future genetic research is subtly being used, and reported to the public, in ways that are reminiscent of old racial science, theorizing the linking of genes to health as a backdoor to eugenics.

Scholars have tested Duster's (2003) theory in a variety of ways. For instance, Morning's (2008) study of race in high school biology textbooks found "backdoor" messages linking race, genes, and medical disorders appeared in 93% of textbooks between 1993-2002, compared to 0% in textbooks from 1952-1962. Similarly, Phelan, Link and Feldman (2013) set out to test Duster's (2003) theory by evaluating public exposure by exploring their responses to race-based genetic diseases and respective essentialist beliefs. As such, they conducted a content analyses of news stories between 1985-2000, and a survey experiment of race-based genetic vignettes based on similar public news stories. As expected, the authors found articles about race, genetics, and health were less likely to mention racism or raise ethical concerns questioning the validity of genetic causation. Further, they find that exposure to such "backdoor" message linking genes with racial disparities in heart attacks increased essentialist beliefs among Americans. Ultimately, the authors find, through an increase in "backdoor" messaging, modern genomic information may increase public support of racial science; in short, the public is being enabled to increasingly believe in essentialist differences between racial groups (Phelan, Link and Feldman 2013).

Another example of the media's questionable reporting on genetic issues is the coverage surrounding the so-called "warrior gene," a genetic variation purported to explain violent behavior among African American males. Sometimes sensationalizing and oversimplifying genetic data, the media invites the public to draw inaccurate conclusions about the genetic basis for behavioral

differences (Perbal 2012). In 2011, the popular talk show *Dr. Phil* did an episode titled "Born to Rage," with the show's website providing a link to *FamilyTreeDna* (the leading DNA testing company at the time) for people to test for the "warrior gene." Dr. Phil borrowed the title from a *National Geographic* program in which Henry Rollins, the former front man for the iconic punk rock band *Black Flag*, interviews bikers and MMA fighters to explore how some people are innately aggressive. The media's fascination with the "warrior gene" as a biological explanation for violent behavior can even be found in fictional spaces like the television series, *CSI: Miami* (Horgan 2011).

Studies on linking race and genetics continue to make their way into popular journalism. For instance, in the late nineties, *Sports illustrated* published an article questioning the differences in athletic ability between white and black basketball players (Price 1997). The article emphasizes white athletes are not winning as many awards because of essential biological differences between white and black players, and as a result, white players are treated as "second-class citizens." Price (1997) concludes by aligning with essentialist theories; that black people have innate abilities in athletics. More interestingly, this essentialist thinking regarding racial differences subtly supports white cultural dominance; if black people are performing better than white people, there must be a genetic explanation.

Echoing a similar tone, the *Huffington Post* published an article explaining that genome mapping can explain the differences in athletic performance between black and white athletes (Hughey and Goss 2015). Scholars, Hughey and Goss (2015) highlight how contemporary genomic data is being uncritically accepted by mainstream journalism in ways that promote essentialism and justify poor performances by whites. Analyzing almost 24,000 newspaper articles across the globe between 2003-2014, Hughey and Goss (2015) found nearly 55% of media

narratives that discuss race, genetics and athletics embraced and perpetuated the belief that African-descended groups excel in athletics, such as running or sprinting, because of genetic racial differences. Each of these narratives reverberate back to the essentialist belief that darker skinned individuals are inherently atavistic whereas white individuals are intellectual and civilized.

Further, these manifestations of essentialist racial beliefs in the popular media are extensions of the general trend of using genetic science to "prove" racial differences existing within the body have substantial social implications and discount the role of ongoing and historical racism in producing racial disparities in life outcomes (Hughey and Goss 2015).

The Unknown Role of (DTC) Genetic Testing

DTC genetic testing kits are an increasing trend in the US. For a modest fee, DNA kits are mailed to individuals who send back a genetic sample of spit to learn what percentage of their DNA is traced to the continentally based categories of Europe, Africa, Native-American, and Asia (Brubaker 2018; Roth and Lyon 2018). Y-chromosome tests paternal ancestry, autosomal tests are used for tribal or group membership, and mitochondrial DNA traces direct maternal ancestry lines (Roth and Lyon 2018). Common genetic assessments involve testing haplogroups which are associated with different geographic regions based on the migration out of Africa into other regions of the world over the last one-hundred thousand years. It is believed that groups of people that took different routes during migration carry a subset of genetic variation within immediate ancestral groups as well as developed new mutations (Roth & Lyon, 2018). The haplogroup of a parental line is the genetic population group most associated with different routes of early migration (Brubaker, 2018; Roth & Lyon, 2018). To date, it is estimated that over 25 million people worldwide have taken a GAT (ASHG, 2020).

Also known as "recreational genetics", genetic testing is seducing people to foray into an ancestral past (Bolnick et al. 2007). Testing can be especially appealing for African and Native Americans to trace ancestry and tribal membership, build family trees, or to corroborate claims of descent from historical figures like Sally Hemmings (Nelson 2008; Roth and Lyon 2018). However, social scientists and medical experts warn DNA companies are promising more than they can offer (Bolnick et al. 2007; Roth and Lyon 2018; Brubaker 2018). DTC DNA results are merely a proportionate finding based on the respective company's database. For example, because companies use a variety of genetic markers to make comparisons about a consumer's DNA, databases include all other individuals that have taken a test, therefore, the larger a database grows, the more likely results can change (Royal et al. 2010; Roth and Lyon 2018).

Moreover, DNA testing companies are marketing at-home genetic testing kits that offer biological explanations to the socially constructed processes of racial identification. Testing companies sponsor television programs and commercials that reinforce biological understandings of racial and ethnic categories; genetic testing companies are portraying images of people being prompted to either check a new racial category, trade in bagpipes for lederhosen, learn health information, or confirm group membership based on their genetic histories (Roth and Ivemark 2018; Brubaker 2018). *Ancestry* commercials "explicitly promise to reveal an individual's genetic identity" by providing a proportionate breakdown of various "ethnic groups" and *23ndMe* feature health information and ancestry as a dual package (Roth and Lyon 2018; Brubaker 2018). More recently, conversations concerning how race is being portrayed in DTC company advertising has generated controversy. In April of 2019, *Ancestry* was forced to remove a commercial depicting the love story between a white man and black woman as he entices her with a ring to flee north with him to freedom. The commercial was criticized for misrepresenting the lived reality for many

enslaved black women who regularly experienced physical abuse and sexual assault at the hands of their white overseer (Petrone 2019). The tone of this example overlooks the historically contingent nature of racial and ethnic identity. With hopes that new test takers are prompted to discover these types of family stories, the company was reprimanded for exploiting and minimizing experiences still relevant today. Commercials portraying white dominance and racial subordination with genetic science playing a nuanced role is reflective of how U.S. culture falls flat when addressing racial history and how genetic testing companies are willing to push a colorblind narrative for profits.

Literature on DNA tests, the characteristics of test takers and how testing affects identity is small but bourgeoning. In one of the first studies on GAT participants, Nelson (2008) conducted interviews and fieldwork with individuals of African descent in the UK who engaged in GAT for purposes of genealogical research. Her research showed that individuals interpreted test results in a variety of ways that were related to their own understandings of their family histories and genealogies. In other words, their genetic matches were used as one piece of evidence used to construct or reconstruct their identity. Studies describing experiences of test takers are increasingly suggesting that GAT is prompting a geneticization of identity (Henk ten Have 2001, 2021), in other words, individuals are increasing basing their racial and ethnic affiliation based on the outcome of GAT rather than their lived experience or family history. For instance, recent research using surveys and follow-up telephone interviews indicate whites are both most likely to take genetic tests and to exoticize their identity compared to other racial groups (Roth & Lyon, 2018; Roth & Ivemark, 2018). Roth and Lyon's (2018) survey analysis indicates most test-takers were primarily interested in tracing genealogy, however almost 60% also wanted to know more about their race and ethnicity. Further, about 40% of respondents claimed they viewed their race

or ethnicity differently, and nearly 50% claimed their test results affected friendships. 10.8% of respondents fully embraced a new racial identity whereas 16% fully embraced a new ethnic identity, and 8.7% tested to claim membership to a group (Roth & Lyon, 2018). Roth and Lyon (2018) note respondents taking tests to claim tribal membership were very small. A very recent study suggests that after taking a GAT white individuals were less likely to make assumptions regarding the racial and ethnic backgrounds of others in their social network, a finding that hints at the belief that an individual's "real" race or ethnicity can only be discovered by examining their genetic profile (Roth, Côté, & Eastmond, 2022).

Conversely, while many white Americans are taking on ethnic or foreign identities, Panofsky and Donovan (2019) find that white supremacy groups are using GAT to prove their whiteness. Between 2004-2016, the authors qualitatively analyzed user comments within the largest known white nationalist website, *Stormfront*. Clearly based in essentialist thinking, *Stormfront's* rules dictate that to become a member an individual must "be of wholly European descent to be white." Panofsky and Donovan (2019) find when users receive criticism over test results, they will manipulate them accordingly to maintain membership. For instance, test results showing "11% Persian, Turkish and Caucasus" and "25% Middle Eastern and North African," prompted fellow site members and administrators to redefine their definitions of whiteness and explain that "Persians are Aryans" to help people accept or convince other members that the results read as "white." Similarly, to avoid being removed from the group, another user combined their results of "58% European and 13% Middle Eastern" to 71% asserting that Middle Eastern *is* "white." Ultimately the authors find Stormfront members frequently provide broad justifications for rejecting undesired results; they believe family histories and archival documentation are superior to genetic testing, that race and ethnicity are obviously visible, that DNA companies hold

anti-white bias, and explain small differences as statistical error. Thus, even among a racist hate group whose very mission is the promote the essentialist idea of "white purity," racial categorizations are contested and social determined.

Presumably to maintain some control in the identity making process, people tend to negotiate their test results, despite scientific interpretation. As a result of being exploited and excluded, Nelson (2008) argues African Americans self-navigate and self-select results of genetic tests to promote community attachment. To date only one study has directly examined DTC testing and essentialist beliefs. Roth et al. (2020) studied the effects of DTC test results on test-takers' essentialist beliefs on race. Comparing a control group to a group of test-takers, Roth et al (2020) find test takers' essentialist interpretations are conditional on an individual's genetic knowledge. Roth et al. (2020) refer to an individual's basic knowledge of genetics as understanding "that humans share 99% of the same genetic code." Although findings show that test results had no significant effect on test-takers' beliefs, results did indicate the more genetic knowledge a participant contains, the lower their belief in racial essentialism, and respectively, participants showing little to no genetic knowledge displayed an increase in essentialist beliefs.

The relatively nascent research on GAT test takers suggests that while individuals do not necessarily take the GAT results as definitely, the results are weighed among other considerations in future understandings of their own race and ethnicity. Importantly, this process as well as the motivation for testing varies by race. Whereas black Americans were more likely to use GAT as part of broader genealogical research, whites were more likely to take the test recreationally or to discover their true racial or ethnic identities. Even when whites do not change their identification per se, they often relate that they are "proud" of their newly found racial or ethnic lineage (Roth, Côté, & Eastmond, 2022).

Selling Essentialism? The DNA Testing Companies: 23andMe and Ancestry

Beyond the role of DTC testing on test takers, this project also examines the role of DTC test advertising on the public's views of race. The most recent research (Roth and Lyon 2018) indicates TV and online media are principle means by which people learn about genetic testing; 32.2% of participants first heard about genetic testing through advertisements on genealogical websites and 31.8% learned through popular media like television commercials. This research focuses on the two leading DTC DNA companies: *23andMe* and *Ancestry*.

23andMe is one of the leading consumer genetics and research companies. Founded in 2006, they launched the first national TV campaign to inform people about how DNA tests can help people better understand their health. In 2012, *23andMe* became the proprietary service used by the television show *Finding Your Roots*. By 2013, they were the first company to provide a saliva-based DTC test, and also the first to launch a TV campaign about DTC DNA testing at home. In 2018, *23andMe* partnered with Northwestern university to conduct a large-scale internet-based survey asking a nationally representative sample of 3000 people about race and genes. Results of the survey show that most Americans agree that genetics are not determinative of racial identity, however, findings suggest there are important differences by subgroup (Tillery Jr. 2018). Namely, individuals who identify as white (66%) were significantly more likely to think that information contained in their DNA is a factor determining racial identity. Attitudes on culture and skin color indicate 48% of respondents believe that skin color is the best way to determine racial identity, 35% believe that culture plays an important role in determining racial identity, 34% see family history as the most important factor determining a person's race, and 18% percent believe that race is determined by an individual's "personal choice" about their identity. Latino respondents were more likely than other Americans to reject the idea that skin color determines

racial identity. Asian American respondents were significantly more likely than the rest of the sample to say that "shared culture" was a factor in determining racial identity (Tillery Jr. 2018). Closely behind *23andMe* is *Ancestry, which* expanded its online genealogical research site (Ancestry.com) in 1997 by integrating *AncestryDNA* in 2007. By 2010, they formed a partnership with the television show: *Who do you think you are?* Today, *Ancestry* is the largest consumer DNA testing company in the world, reaching a milestone of over 15 million people in their DNA network. Although they heavily focus on genealogical ancestry, aspects of health have been recently integrated into *Ancestry's* testing packages.

More recently, the Covid-19 global pandemic has prompted both companies to initiate studies in search of a genetic component to explore how people contract and respond to the coronavirus, compare exposure differences, illness experiences, and medication therapies (23andMe 2020; Ancestry 2020). Third parties will be able to examine millions of people's genetic data across an array of moderating factors such as race, ethnicity, age, and gender. With a tremendous number of unknown factors, does this open the door to make assumptions about race and ethnic difference in relation to virus and disease? Moreover, the disproportionate impact of COVID-19 on communities of color could reify the biological realities of race in the imaginations of white Americans.

Critically, within the last couple of years, we are experiencing a reality in which the Covid-19 pandemic has been politicized to the degree that some Americans are unsure if the coronavirus is a hoax or if they should trust medical science. The unknown role of genetic data in relation to disease and disorders, in this context, provide the exact concerns in which Duster's (2003) theory cautions. With a history of questionable portrayals of race in advertising, and the ability to access

and report on millions of genetic profiles, are DNA testing companies unassumingly taking a backdoor to selling essentialism?

Summary and Research Aims

Human genome research brings much attention to understanding humans at the genetic level, however, it is also reinvigorating scholarly debates and fostering mainstream conversations about essential differences between racial groups. Public conversations concerning genetic science are entering mainstream media contexts by encouraging the public to (re)consider their race, ethnicity, identity, and explore their genetic histories by taking an at-home genetic test. In this newer area of research, still little is known about who takes genetic tests or why people are taking them (Roth and Ivemark 2018; Brubaker 2018). Moreover, sociological research has yet to explore the effects of company advertising on test-takers. The aim of the current study broadly explores the experiences of taking a test and how company marketing might change or complicate essentialist views. Through a mixed method study employing in-depth interviews and an internet-based survey experiment, I address the following objectives: a. Why people test. B. How people think and talk about race, and identity, c. Did testing make a difference in how they understand essentialist ideas d. and did the advertising make a difference in how people understand essentialist ideas?

Chapter 3 Research Methods

Study Purpose

Through a mixed method study employing in-depth interviews and a survey experiment, this dissertation project addressed two objectives: first, through interviews, I explored why people take tests and investigate how test takers think and talk about genes, race, and identity. Second, after learning from the experiences of test-takers, I deployed an online survey experiment analyzing how the framing of genetic testing in advertisements impacts the general public's views of race and biology. Social scientists examine media content, deploy surveys, and conduct interviews to gauge the general public's individual beliefs about race, genes, and biology. As such, my research agenda engages in an integrated sequential mixed-method approach (Morgan 2014). Combining methods encourages a more rigorous research design and can test assumptions that are generally untested within a single-method research approach (Seawright 2016). Moreover, the use of an integrated multi-method study is also advantageous because of the contribution that one approach makes to the other (Morgan 2014; Seawright 2016). For this study, the qualitative data was used to refine instruments for the online survey experiment that analyzes if genetic testing commercials make a difference in the general public's views of race and biology.

The meaning of race and individual identity are deeply personal concepts which can sometimes be an active meaning making process. Therefore, in-depth interviews are crucial to obtaining the internal narrative of people's lived experience and meaning making strategies associated with individual identity. I aim to understand how the interview population consumes, interprets, and constructs meaning from genetic testing. Ultimately, the interview data helped to inform the quantitative portion of the study by determining the design, as well as generative patterns of genetic knowledge to inform or amend survey questions.

Qualitative Sample Criteria & Recruitment

Participation in the in-depth interviews was open to any adult that has taken an at-home genetic test for health or ancestry. After snowball sampling and soliciting three separate calls for participants via Facebook, I was able to recruit and interview 30 participants between June 2020 and March of 2021. My sample consists of 12 men and 18 women from across the nation and abroad. Overwhelmingly, participants identify as predominately white, with prominent Western Europe or Scandinavian ancestry. About 5 people in the sample identify their race as brown, black, or multiracial with ethnic backgrounds in Lebanon, Africa, El Salvador, Cuba, The Bahamas, and Mexico. Most of the white participants are fourth generation or beyond, while a majority of nonwhite folks held stronger ethnic ties to their countries of origin as a permanent resident, first generation immigrant, or second generation American. Ages ranged from 30-68 with over half of the sample receiving incomes above 76k. Moreover, most participants are college educated; one person did not attend college in any capacity. The demographic make-up of my qualitative sample can be viewed in Table 1. below.

Table 1. Interview Participant Demographics

NAME	AGE	GENDER	RACE	ETHNICITY	INCOME	EDUCATION	REGION	DNA COMPANY
Alan	37	Male	White	Ashkenazi Jewish/Polish	76k-up	Four Year	Michigan	23 and Me
Alejandro	39	Male	I don't know	Latino	26-50k	Four Year	Ohio (El Salvador)	Ancestry.com
Alyssa	30	Female	White	European	26-50k	Four Year	California	23 and Me
Amelia	53	Female	White	German/English/Scottish	76k-up	Advanced	Michigan	23 and Me
Andrew	37	Male	White	Western European	51-75k	Advanced	Colorado	23 and Me
Anna May	58	Female	White	French/Irish/German/English	76k-up	Four Year	Kentucky	Ancestry.com
Barbara	61	Female	White	European; English Irish Scottish	51-75k	Some College	Kentucky	Ancestry.com
Casey	35	Male	White	Australian	51-75k	Some College	Michigan (Australia)	Ancestry.com
Clara	31	Female	White	German/French/English	51-75k	Four Year	Michigan	Ancestry.com
Diane	61	Female	White	Caucasian	51-75k	High School	Michigan	Ancestry.com
Frank	35	Male	White	Caucasian/English/Irish	0-25k	Some College	Michigan	Ancestry.com
Gabriella	62	Female	White/Non-Hispanic	Italian	51-75k	Four Year	Ohio (Italy)	23 and Me
Gary	62	Male	White	European, Dutch	76k-up	Four Year	Georgia	Ancestry.com
Geoffrey	30	Male	Black	Bahamian	26-50k	Advanced	The Bahamas	23 and Me
Jeff	68	Male	White	European	76k-up	Advanced	Ohio	Ancestry.com
Leah	39	Female	White	English/Irish	76k-up	Advanced	Michigan	23 and Me
Leon	61	Male	White	White Anglo Saxon Protestant	76k-up	Advanced	Ohio	Ancestry.com/National Geographic
Lucille	60	Female	White	European	76k-up	Four Year	Georgia	Ancestry.com
Lynn	61	Female	White	European	76k-up	Some College	Ohio	Ancestry.com
Margaret	61	Female	White/French	French/German American	76k-up	Four Year	Alaska	23 and Me
Maria	50	Female	Multiracial	Afro-Latino	26-50k	Advanced	Ohio	Ancestry.com
Marla	62	Female	White	Caucasian	76k-up	Advanced	Ohio	23 and Me
Michelle	62	Female	White	European	51-75k	Four Year	Tennessee	Ancestry.com
Peter	32	Male	White	American/European	76k-up	Four Year	Michigan	23 and Me
Ramona	35	Female	White	Hungarian/Hispanic	26-50k	Four Year	Michigan	Ancestry.com
Salam	37	Female	Brown/Other	Lebanese	26-50k	Advanced	Ohio	23 and Me
Sam	50	Male	White	Armenian/German	76k-up	Advanced	Michigan	Ancestry.com
Stacey	53	Female	White	European	76k-up	Some College	California	Ancestry.com,23andMe
William	58	Male	White	Irish	76k-up	Some College	Kentucky	Ancestry.com
Yasmine	35	Female	Brown/Other	Lebanese	76k-up	Four Year	Michigan	23 and Me

Data Collection

In-depth interviews are the ideal way to capture meaning behind genetic testing experiences and to explore how those meanings are shaped by their interactions with their family, friends, and society at large (Tracey 2013; Hesse-Biber, 2016). In total, I conducted 30 in-depth interviews with adults that took a genetic test for ancestry or health. These interviews afforded me the opportunity to learn about what is important to these individuals, how they engage with genetic testing products, and how they feel about consuming this type of technology in the context of identity, race, and ethnic ancestry.

Interviews ranged between 30 minutes and 2 hours. Because data collection occurred during the Covid19 pandemic, all interviews were conducted over the video conferencing software, Zoom. Prior to interviews, participants were emailed a consent form that described the study. Interviews were also recorded in Zoom and transcribed using Otter.ai, an AI transcription application, and then transcribed again to look for errors made by the AI system.

The objective of the interviews is to explore how the experience of taking a genetic test affects the way people understand or make meaning of race, ethnicity, and identity. As such, I examined participant responses in four areas of focus: 1) Social and self-appraisals, 2) Genetic knowledge, 3) Motivations for testing, and 4) Testing experiences.

Social and self-appraisals. To understand how participants socially and legally self-identify their race and ethnicity, I asked questions about identity and background. I also asked participants to describe what factors are most influential to their self-described race and ethnicity, and what factors are most significant to their identity in relation to background and family history.

Genetic Knowledge. In this section, I aimed to explore a baseline of participants' genetic knowledge. As part of the assessment of genetic knowledge, if able, I prompted participants to

describe how they understand genetics more broadly, in terms of the genetic data gleaned by DNA tests, and how they understand race/ethnicity in terms of biology and genes. To form a baseline understanding of genetic knowledge, I rely on Roth et al.'s (2020) conceptualization and specifically asked individuals if they agree with the information that all humans share 99% of genes.

Motivations to Test. Here, I focused on learning why people engage in testing. Participants were also be prompted to describe how they learned about DNA testing (i.e. media formats of commercials or internet advertising), and company chosen for testing. These questions help me to glean perspectives on the companies themselves, and if they relate to why a participant decided to test. For instance, more information can be gained about health and disease risk by testing through *23andMe*, whereas *Ancestry* offers an experience geared toward tracing genealogy. My goal was to draw out why participants decided to test, and if their motivations are related to company promises about genetic science. Additionally, these responses helped to determine the treatment selection and design for the quantitative portion of the study.

Testing Experiences. Here, I asked test takers about their pre-testing expectations and post-testing interpretations. My goal was to understand how participants generally view DNA tests, gain insight into what participants were hoping to learn prior to testing, and how those initial expectations might contradict or confirm results. It was also important to learn about post-testing experiences and how test results might affect their activities (i.e., join an online forum about testing and ancestry, participate in cultural traditions), or friendships and conversations with family (i.e., health or ancestry related). Additionally, I asked how they perceive their test results in relation to their social and self-appraisals of identity, if at all.

Interviews were semi-structured and often went 'off script' with in-depth discussions about the social and political climate, issues of racial and ethnic identity, or stories detailing family experiences. Below are a few examples of interview questions from each section.

To assess social and self-appraisals, I asked: "How do you identify your race and ethnicity when filling out the Census or professional documentation?", "If someone asks you about your racial/ethnic background, how do you respond", "How do you identify racially and ethnically?"

To assess genetic knowledge, I asked: "At the most basic level, would you agree that everybody from every racial group share 99% of all genes?", "Where did you learn information about genetics?"

To assess motivation to test, I asked: "How did you learn about DNA testing?" (This question also helped to determine the type of treatment for the survey portion), "Can you tell me why you decided to take a test?", "Which company did you choose and why?"

To assess testing experiences, I asked: "Prior to taking the test, how confident did you feel in the test results?", "What was the reason for your confidence (or lack thereof)?", "What were you hoping to learn from the test results?"

Data Analysis

After interviews were collected and transcribed, they were then analyzed by primarily using an inductive but focused strategy to code emergent patterns and common themes (Tracey 2013; Hesse-Biber, 2016). Because the qualitative data is also being used to refine the quantitative survey instrument, focused coding is used to capture and organize data by thematic issue. After creating short memos from each interview and using the focused approach, I coded interviews according to the following themes: why people test, what impact do DNA companies have on test-taking decisions, how participants understand race as a biological or sociological construct,

individual genetic knowledge, and how genetic data plays a role in identity meaning or making. Next, I open coded the focused themes relating to the original research questions and past literature, while also noting any new patterns or codes that emerged during analysis. A vast majority of the coding process occurred by hand, which and was later expanded and organized into a digital chart.

In the case of some categories, such as when looking at the motivations behind testing, the data was much more complex, so I modified the category to account for that new information as necessary. For example, about 14 people in the sample claimed to have indigenous ancestry, 11 are white participants with prominent western European background, 5 of which specifically tested to confirm indigenous ancestry. Ultimately, I created more nuanced categories to capture the patterns around participant motivations for testing.

Quantitative Survey Design

For the quantitative portion of the study, I ask if testing makes a difference in how people understand essentialist ideas and how does the framing of DNA advertisements affect individual beliefs about racial essentialism? Aligned with extant literature, many of my interview participants learned about genetic testing from some form on online web-based advertisement. Therefore, after learning from the subjective experiences of test-takers, I deployed a 2x2 online survey experiment using vignettes designed to look like a web-based genetic testing advertisement. This strategy aims to determine if the framing (health vs. ancestry) of genetic testing and the race (white vs. non-white) of the people present in advertisements impacts views of racial essentialism.

Respondents were randomly presented with one of four possible vignettes and asked how they agree with the following statements: This advertisement makes me want to learn more about my DNA. I would pay to use this service. I think 59.99 is a reasonable price for a DNA test. This

ad makes me think that GAT testing can tell me more about my identity. This ad makes me think if I learned more about my genetics, I would want to travel or learn another language in relation to my background. I would take a DNA test if it could show my indigenous or Native family ties. This ad makes me want to explore the stories of a Native ancestor in my family.

The next two blocks of questions incorporate two different multi-item measures of racial essentialism, derived from Yaylaci, Roth and Jaffe's (2019) genetic essentialism scale for race (GESR) and the Northwestern/*23andMe* survey (2018). Each scale uses a standard 5-point Likert scale from "strong agree" to "strongly disagree" with an "I don't know" choice.

Respondents were asked to agree with the following statements from the (GESR): Some people think that biology determines your racial identity, whereas other people argue race does not have anything to do with biology. How do you agree with the following statements? Certain races may be better athletes than others because of genetics; Certain races may be smarter than others because of genetics; There used to be "pure" races in the past; The human population is divided into biological races; No matter what a person looks like, genetics can tell what race they really are; DNA technology will help us develop better racial classifications based on genetics; Races are groups that societies invent; Everyone's ancestors originally came from Africa; People of all races share most of the same genes; There are some diseases that only members of certain races can get; Knowing a person's race can help doctors know what diseases that person is likely to get; People from different races can have the same physical traits or features; There are genetic differences among races, but they are biologically insignificant; The only genetic differences among races relate to their physical appearance; There are no "pure" races because the groups are so intermixed.

Respondents were asked to agree with the following statements from the Northwestern/23andMe survey: Racial identity is determined by your biology; Racial identity is tied to your biology but not determined by it; Racial identity is totally separate from your biology; Racial identity is constructed by an individual; Racial identity is determined by society through racial classifications; DNA testing is a major factor in determining racial identity; DNA testing is a major factor in the prevention of health risks; DNA is a major factor in determining the health differences between racial groups; DNA is a major factor in determining the behavioral differences between racial groups; DNA is a major factor in determining the cultural differences between racial groups; DNA is a major factor in determining the athletic differences between racial groups.

The next block of questions are from Henry and Sears' (2002) Symbolic Racism scale. Respondents were asked to answer questions relating to the following statements: It's really a matter of some people not trying hard enough; if blacks would only try harder, they could be just as well off as whites; Irish, Italian, Jewish, and other minorities overcame prejudice and worked their way up. Blacks should do the same.; Some say that black leaders have been trying to push too fast. Others feel that they haven't pushed fast enough. What do you think; How much of the racial tension that exists in the U.S. today do you think blacks are responsible for creating? How much discrimination against blacks do you feel there is in the U.S. today, limiting their chances to get ahead; Generations of slavery and discrimination have created conditions that make it difficult for blacks to work their way out of the lower class; Over the past few years, blacks have gotten less than they deserve; Over the past few years, blacks have gotten more economically than they deserve.

Included as demographic information, I also asked respondents if they have already taken a GAT test at home, along with their age, race, gender, income, education, political affiliation, ethnic background, and religious affiliation.

The data for the survey were derived from a voluntary online convenience sample using the Amazon M-Turk platform. Eligibility is limited to individuals 18 years of age and older who responded from an IP address located in the United States. Volunteers were compensated $0.65 for their participation in the survey. As an additional quality measure to ensure attention, I used two items with opposite wording and eliminated all respondents who essentially agreed and disagreed to the same statement; additional sensitivity analyses suggested that results were not influenced by alternative screening measures (e.g., screening for exceptionally fast responses or duplicate IP addresses). In total, the survey yields an analytic sample of 878 out of 1,357 total respondents. Existing literature on survey methodology in the political and social sciences concludes that M-TURK is a promising new platform for conducting online research. Buhrmester, et al. (2011:5) finds that "MTurk participants are at least as diverse and more representative of non-college populations than those of typical Internet and traditional samples." The sample will also allow me to both describe the distribution of essentialist beliefs in the US and maintain the statistical power to identify differences between experimental groups. Please note, the next two chapters report on the qualitative findings, and chapter 6 explicates the survey results while also providing additional methodological details regarding the quantitative portion of the study.

Chapter 4 Genetic Ancestry Testing: Who's Testing, Why, and How are People Talking about Results?

In chapter 2, I reviewed extant scholarship suggesting that white Americans are both more likely to take genetic tests and to change or exoticize their identity based on results. These studies also imply that genetic ancestry testing (GAT) (also known as direct-to-consumer (DTC) DNA testing) may sell a story to white Americans that allow them to have "exotic" foreign identities while still benefitting from white privilege in their daily lives. With limited sociological research on the widespread utility of genetic ancestry testing, the demographics of test takers and motivations behind testing also remain unclear. My qualitative research broadly asks: Who tests? Why do people test? And how are people talking about identity in the context of their genetic profiles? After conducting thirty in-depth interviews with adults that have taken a genetic ancestry test, my research offers valuable insights on whiteness and the social construction of race in the genetic age. In this chapter, I discuss the demographics of my research sample, motivations behind genetic ancestry testing, aspirations to discover a Native past, and how white individuals conceptualize and deconstruct what it means "to be white."

Participant Demographics: Who Takes Genetic Ancestry Tests?

My participants are middle-to-upper class, tend to be older, well-educated, "white," and American. I interviewed eighteen women and twelve men that range in ages between 30-68. Interviews occurred over the video conferencing software "Zoom" -primarily due to the Coronavirus pandemic. However, there are benefits to digital data collection; the internet allowed for people to participate from a number of locations. For instance, I interviewed people from Colorado, Georgia, and the Bahamas. Although a vast majority of participants reside in the United States, four were born and raised abroad, and are either a permanent resident, naturalized citizen,

or live in another country. My participants are also highly educated. A majority (n=23) have a bachelor and/or advanced degree, with incomes above fifty-one thousand. They are nurses, administrators, professors, secondary school teachers, veterinary technicians, retirees, writers, homemakers, engineers, and chemists.

My interviewees' self-described racial and ethnic identity offered an interesting contrast between two groups of participants, however there are a few people that do not fit neatly into either group. Twenty-five (n=25) self-identify their race as "white", while five (n=5) self-identify as "brown", "black", "multiracial" and "I don't know." These five people also identify with less prominent European ethnicities and described their ethnic backgrounds as Afro-Bahamian, Lebanese, Afro-Latino, Latino, and Hispanic. The narratives provided by diverse participants will be further explored in chapter five. When self-describing ethnicity, a majority of people gave a range of characterizations. Twenty-three of the twenty-five "white" participants described their prominent ties with European ethnic ancestry in a number of combinations; some identify as "Ashkenazi Jewish and Polish", "English, French, and Irish", "German", "Italian" or simply "European." The latter two that identify as "white" also hold diverse backgrounds that include European ancestry. These cases are interesting and will be explored in later sections.

Motivations for DNA Testing: Why Do People Test?

Previous research (Roth 2018) indicates the utility of a variety of DTC DNA testing companies, however my research participants primarily used *Ancestry.com* and *23andMe* for their services; 16 participants used *Ancestry*, 12 tested using *23andMe*, 1 used both, and 1 used *Ancestry* and *National Geographic*. It is unsurprising that my research participants almost exclusively tested between two companies, as *Ancestry* and *23andMe* have become giants within the genetic testing industry. Most participants heard about testing through either a family member or popular media

source like TV and web advertisements. Participants cited a number of reasons for testing. Several participants expressed a multitude of reasons for genetic testing. In my sample, the most popular reason to test is to have fun, assuage curiosity, and validate family history in the process. In this charge, people are sometimes searching for a parent (n=2), test out of curiosity for the science (n=3), want to learn about genetic health risks (n=6), look for indigenous or Native ties (n=14), or to complement genealogy work (n=17).

Genetic ancestry testing enables people to learn information that can legitimize or invalidate some aspects of a background for an individual or family. Raised by a single mom, Ramona's primary reason to test is tied to providing proof to her family about the identity of her father,

> From a young age I was told my father was an ex-boyfriend of my mom's. When I was 13, my mom told me he wasn't my father; someone else was. He was a Mexican man that she had a one-night stand with. As time went on, I feel like she didn't want me to find him. I think she wanted me all to herself. When I was little, the man who I thought was my father was Middle Eastern- Syrian. I grew up thinking I was Middle Eastern like all my other friends, until I was 13. My mom passed away seven years ago, so when she passed away, um, I had a lot of family saying why don't you find your dad. Still to this day some of my family still thinks this Syrian man is my father. I'm like, "he's not my dad!", they were like, "are you sure?", and I'm like, "yeah, I'm positive he's not." So, I actually did the DNA testing to prove to myself *and* them that he wasn't my dad. And the test results came back that I was Mexican.
>
> (*Ramona, 35, Hungarian and Mexican, Michigan, Ancestry)*

Interestingly, once she presented her family with the information, they were suddenly able to recall a mysterious Mexican man from the past. Another participant had similar reasons for testing; to search for his parents and gain a sense of belonging. William was adopted out of an Irish Mother and Baby home in the early sixties. Currently obsolete, mother and baby homes are institutions in which young, unwed pregnant girls are relegated to experience the birth process. In these homes, many nefarious practices occurred, however there were also many successful adoptions.

> **William:** It's something I wanted to try, you know, just because, not having a lot of background. I knew I was from Ireland, obviously, but not have I couldn't, I could have been from anywhere, you know, wasn't didn't know where I was from, knew where I was born. But I knew that wasn't where I was, where my family was from. So that just open up the door to thought, hey, this might you know, close that gap for me, you know? Which it did.

Interviewer: Did testing give you more of a sense of identity?

> **William:** Now, I know who I am. I got a backstory now. So yeah, it's a lot more fulfilling, even though I got a great family here. But you know, there's always that thing…the other day, I was like, well, I'm not really part of this family. Not that anybody made me feel different. But yeah, the finding out and finding, you know, a backstory to who I am and the history of my family.
>
> (*William, 58, Irish, Kentucky, Ancestry)*

In these cases, testing to find a parent is born out of a larger pursuit to understand the origins of one's identity, whether that involves bringing closure to a family issue or providing a sense of belonging. As a result of testing, William maintains a close relationship with his Irish cousins; he and his wife visit Ireland at least twice a year.

There are often multiple reasons to test. In one such case, Peter tested out of curiosity, for the science and out of interest in family genealogy:

> It was a little bit everything. So, my parents are really into genealogy. So, they have a big old family tree that I think is up to 3000 people back to the 1700s. So, they've gotten really into that. So that's interesting. And then you've probably heard me say it a couple times already. I'm a bit of a science nerd. And just, I love data. So, it's like, Alright, well, if I can get some data on myself, why not just to like, poke through it? It just sort of out of curiosity. It wasn't that somebody told me to do it, or whatever. I asked for it for Christmas. …So, it wasn't something where I was like, diehard have to do this. I'm not going to spend the money myself, but somebody gets me a gift. Why not?
>
> *(Peter, 32, American and European, Michigan, 23andMe)*

Other participants, like Marla or Yasmine, tested specifically for the health component that *23andMe* offers in their testing package. Because of health problems within the family, Marla commented, "You know, I think seeing my husband's parents with dementia -they have vascular dementia, I thought, well, I should do this. So, I read about it and *23andMe* popped up, and they

had a sale!" *(Marla, 62, Caucasian, Ohio, 23andMe).* Yasmine expressed similar feelings to Marla, "I was curious, just because I've had some, like, certain health issues. And you know, I want to see, I you know, I had family that was really sick around me. So, just I got more curious about my own health" *(Yasmine, 35, Lebanese, Michigan, 23andMe).*

More than half of my participants claimed to be connected to or engaged in their family genealogy, for many it is informal work that sometimes became a hobby. Like many participants, Sam, became fascinated by the genealogy and building a family tree on *Ancestry.com*, "So, I can't remember when, but there was a point where I just kind of got sucked into the genealogy. And honestly, you know, when you're on *Ancestry.com*, it's all over there (on the website) to do the testing. And so, I did the testing" *(Sam, 50, Armenian and German, Michigan, Ancestry).* Other participants were hoping to find answers to lost research and fill gaps of family lore. For instance, Leah tested in hopes to resurrect decades of genealogy work that had mysteriously vanished.

> I had a great aunt who was really into a genealogy and had done a lot of work on my dad's side. So, she had done all of this research. But I was like, a kid, right? So, it was kind of a, I remember some of the stories. But when she passed, there was some family drama, and all of her research is like, gone. No one knows what happened. Because it was mostly it was hardcopy, because this is like, the 80s and 90s. And so, she was like, 90 years old. So, like, it was not on a computer, she had gone to all these libraries and like, hang out, and it got lost. And it's like this massive tragedy to my dad. And in my mind, too, is like this massive tragedy, like, 'oh my God', we lost all of this. And like to recreate it… this was like, 20 years of her life that she just kind of it was her hobby. So, it's like, just terrible that it's gone. Like it's gone. It's not coming back. We have some suspicions about what happened to it. But it's, it's gone, whatever it is. And so, I always kind of felt like there was that gap of like, you know, oh, we have this information, but we no longer have it. … So, I kind of had been hoping that the DNA test give me like, maybe a starting point from that perspective.
>
> *(Leah, 39, English and Irish, Michigan, 23andMe)*

People may set out to test to find a parent, for health, or to complete part of a family tree, but the curiosity surrounding family stories always found a way to enter the conversation; will they discover a scandal in their history, is there someone of Native descent connected to the family?

For many of my participants, it was common for family lore to involve stories of a mysterious Native relative or secret "Indian princess." These concerns were expressed by almost half of my interviews, and in all cases, test results failed to indicate any Native or indigenous heritage.

> So, it's, it's interesting, because on my dad's side, we've always been kind of told, like, we have this like fourth or fifth cousin, that is fully Native American and lived with a tribe in upstate New York. And so, like my grandparents, kind of facilitated this idea of like, oh, we have this, Native American piece to us, and so part of what I really wanted to see was kind of wondering like, oh, is there anything -and there was nothing in it.
>
> *(Leah, 39, English and Irish, Michigan, 23andMe)*

Barbara discussed her great, great grandfather, a prominent civil war surgeon, and philanderer:

> He also kind of liked to tip the bottle and he liked the ladies and had like 28 kids. He had kids from I don't know, six or seven different women. And there was always talk that he had some Indian Princess, and I'm thinking, oh, I don't even want to know about that. But that bloodline has never come through to my family…
>
> *(Barbara, 61, English/Irish/Scottish, Kentucky, Ancestry)*

And then there is Andrew's mother, who insists upon the existence of a Native relative in the family:

> My mom is convinced that her mom's dad or grandpa was somebody in the Cherokee Nation. So that's the thing that's been passed through like, that's just been like, common knowledge in the family, right? But then getting these test results back and not seeing any of that DNA in your makeup. I guess it makes us like, question what's true, and what's not true.
>
> *(Andrew, 37, Western European, Colorado, 23andMe)*

Overall, people test to confirm, preserve, and maintain family history. Testing also fulfills a longing to connect to an ethnic identity. Sometimes the idea of having an ethnic identity is to not be white, but instead, to be "exotic" and relate to something other than white. Although many participants shared a common narrative concerning the surprise of learning something different than the stories they grew up with, the benefits of white privilege have allowed for the bending of ethnicity or identity without material implication, at least nothing comparable to the daily obstacles

that black, indigenous, and people of color face. It should be mentioned that an overwhelming majority of my participants have the resources and material ability to participate in testing and deliberate over results. 76% of my participants are educated and contain middle to upper class incomes.

Further reflective of social status and privilege, some participants have taken on hobbies or different activities in addition to testing. For instance, as a result of testing, three participants routinely travel abroad, two DNA tested their dog, one is learning a new language, and several expressed interest in building a family tree or continuing their family's genealogy work. For example, upon learning some new and confirming information about her German roots, Clara is embracing some of the cultural aspects of German ethnicity by travelling and learning the language. "[A] division of the company I work for is in Germany. So, I've gotten to travel there a couple times. And at some point, actually have the chance to move there, maybe. So, I did actually try to start learning German. So that's a new hobby" *(Clara 31 German/French/Irish Ancestry).* Similarly, influenced by the fun of it, Sam was inspired to test the family pet.

> Our dog looks as German Shepherd as you could possibly imagine, other than his colors, often they get, you know how German Shepherds have the shade particularly underneath on their legs and, and the shape of his face. They (the test) say, he's like, less than a quarter German Shepherd, and that just doesn't make any sense. So, I wouldn't be surprised if it was total bullshit. But, you know, really, when we're doing these, both from the ancestry thing and the dog thing, in our mind, it's just for fun. I mean, we're not banking on it in any way, shape, or form, you know?
>
> *(Sam, 50, Armenian and German, Michigan, Ancestry)*

Numerous people made jokes about drinking more, suggesting it's indicative of their Irish heritage. These activities and in-depth discussions about searching for an ethnic background are in parallel to Waters (1990) work on white European ancestry and exercising the ability to be symbolically ethnic. "Symbolic ethnicity is in a sense superficial, intermittent, and does not interfere with day-to-day life, while simultaneously representing a source of pleasure and

meaning" (Waters; 1990: 91). Testing may be a popular vehicle for people to justify expressions of symbolic ethnicity, but a larger portion of my sample were interested in discovering an indigenous relative or confirming a specific Native tribe for self-enrichment purposes. The remainder of chapter four describes the paradoxical nature of searching for a Native or ethnic past and breaking down what it means to be "white."

White Identity in Search for a Native Past

One of the most intriguing findings of my interview research is how common it was for participants to have stories of Native ancestry in their family. In Golbeck and Roth's (2012) work, to my knowledge the only other study demonstrating these phenomena, 30% of participants identified as white and Native American or altered their self-identification as Native American to white or vice versa based on respective testing results. Similar to Golbeck and Roth (2012), nearly 30% of my sample (n=11) were Euro-American, Caucasian or white European people searching for a Native heritage, however, those participants learned they do not possess Native in their background. As a result, testing shifted some of my participant's self-appraisals of racial and ethnic identity, particularly when it came to their apocryphal Native ancestry.

Interviewer: if someone asks you about your racial or ethnic background, how do you respond?

> **Jeff:** Well, that has changed as a result of what I found out in the DNA tests. But I would certainly now say Caucasian.

Interviewer: What would you say prior to that (testing)?

> **Jeff:** Well, you see this there was a story in my family that we all accepted as fact. The story was that my mother's grandfather, and I don't know on which side of the family, but my mother's grandfather was a Cherokee Indian. That explained something to us, which was my mother had a dark complexion and jet-black hair. My younger brother had a dark complexion and jet-black hair. …And then I took the DNA test. No Native American in there at all.
>
> *(Jeff, 68, European, Ohio, Ancestry)*

Alyssa is another interesting case as she identified as Native American up until testing three years ago, complicating ideas of what it means to have Native in her background.

Interviewer: if somebody asks you about your racial or ethnic background, how do you respond, like how do you identify?

> **Alyssa:** I usually say, white, which is interesting now that I'm like saying that. But when I was a child, I would always say Native American. Okay, um, but I've later found that's not at all in my genetics. So. Um, Yeah, I think I always wanted to identify as something. I was told as a young girl that I had Native American in me, and I thought that was really something to, like, latch on to, and that's something that I did for my entire life, up until about maybe three years ago. So yeah, um, now I just say white, or like, European or American or whatever, depending on the question asked.

Her parents had been ushering this idea about being Native by instilling a tradition of dressing her up as an Indian at Thanksgiving for many years. Subsequently, Alyssa grew up thinking she was Native American, specifically Cherokee, and was ready to connect with her indigenous history. Testing, in her mind, was only going to validate what she already knew. Yet, to her surprise there was no indication of Native descent.

> Oh, I mean, that was a big part of like, oh, I'm going to find out how much Native American I am and like what tribe and all this stuff- literally thought I was going to find out maybe what tribe?! And I was like, well, I heard it's Cherokee. I literally was like, excited to find out so I can really hone in on my Native American. So, then I find out, oh my god there's zero.

Instead, testing forced her to address difficult truths which she ultimately expressed through feelings of regret and guilt.

> I couldn't believe how much weight I put on that and was like, wow, I really like wanting to identify as something that I was told I was. And now I feel like I don't know who I am. And I thought that was interesting to see how much like a race or ethnicity or like where like this thing I wanted to latch on to meant to me, and then it wasn't even a thing. And then I'd be like, Oh, so I'm just like a European. And I come from Europe. And that's that. And I lied so many people. I think I'm more concerned that I've been lying to everyone for all my life …I used it as an identifier. I identified as Native American!
>
> (*Alyssa, 30, European, California, Ancestry)*

For some, it was unsurprising to learn there was no evidence of Native to support the stories they grew up learning about. They were more likely to wrestle with their whiteness than dispute test findings. In fact, a few participants like Lynn, took this moment to reflect on settler colonialism, whiteness, and privilege rather than trying to fit into an indigenous narrative or embrace a new ethnic identity. Yet, at her core, Lynn was searching for an alternate narrative to the origins of her whiteness:

Interviewer: So, when you received your results, what were your initial reactions?

> **Lynn:** I'm not surprised that it didn't show that there was zero, you know, Native American. Even though I wanted there to be, I wanted at least a speck of it, not like zero.

Interviewer: Why do you want that?

> **Lynn:** I, I'm not sure what difference it makes to know. Your ancestors came from where you're living now versus you know, Europe?

Interviewer: But why is it more interesting to be Native American than European?

> **Lynn:** Just knowing how, how horribly American, the, you know, Native Americans were treated. You know, everything was stolen, their land was taken from them that I don't know why I just felt like. Well, maybe it comes down to I didn't want to be related to the people that did that to them.

Lynn was teased by her family about even searching for a Native heritage.

> **Lynn:** [O]ne of my sisters was like, oh, we all knew that wasn't true, Lynn. Why'd you even do that!? -I just wanted validation. *(Lynn, 61, European, Ohio, Ancestry)*

Growing up, people placed great importance on having Native in their background. Inevitably, the importance reinforced through family stories impacts how people understand and prioritize their life. For instance, Jeff used to credit his affinity for hunting, respect for land and different cultures

to his Native heritage. This led to conversations about longing for an ethnic past, and in an effort to understand this paradox, I asked why he wanted to connect to something other than white.

> **Jeff:** [S]o, as it turns out, we're about as white bread as you could get. Which was not only a surprise, but a little bit of a disappointment. I kind of liked thinking I had this Native American.

Interviewer: Can you tell me more about that? -Why is it that you like the idea of being connected to something other than white?

> **Jeff:** Good question. I hadn't really given a lot of thought, you know, I grew up my father was very avid outdoors, my grew up hunting and fishing and all that stuff. So, I think that gave me I think that was part of it, you know, like to think I was from a hunting culture and that sort of thing. And also, I just found that interesting. I mean, it just seems kind of boring to me -being plain old white bread, it's more interesting to have a little diversity in your background.
>
> *(Jeff, 68, European, Ohio, Ancestry)*

Similarly, Lynn just wanted to be more important than just being white with European ancestry.

> What I wanted, was to be important. And, growing up I was told I was from American Indian heritage, and I thought that was the coolest thing on the planet. I don't know why exactly, but I thought that was something to be proud of. So anyway, later in life there was some question that it was like, maybe not true. …but that's why I wanted to do that DNA test. I thought, well, by God, I want to see because I want that to be true, but it turned out there wasn't. There is absolutely zero American Indian.
>
> *(Lynn, 61, European, Ohio, Ancestry)*

Gary expressed a desire to connect to any ethnic heritage, Native or otherwise. "I was expecting I wanted because my mother and parents always talked about the fact that my great grandmother was a quarter Cherokee that I was expecting some Cherokee, but I didn't see it in this DNA testing that we did." I decided to press further and asked why he was disappointed about the lack of Cherokee,

> Oh, I just thought that I might have that in me because my grandmother. If you notice, I get excited about any DNA that I might be tied to. It'd be cool to be tied to Asian or, like

> the more variety that they find, the more interesting it is. So, I ended up with a little bit more variety than anybody in my family. I mean, yeah, I get sentimental to Indians.
>
> *(Gary, 62, European and Dutch, Georgia, Ancestry)*

To which his wife Lucille, laughingly commented: "Now, he wants to be a part of the 13th tribe of Israel; he wants to be Jewish, *and* he wants to be Cherokee. *(Lucille, 60, European, Georgia, Ancestry)."*

Within the past decade, stories of white Americans having a Native relative have become increasingly common to the extent that scholars underscore this behavior as being clichéd (TallBear 2013; Roth 2018). Although there is limited data showing this phenomenon, my research provides additional insights into this is increasingly popular trend. In the minds of white Americans, Native identity can be confirmed through the help of genetic testing processes. Paradoxically, these people place importance on connecting to something Native, or ethnic while disconnecting themselves from the historical realities of a settler colonial past. In other words, people are searching for an alternate narrative to their whiteness. When learning about the absence of Native or indigenous heritage, feelings of disappointment were palpable but at the same time, they were also unsurprised, and willing to accept the results. It is important to mention that testing for Native or indigenous background is, questionable at best. In fact, just two of my participants were aware that DNA testing for Native or indigenous background is not something that DTC DNA companies can really offer. The tests themselves are unable to determine indigenous or Native heritage, and the companies, to a degree, admit to the limits of their testing ability in relation to determining indigenous background. Despite these limitations, a number of participants shared hopeful expressions about finding Native in their background.

According to TallBear (2013), Native DNA is rarely, if at all, tested for by using genetic material, however when a sample is collected it is typically analyzed using y-chromosomal or

paternal haplogroups (testing a parent, usually in the male line). Despite this fact, neither company processes their sampling in these ways, nor do they confidently test for indigenous DNA. *Ancestry* uses autosomal DNA testing, and if you have Native American DNA, it will appear in your results as the Indigenous Americas region. On the website, it is encouraged for people to research family trees, interview family members and examine Indian tribal rolls instead of relying on genetic testing for confirmation. *23andMe* also looks at genetic variants across the genome as well as mitochondrial DNA and claims that testing can *broadly* detect Native heritage. For Native peoples in North, Central and South America, this could include DNA assigned to a population labeled Native American, broadly north Asian and Native American, or broadly east Asian and Native American. This type of testing reveals minimal genetic evidence of Native ancestry and is not formally considered in legal or tribal contexts. Moreover, in November of 2020, influenced by numerous customer complaints, a product scientist blogged about *23andMe*'s inability to determine Native ancestry, insisting that the public should not use testing services for these purposes (Esselmann 2020). The implications from genetic ancestry testing are social and political for indigenous identity; the belief that testing can determine Native ancestry and the sentiment that "we are all related" contributes to larger issues of erasure and sovereignty for tribal nations in North America (TallBear 2013).

Deconstructing Whiteness: What Does it Mean to be White?

The social construction of race also considers ways in which people formulate a white identity. Feelings of pride, belonging (Panosfky and Donovan 2019), racelessness (Bell 2021), and guilt (DiAngelo 2011) are inextricably tied to racial formations of whiteness. Similarly, pride, racelessness and remorse are prominent themes expressed by the white individuals in my analysis, especially by folks searching for or claiming to have an indigenous or Native ancestor. My research

suggests there is a social deconstruction of whiteness that is experienced through racial projects of genetic testing. For the purposes of this study, deconstructing whiteness describes ways in which white folks reflect on self and social perceptions of race and ethnicity in the context of their lived experiences.

Testing provokes a potential breakdown in racial structures for white identity to be made more visible through the idea of having Native or otherwise "exotic" ancestors or mixing and matching different ethnic backgrounds. As Omi and Winant (1990) describe, racial projects are sites in which race is contested. My research shows the expression of such a site on a micro scale through the lived experiences of white individuals. For instance, a large portion of participants were searching for or claimed to have a Native ancestor. Why is this such a popular phenomenon? The mere thought of having a complex ethnic background or a Native relative is facilitated by a racial fissure generated under the science of genetic ancestry testing.

Complemented by family stories, genetic testing offers the opportunity for individuals to contest and breakdown their existing racial and/or ethnic identity. Based on changing social, cultural, historical, and political interests, European descendants with phenotypically lighter skin have the privilege and ability (with encouragement from popular media) to reexamine their racial and ethnic background via testing. Upon doing so, some of my participants experienced, even if for just a moment, a breakdown in their current racial reality accompanied with varied emotions of reflection.

Participant conversations transpired over the internet during a global pandemic and controversial election year for the U.S. As such, interviews often shifted in and out of discussion surrounding world and national events. Because racial inequality and Black Lives Matter was punctuated late spring and early summer of 2020, conversations surrounding race were, for the

most part, easy to bring up -until I asked what it means to be white. For many, this was a difficult concept to express or define. Many people were surprised, and sometimes shocked at the question. For instance, Diane, a 61-year-old retiree replied, "I'm not sure I understand the question." Ultimately, having to think about "being white" puzzled several people. Similarly, Amelia felt stumped by the question and initially deferred to racial classifications.

> I've never even really thought about it really" "…You always check that box, you follow what your parents did, and you just followed along. In looking at my DNA when I did the DNA thing, we all come from Scandinavian areas, European and upper Northern Europe. And they tend to be very white out there. I know, that sounds like a cliche thing, but I've never really thought about it. Just something that I guess was passed down. So, it just, it's, yeah, you got me stumped now. Now I'm going to think about it.
>
> *(Amelia, 53, German, English and Scottish, Michigan, 23andMe)*

Many individuals have never had to wrestle with meaningful understandings of race, ethnicity, or whiteness. The couple from Georgia, Gary, and Lucille, respond in ways that reflect this point.

Interviewer: If somebody asks about your racial or ethnic background how do you respond, how do you identify?

Gary: I've never been asked

Lucille: I've never been asked that either. I mean, people have assumed because of my last name that I'm German, but I'm not *that* German.

Later, when I asked about their whiteness, comments varied from having a lack of choice to being prideful.

Interviewer: What makes you white? Or when you say 'Irish, German, French' to describe your racial or ethnic identity, what does that mean to you?

Lucille: Yeah, it's not real meaningful. I didn't have a choice really. And I don't really look at myself like some people look at themselves as like, I'm white, or you're black or whatever.

(Lucille, 60, European, Georgia, Ancestry)

> **Gary:** I mean, a sense of pride. Because you think of the world history and what it's all about, not in terms of American history, but world history. A lot of that history comes from Eastern Europe and Britain and the wars where they came from. So obviously we come from a strong people.

(Gary, 62, European and Dutch, Georgia, Ancestry)

Gary and Lucille take pride in accepting diverse groups of people. They proudly described the diversity of their neighborhood as well as the interracial relationships of their children. I also had the pleasure of interviewing Lucille's sister Michelle. Together, Michelle and Lucille describe themselves as having a Heinz 57 European mix and experienced a childhood upbringing not unlike the movie "The Help." The movie plot takes places in the 1960s segregated South and focuses on the relationships that white families had with their black maids during the rise of the Civil Rights Movement. Similarly, Lucille and Michelle grew up on a mountain town in Tennessee and were raised by a black maid whose memorable upbringing and relationship became cherished well into their adulthood. Their privileged childhood was indicative in their responses when having to grapple with concepts of race and ethnicity.

> Gosh, this is so embarrassing. We lived on a mountain in Tennessee. And I went to school with all white kids. Totally white kids. Have you seen the movie? The Help? So that is a little like what I grew up with. So, the maids would come up on the buses up to the mountain. There were no black people allowed on the mountain, and so Maxi was the first probably African American person that I really had a personal relationship with. I mean, I loved Maxi. She was like a mom or better than a mom. You know, she had a lot of good common sense and really wanted the best for us.

(Michelle, 62, European, Tennessee, Ancestry)

Some people in my sample have overlapping views of race and ethnicity, while also understanding race is used as a societal construct. Sam describes his grandparents as Ethnic

Armenians from Turkey. As a biologist his particular social location also gives him an advanced understanding of race in biological terms.

> If I think about it more, there's a lot of overlap between race and ethnicity. But at the same time, a lot of them being kind of get pigeonholed into thinking of race, as you know, the boxes you see on an application. So, um, you know, if Hispanic is a race, there's a lot, it seems like there's a lot of different ethnicities that go into there. Whereas maybe some of the other races, there are fewer and, you know, if white is a race, there's tons of ethnicities there. And sometimes those boxes become more specific. So, they're like European, you know, and Armenian is a good example -I have no idea what that race is; I don't know if it's Anglo, I don't know if it's Middle Eastern. I don't know if it's Mediterranean. I've never known that.
>
> *(Sam, 50, Armenian and German, Michigan, Ancestry)*

People frequently link race to ethnicity. Ideas of what it means to be ethnic were also commonly understood through physical characteristics like skin color, hairstyle, or eye shape. For example, participants like Anna May romanticized about having interesting ethnic ties relating the idea of being tropical to skin color differences. “Yeah, I am just the whitest of the white. I am all Caucasian. Much to my dismay, there's nothing interesting or tropical.” I decided to ask her what it meant to “be white”,

> Mostly it means I sunburn really easily. I really was hoping there'd be something interesting. I mean, I know I'm not exotic, but I was hoping that there would maybe be some African American in there, or, you know, that I would find something a little more, I don't know, I was hoping for a bit more of a surprise. But this wasn't a surprise. I knew there was French, and Irish and English and German.
>
> *(Anna May, 58, French/Irish/German/English, Kentucky, Ancestry)*

Similarly, Amelia discusses skin color and also jokes about sun burning.

> You think well, it’s the color of your skin versus a person of color. I mean, that's the most basic answer I can give. And I’m prone to burn. I do not tan, it’s either red or white. There is no in-between, and that makes me very jealous of my husband, who also identifies as white, but he's Italian so he actually darkens up nice and brown. It's like, “oh, I hate you.
>
> *(Amelia, 53, German, English and Scottish, Michigan, 23andMe)*

The desire to connect to another ethnic or racial identity and disconnect from being “white” is a common phenomenon among some of the participants in my sample. Interviews suggest that

people want to be tied to something outside the comfort of the whiteness they know. For Andrew, being white is boring and baseless with no sense of belonging or sense of place.

> For me, like being a white, Caucasian person, when you see like a report that just says, like, you're from Western Europe, it doesn't really give you any sense of place, I guess. Like, in, in some respects, like, I just kind of feel like a mutt, you know. I'm not really tied to any, like cultural heritage, or any sort of religious heritage or anything like that."

I continued to ask Andrew if he thought that race is tied to identity or if genetics can tell somebody about their identity. He responded, "I think it's more important for people who have obvious ties back to someplace. I think that definitely informs who they are as a person…but, when you're just sort of like a generic white person. I don't feel like you get that…you're just sort of like, baseless."

(Andrew, 37, Western European, Colorado, 23andMe)

"Being white", for some, also elicited responses about the historical marginalization of others. For instance, Leah responds that to be white is to be from a colonizing country:

> I think it's, in my mind, it's very much that kind of Western European Anglo Saxon like, that history of cultures that kind of lead the colonization of others. Like, coming in from the area where like at one point everyone was like under the rule of one of these handful of countries. To me that's like super white.

(Leah, 39, English and Irish, Michigan, 23andMe)

The intersection between genealogical projects, family stories and genetic science present interesting circumstances for white identity formation. Reflections on white identity provided a range of responses; most were confused by the question, forcing individuals to think beyond skin color, while others were remorseful of a settler colonial past, or blunt in connecting their whiteness to brutal colonizers, with hopes that progressive policies will one day restore justice. Overall, many of my participants have not had to think very hard about their white identity, and equate having predominate European backgrounds as lacking visibility; most feel generic, unexciting, or baseless.

Conclusion

Racial and ethnic identity is fluid for people with privilege. Participant experiences suggest white people feel fragile in their ties to American heritage and express a desire to strengthen their ethnic European, or discover Indigenous, ties. These people also expressed feeling baseless, uninteresting, or generic in their whiteness. It was in these conversations that many struggled to explain what "being white" meant. In this way, genetic ancestry testing becomes appealing because it allows for the ability to search for an ethnic past. People test for many personal reasons, but most are related to corroborating family history. Under the imprimatur of science, testing provides validation with the option of being symbolically ethnic. This is especially evident in the way people talk about their ancestry results. If someone "felt" more Irish, they attributed it to their Irish ancestry, and testing only confirmed these feelings. In addition to having the access and resources to test, take up hobbies, or travel, white people can enjoy these options more regularly, and at the same time experience potential identity shifts in the context of their genetic profiles.

Being symbolically ethnic, searching for an indigenous past, or feeling ethnically bland necessitates an understanding of how my respondents perceive ethnicity, race, and being white. My findings consider how white people socially construct race, more specifically, how whites are breaking down their identity to make more meaningful constructions of race or to simply understand their whiteness. In this capacity, I argue the white participants in my study are socially deconstructing their whiteness using the promise of genetic science. An emerging dimension of the racial formation process is occurring by way of the increasingly popular activity of genetic ancestry testing. Testing thus becomes a racial project in the way it encourages the interpretation, representation, and explanation of racial dynamics and classifications, especially for white individuals. Moreover, companies encourage people to buy their service in order to search for

differences in their background causing many to question their own identity in the context of their lived experiences as a white person. Although many of the white participants understood race in terms of skin color or other obvious characteristics, the thought of having a hint of difference in their background conjured feelings of empathy towards "others" and being "more interesting" became possible. Yet, when learning about the lack of indigenous heritage, their brief disappointment faded quickly into acceptance. The unsurprised reactions met by some of my participants spurred emotions of remorse and deeper historical reflection on whiteness and the ways in which skin color has a deleterious impact for darker phenotypic individuals in nearly every social sector of American society.

Discussions of race evoke sociopolitical issues. Therefore, it is important to note many of these conservations were taking place during a time when COVID-19 was being highlighted in the media for disproportionately affecting communities of color and protests against police violence against black Americans were "front page" news. Many of my participants had the privilege of working from home during quarantine and were able to ponder social issues during a time where race was being highlighted in mass media, and entities from universities to large corporations were issuing statements acknowledging structural racism and offering support for racial justice initiatives. This timing could have led to a more sophisticated grasp of race as a social construct. Sociopolitical tensions were palpable by virtue of the changing political structures and how they are reflected on the ground. The popular colorblind belief that we exist in a post-racial society after Obama's hopeful term coupled with Trump's xenophobic administration brings us to an interesting moment of reflection on race relations in America, particularly because of how the coronavirus pandemic has only punctuated racial inequality.

Overall, these interview participants were expecting to confirm family stories that sometimes involve looking for a Native relative or "something exotic" in their background, despite the tests' limited ability to determine Native or indigenous heritage. These participants overwhelmingly identify as white with prominent European ancestry. Additionally, some are adopting new activities as a result of learning about their ancestry like travelling, DNA testing a pet, or learning a new language. More interestingly, genetic ancestry testing prompts conceptual conversations of race, ethnicity, culture and, particularly for whites, provokes the deconstruction of racial identity. Testing allows for privileged white individuals to latch onto, or search for, something "more exciting and desirable." Whereas lighter skinned European whites often feel raceless or generic, in contrast, darker skinned individuals with multiethnic backgrounds are socially perceived as "being of color" or having race (Frankenberg 1993; Mazie et al. 1993; McDermott 2020; Bell 2021). I argue genetic ancestry tests are racial projects encouraging people, more specifically white individuals, to contest and reflect on their racial and ethnic identity, and in deconstructing their whiteness, there is sometimes a small desire to be perceived as raced.

Chapter 5 Genetic Ancestry Testing: Reinforcing Barriers to Identity, Multiraciality, and Belonging

To date, research continues to suggest that genetic testing is an increasingly popular activity for lighter skinned, European descendants (Golberg and Roth 2012, Scully, Brown & King 2016, Roth and Ivemark 2018, Roth and Lyon 2018, Panofsky and Donovan 2019; Horowitz et al. 2019). In parallel, my research sample's demographics are notably comprised of white individuals with prominent European backgrounds taking part in genetic ancestry testing. Conversely, and notwithstanding the social and political implications that genetic testing has for tribal nations (TallBear 2013), or how testing can motivate specific reconciliation projects for root seekers (Nelson 2016), less is understood about how mainstream (*23andMe*, *Ancestry.com*) genetic testing appeals to or is experienced by nonwhite individuals. Yet, testing commercials regularly portray people of color as checking "other" or traveling the world as a result of their genetic ancestry profiles.

Although my sample of nonwhite participants is small (n=5), there is much to be learned from their experiences. For instance, my participant's social milieu varies widely: Barrack is a black individual residing in the Bahamas, Alejandro is an Afro-Latino born and raised in El Salvador, Maria is an Afro-Latina with Cuban heritage, and Salam and Yasmeen are two Arab Americans with strong ethnic ties to Lebanon. Additionally, for this chapter, I include Ramona and Gabriella's experiences as lighter skinned individuals with multiple ethnic backgrounds. Although both women check white on forms, Ramona is half Mexican, while Gabriella's thick accent is indicative of her Italian upbringing. Because of the social perceptions attached to these physical characteristics, their lived experiences align more accurately as multiracial/ethnic

individuals. Therefore, the subsample for this chapter includes Ramona and Gabriella, and thus increases by two (n=7).

Narratives from nonwhite individuals helps to explain how genetic testing affects their lived experience and identity formation, however the history of prejudice and discrimination in America cannot be dismissed from the identity making process as diverse bodies and communities are touched by these issues daily. Based on in-depth interviews with black, indigenous, and individuals of color, I discuss three overarching themes describing their experiences (and challenges) with genetic ancestry testing and identity formation: how does genetic ancestry testing appeal to people of color, participant accounts of being othered in America, and navigating institutions of whiteness as a multiracial/ethnic individual.

Do Genetic Ancestry Tests Appeal to People of Color?

As mentioned in the previous chapter, people set out to test for a variety of reasons most often associated with confirming family history, to build onto a family tree, or to search for an ethnic past. For the diverse individuals in my sample, popular motivators to test were out of fun or curiosity of the science, for health information, or family persuasion. Testing to confirm stories or complete a family tree was of secondary importance to most of these individuals, likely due to increased ancestral certainty (Horowitz et al. 2019). Horowitz et al. (2019) describe 'ancestral certainty' as a type of genealogical knowledge spectrum that they operationalized from participant responses to open ended survey questions about knowledge and certainty of biological and ancestral origins for up to four grandparents. Possessing strong ethnic ties and familiarity with ancestral origins was a much more common theme among my participants of color. For instance, participants like Yasmine are very aware of, and connected to, the history of her ancestors. When I asked about Yasmine's pretesting expectations and her confidence about the ancestry report,

Yasmine's response was simple and clear, "I went into it very confident. I did take it more for the health reasons, actually that's why I chose *23andMe*." Despite taking the test for health reasons, her report included an ancestry profile that undeniably traced their family through regions that her aunts and extended family had been talking about for years. She went on describing how her family went on a tangent explaining their ancestors' migration paths when she told them she was going to test, "They're like, we had ancestors who went through Greece, and they're actually from Iran." Yasmine continues as if she's yelling at her aunt and humorously continues, "I know we're from Iran!" Referring to family stories she'd be told throughout her life, she says, "So and so said that, and so and so said that." I asked, "Did that all come up?" She paused for a moment and said, "I mean. Yeah, it did. And I was like, oh look they were right!" Laughingly she states, "I *should* tell them." Recently, I was informed that she has yet to share this information with her family to avoid the inevitable "I told you so" *(Yasmine, 35, Lebanese, 23andMe, Michigan).*

Salam's case is interesting because her mother encouraged and facilitated the entire genetic testing process. Salam is half Lebanese, and half European. Having maintained connected to her Lebanese roots, it was her mother that upheld observing Lebanese culture.

> My mom, even though she's white, really pushed for my whole childhood for me to get to know my Lebanese culture. She learned how to cook Lebanese food. And she, she was the president of the PTO at my elementary school, and she started a thing called 'International Week' so that kids could learn about other cultures. She like really pushed for that in my childhood. And like, I learned more about what being Lebanese meant from my white mom than I did from my Lebanese dad as a kid.
>
> …He's (dad) a workaholic, and I just never really got to spend a whole lot of time with him growing up. But, for my mom, it was just really important to her that I connected to that side of my family and that culture. She worked really hard to make sure I did, like way harder than my dad.

Salam was uninterested in testing. Unsurprisingly, it was her mother that pushed for genetic ancestry testing after receiving pushback from her father.

> I mean, I saw commercials on TV, but mainly the reason I did it was because my mom pushed me to do it. My mom is obsessed with family history. She spends hours tracing family trees and researching. I get texts at random times to tell me we're related to the Saint of Bier or some random person. And so, she just was harassing me to do it. She wanted everyone to do it, she wanted my dad to do it, and he refused.

Suspicious his lack of interest was connected to ancestral certainty, I asked "Why?" She shrugged and said, "He was just like, there's no point. I'm 100% Lebanese, there's nothing to know." She went on to describe her mother's meticulous planning, "Okay, I want you to do it, Salam. And at least you have half your dad's genetics and then maybe we can find out some stuff about your dad. And I was like, okay, whatever mom." Ultimately, it was Salam's mother that chose 23andMe for both the ancestry and health packages.

> My mom probably has done both of them, but she just bought a 23andMe kit. I know she said something about the one that had health data as well, because she said as a younger person with children that maybe that information could be helpful to me… there was no crazy health insights that came out of it, but I think that was the reason.
>
> *(Salam, 37, Lebanese/European, 23andMe, Ohio)*

Similarly, Geoff, an Afro-Bahamian Chemist, tested for several reasons. A few months after the commercials piqued his interest, Geoff chose *23andMe* for reasons including both his health and ancestry profile. When I asked why he chose that company, he responded, "More of the genetics *and* ancestry…and I just like knowing things. So, I just did it." In addition to the scientific curiosity and genetic health information, he was also attempting to build up a family tree for the first time, "I got really interested in trying to build up a family tree, and it's hard when you're from a tiny country." When I asked about his confidence in the technology and findings, he was surprised by his ability to trace back five generations of ancestors from the tiny Caribbean Island, "One of the things it did was it found people that were my cousins, like people that I *did* see in family trees, so it must have been accurate somewhere." I asked if he had been in touch with those cousins. "I've contacted three people, the three closest people." Geoff went on to explain how this

has surprisingly helped him build his tree, "And so, I was able to go back, I think, five generations of one line. Which I was not expecting." Another surprise that Geoff experienced was the degree of confidence to which his results indicated potential indigenous heritage,

> Okay, I don't want to be like *that* person, where everyone is like, 'Oh, I'm 164th Cherokee, or whatever.' But when the test was like, Oh, you're this much Native American. I was, like, cool. And then they updated it, and it like, stayed there with a better confidence. And I was like, Oh, that's interesting! So, someone somewhere was like, Native American somewhere.
>
> *(Geoff, 30, Afro Bahamian, 23andMe, The Bahamas)*

Although *23andMe* openly claims their testing cannot definitively indicate indigenous or Native heritage, there are some instances, like Geoff's, in which an individual can be connected to a viable starting point to learn more about their Native heritage. It is important to note while Geoff was able to build a tree and connect with family, that is not always an option for everyone. Sometimes less considered, is the inability for folks within the African diaspora to easily engage in archival searches or trace their genealogy (Nelson 2008).

As a result of settler colonial history, some participants also expressed interest in learning the degree to which their heritage included European ancestry. For instance, individuals whose experiences are largely shaped around being discriminated against wanted to be less connected to the settler colonial history of America, and more interested in confirming the differences apart from European origins. Maria and her partner, Alejandro, are good examples of such cases. Maria won a genetic ancestry testing kit at a silent auction back in 2012, well before it became a mainstream "thing to do." Hoping the results would emphasize her African heritage and reveal weaker European ties, when presented with the opportunity to learn about her ancestry through genetic testing, she couldn't help but wonder about the European ancestry in her background. Once the results were in, she was shocked that they indicated a surprisingly large amount of European ancestry, "I was sad when I got my results." "Why?" I asked. Emphatically she responded,

> Because, I was an Angela Davis-kind-of-girl, like I was Black Panther FIGHT the power, I'm the blackest, light skinned woman you've ever met in your life! Because I always wanted to be seen and identified, when I was younger, as black. …And so when I got it (GAT), I was like 85% European?! like, geez.

Some years later, Maria won another testing kit through the same silent auction and gifted it to her partner Alejandro. Because genetic ancestry testing was being newly introduced to consumer homes around the time of Maria's experience, the technology was still developing, and her genetic profile did not look as detailed as Alejandro's newer report. Either way, given his strong Latin roots, he was similarly interested in learning about the percentage of European in his background.

> My girlfriend won a DNA test from an auction, she outbid somebody. So, she gave it to me, and I was like, sure, why not. So, then I got it done and you know got all my results and it was a bit surprising, my results were a bit surprising. I thought I was going to be more European than I am, and I ended up being 59% indigenous. I was like, yeah, I'll take that!
>
> *(Alejandro, 39, Latino, Ohio, Ancestry)*

Even though Alejandro wouldn't have sought out genetic ancestry testing on his own, he was extremely proud of the results and ultimately glad he received it as a gift.

Although Maria was not happy about the percentage of European DNA in her report, she is very connected to the multiracial and ethnic complexities of her family's makeup, as well as the social and political forces of injustice that have cumulatively shaped their individual and familial identity over several generations. Genetic ancestry testing often stimulates questions about individual identity in the context of family history, but these questions are very different depending on the context of whose history is being explored. For instance, questioning Maria about what DNA can tell us about identity prompted her to take me through some of her family history which involved discussions of injustice, skin color and ideas of purity.

> I think it (DNA testing) shatters a lot of family myths, specifically with black Americans because a lot of black Americans have been told that they are part Native American. And, and that is a story that goes like back, back, back. You know, after slavery ended and you're free, and you have this grandmother with this long hair and you're like, oh, maybe I'm part,

> Cherokee or whatever. Well, a lot of that was because of the shame of being a product of rape. And so, instead of saying 'my grandmother was raped', we say 'we have Indian in us.' And so, there's a lot of that in the story of my family. Again, I don't know how true it is, it's a story.

It was through this story Maria took me through her Native lineage and great, great grandmother's experience,

> So, I have an Austrian grandmother, and there's a picture or painting of her very white looking, her hair was extremely long -she could braid and wrap it around her waist. She married a Native American man, dark skinned Native American man. She died on a reservation from a tooth infection because the doctor refused to come to the reservation to treat her. Even though she was white, she was married to a Native man, which makes her a Native. She had children, one of which is my great grandfather, who was a reddish looking, Native black mix kind-of-guy, I don't know. And he married a black woman. And so, all his brothers and siblings are all very fair, but that's all we know. Now, I've tried to document it, but, you know, Native people keep their ancestry separate.

She then continued about ideas of "purity" for both black and white folks.

> The thing is a lot of black Americans know we are all mixed. None of us are *pure* African. But it's the same with the white people in this country. Just because they appear white and they were raised in a white family, they believe they're *pure* or whatever. And it turns out, you know, that they too have mixtures within them, but they don't realize because it doesn't present, maybe, in the color of their skin. And they don't want to hear the answer behind it.

Overall, Maria's experience has sparked a curiosity to seek out additional testing to learn about her specific tribal roots, something that scholars like Nelson (2008, 2016) has explored.

> We can't just go to the archives and look up our information." "I would like the idea of getting a more specific test and getting maybe a region because they're able to regionize (sic) or the some of the African American testing for the actual tribal root that you come from. That is something I would like to do.

An unfortunate reality Maria also mentioned is the lack of access, trust, and affordability of genetic testing, because these projects can become very pricey.

> Black Americans should have free access to DNA testing, however there's a lot of black people that would probably not take them up on that, because black people do not trust the science and medical community, because we have been abused and used. And so, I think people like myself, I'd be more likely to utilize it if it was (free), but I still would question it. And there's a lot of people who just would straight up not do it, because they'd be like

> ‘why are they taking all the black people and giving it to them for free, they’re probably doing something to us.
>
> *(Maria, 50, Afro-Latina, Ohio, Ancestry)*

Overall, most of my multiracial participants would not have tested without the persuasion of family, winning, or receiving a testing kit as a prize or gift. The main motivating factors to test were curiosity, health, or circumstance. Yet, in most cases, testing prompted questions of identity, often in the context of one’s ancestral history, which ultimately brought people together. Reinforcing the stories she was told growing up, Yasmine was able to trace the regions her family had migrated through, Geoff was unexpectedly able to connect with cousins and start tracing a family tree, Salam learned to appreciate her mother’s dedication to celebrating Lebanese culture despite her father’s ancestral certainty, and Maria and Alejandro were able to explore the depth of their European roots and celebrate indigeneity despite histories of adversity.

Being Othered in America: Social and Self Perceptions of Race and Ethnicity

The social power of genetic testing for multiracial/ethnic individuals is palpable. For some, it can be revolutionary for their family’s story, for others it can be a sociopolitical act. It was very common for discussions about genetic ancestry testing to elicit conversations about family history, however the interview tone shifted when talking to individuals of multiple ethnoracial backgrounds. They have opposite experiences in America compared to European descendants with white skin. Compared to their white counterparts, these individuals have a much different perspective; their experiences are largely shaped by being labeled, stigmatized, and relegated to the margins because of the way they look or sound, and the history that comes with it. For instance, Salam experiences issues related to her identity because of a lack of belonging, but this also strengthens her solidarity among other racially ambiguous folks.

> [M]ore than anything, I actually relate to people who are mixed heritage even if they're mixed with other races. Even If they're not Lebanese at all, but they're mixed. I relate more to them because I know what it's like to not feel like you're part of either group.

Looking for her to expand on this feeling of 'racial middleness' I asked, "So, do you feel you aren't Lebanese enough, or white enough?" She responded with what felt like a deeply emotional recollection of a time when her cultural peers harshly judged her knowledge of the Arabic language,

> So, I remember I took a class in college actually on like Middle Eastern something and like everyone in the class was Middle Eastern. There were some great guys. And they were like shaming me because I didn't speak Arabic like the rest of them did. So, like, it's like, yeah, so I had that feeling of I'm not Lebanese enough. And I'm not white enough. I'm just like, I don't fit into either of them completely. And it's just like so ambiguous and just don't know you just feel like an outsider. So, I think that's what I relate to more than anything or like people who are kind of like split between two different identities and groups and don't really know where they fit in.

Through these experiences, she emphasized the common feelings of being othered or excluded and the barriers that she, her father and brother often face because of the way they look.

> In general, when I meet people, one of the first questions they always ask is where are you from?" "…I feel that I'm not part of the white group, like I'm an 'other', like I'm treated as an 'other' or seen as an 'other.' I just feel like I don't totally belong to that group. And just having experience with especially seeing my brother and my dad deal with a lot of stereotypes and prejudice.

More specifically, she discussed the overt gendered and racialized assumptions made about her father and brother just after the devastating events of September 11, 2001.

> Yeah, especially after 911 my brother would get called like 'terrorist' or 'Taliban' and things. He used to deliver pizzas and like, people would like, key his car yell 'terrorist' at him. Things like that. When we go to the airport, like pretty much guaranteed my brother, my dad and I are getting 'randomly' searched. But my mom won't.
>
> *(Salam, 37, Lebanese, Ohio, 23andMe)*

Like, Salam, Ramona experiences feelings of ambiguity regarding her race and ethnicity. As mentioned in the previous chapter, Ramona tested to find her father and confirm his Mexican

heritage. Ramona characterizes herself primarily as white and Mexican, attributing stronger family ties to her Hungarian background. When I asked how she identifies her race and ethnicity, she struggled. She said Hispanic *and* Latino because of how she looks, even though it is not how she feels or what she knows.

> I have always kind of had, like a weird identity crisis with my heritage on my dad's side. Even though I am Mexican, like I never knew any kind of culture from that except from what I learned through television, history and books. Like I don't have any Mexican family or anything like that, even though that's what I am, I don't know anything.

Despite the search to find her father, the testing process only further complicated her lived experience as an individual frequently questioned about her physical characteristics. Similar to Salam's experience, Ramona feels inauthentic because her cultural upbringing does not match the way she looks. "[I]t's almost like I feel like almost like a poser or something if I was all of a sudden like, oh, let me throw on a sombrero and some maracas." I asked, "Do you feel like you would actually be culturally appropriating even though you are Hispanic?"

> Yeah, because I would have nothing to like, back it up…people always come up to me, like, *are you Mexican?* And when I was little, I obviously said, no, but now that I know, when people will be like, *are you Mexican?* I'll say, yeah, and they'll be like, *oh, do you speak Spanish?* And I'll say no, and then, you know, they'll be like, *What? Why don't you speak Spanish?!* And I'll just like say loosely like, well, my dad was Mexican, but he's not in my life or I'll say something very vague. And they'll be like, *what do you mean? Didn't your mom try to teach you Spanish?!* and I'll be like, okay, please leave me alone now…I don't even want to engage in it because, it's like, I don't want to tell everybody my whole story, you know?

As a result of the way people treat her, she has internalized a deeply complicated self-perception of racial and ethnic identity. "It's weird because I almost feel like what they call like a coconut where it's like you're brown on the outside and white on the inside."

(Ramona, 35, Hungarian and Mexican, Michigan, Ancestry)

For people that were born and raised in other countries, their experiences and perceptions of ethnic relations in America were described in similar ways that folks of color born and raised

in America experience. For example, Geoff's experiences of being othered in America as a black man varied considerably from his experiences as a black man in the Caribbean. While earning his education in Michigan, he described wanting to develop a social life with fellow students, instead his racialized experience steered him toward joining black student groups.

> It was kind of weird moving from the Bahamas to Michigan, because there would be like, groups of like, hey, meet up, meet the other Caribbean kids or something like that. And then it would also be me, and the black American students. And so, it was kind of two different groups of black people. I guess it's, like, trying to think about how I would fit in. Like, in Michigan, I love having the connection to my Bahamian heritage. But it's interesting to identify also with traditional black Americans.

I asked, "Can you tell me more about that?" He gleefully (and sarcastically) responded, "Well, I get to be fun and say, 'I'm an immigrant'!" This prompted me to ask, "Did that feel isolating or exclusionary in any way?" He described feeling the need to join groups as a form of solidarity and social support.

> I think so. One of the kinds of things I did when I was in Michigan was I kind of like, found this group of like other black Americans, who I could, like hang out with and enjoy different kinds of things related to our culture that white Americans typically wouldn't get. Um, a friend of mine invited me to a Facebook group. That is a very nerdy group of like people who identify as black but not necessarily just like black Americans of like, I've seen other Bahamians in there. I've seen people from different parts of the Caribbean. We have some members from the UK and people in Europe and Asia. And so, like learning all these different aspects of like, where black people are, it's interesting to still have that connection. Based on our ethnicity.

When describing the online support group, his words were a reminder of the global reality of how isolated black people from all backgrounds feel, and the online space was a place in which these folks could share and validate their experiences with each other. "… if you're walking down the street anywhere outside of sub-Saharan Africa, you're going to be easily identified, right?" Our conversation prompted him to recall recent race and ethnic discussions with friends,

> I actually had a conversation last week, and again today with a friend about how people from certain regions might identify. And so last week, we're talking about Roma people. And so, we're like, well, how do the Roma identify? And then I thought more about it again

> today. And I asked a friend who is ethnically Bosnian. And so, I just asked him today, do you identify as white? And his answer was he doesn't know.
>
> *(Geoff, 30, Bahamian, The Bahamas, 23andMe)*

With a PhD in chemistry, Geoff is happily settled back in the Bahamas and remains in close contact with his online group. Geoff's experiences in the U.S. are not uncommon, as some scholars would argue his experience is indicative of a global racial order that ushers darker skinned folks into a "collective black" group (Bonilla-Silva 2018:184).

The current social and political climate also prompted discussions of prejudice and exclusion for folks that emigrated here, like Gabriella. Gabriella's thick accent bares evidence to her Italian background. Today, Italians are generally accepted into American culture, yet her recent experiences reflect how palpable the politics surrounding immigration have been during the Trump administration. About thirty years ago she married an American and decided to raise children in America. Although Gabriella is a generally optimistic individual, the conversation briefly shifted to the darker side of American values when she shared stories of everyday discrimination based on how she sounds.

> You know, it's every day. Like yesterday, I was at, at the doctor and one of the nurses, because as soon as they hear my accent, you know, it just something snaps and some are very engaging and very curious, they want to know, you know, where I come from. And when they hear Italy, they are like Whoa, so beautiful! I would love to go there. What do you suggest you know; they want some tips and stuff? You know, it depends. It depends. Yeah, but I did have a bad experience in the last couple years. That because maybe the political and social situation we are in right now. And the war on immigrants and immigration.

I asked if she felt comfortable telling me more about some of those experiences and she continued to describe several instances in which people have told her to go back to her country, and other cruel experiences during job interviews. But as we spoke about racial and ethnic inequality in

America, she shared an interesting story about her friend escaping discrimination and discovering freedom.

> I have two friends from Dayton. They both are African American, and one went to Italy with another friend of mine for vacation. Well, he never came back. He just decided he was not coming back. And the thing is, he said, and I don't know, because I'm not a male African American. But according to what he told me the first time he landed in Italy, in Rome, and he walked, you know, on the street, in and out of the stores. That feeling of freedom. He said, I can't explain what it was, but I felt that I was free here. And he still lives there! My friend came back but he stayed there.
>
> *(Gabriella, 62, Italian, 23andMe, Ohio)*

Overall, the lived experiences of my participants that are black, indigenous, or with multiple ethnic backgrounds are significantly shaped by discrimination, exclusion, or intolerance. Even though interviews were about genetic ancestry testing, conversations about feeling like, or being treated as, an outsider were commonplace. These discussions also elicited stories about family that included narratives of discrimination. Like Salam's stories about her brother and father post-911, or the social judgments toward Ramona for not performing her Mexican heritage as expected. Moreover, first generation or immigrant folks raised abroad experience a complex understanding of identity in a cross-cultural context. While Geoff was promptly guided toward groups of people that looked like him, Gabriella still experiences daily discrimination after three decades of being in America. Being othered is a fundamental aspect of formulating identity and self-perceptions. In this way, genetic ancestry testing, for nonwhite folks, can reinforce those experiences that call their identity into question.

Checking White: The Institutional Boundaries of Being White Without the Privilege

Conversations about identity, ethnic background and genetic ancestry also prompted expressions of having to navigate the precarious nature of race categories. Participants that phenotypically present as racially ambiguous or come from different ethnoracial backgrounds

often felt limited by institutional boundaries as institutional and individual understandings of racial identity are often misaligned. In contrast, people that present with phenotypically white skin and a predominant European background have the ability to exercise ethnic and racial fluidity without having to consider the benefits of their whiteness. However, what does this mean for the multiracial individuals that also check white, but do not receive the same benefits as a result? For second generation Lebanese Americans like Salam and Yasmine, with at least one first-generation parent, being white is much more complicated when filling out forms because sometimes those categories change for the individual. For example, despite considering herself "brown", Salam checked "white" on the census because it is her technical legal status.

> So, for the purpose of the census, I checked Caucasian because it specifically said Middle Eastern, but normally, if it doesn't say that I will go with 'other' or not respond. Because I don't really know what to say. …I identify myself as being a brown person basically. And it's just weird because I mean, my mom is obviously white, but I know my dad and my brother, especially do not identify with being white. And I've just kind of always been in the middle. So, it's just confusing for me. I never know what to put on those forms and it honestly gives me anxiety.
>
> *(Salam, 37, Lebanese, Ohio, 23andMe)*

Yasmine also experiences similar constraints on her racial identity. The social dividends that come with checking white affect her differently today than her elder family members in the past, and so the meaning of white has changed for her. During our conversation, Yasmine discussed how growing up there was importance placed on 'being white' by her parents.

> I remember putting Caucasian, I didn't start putting 'other' until like, I don't know, my family would put Caucasian. You know, I you know, once I heard that like Arabs back in the 60s or for some, some decades, they fought to be labeled as Caucasian. So many people labeled themselves as Caucasian. I remember as I got older, I was like, wait a minute. I don't feel comfortable labeling Caucasian because I wasn't seeing Caucasian anymore by the Caucasian party, group base race, whatever. So, then I started to see myself as other, other, other. And, now I see myself as Brown.

I asked, "Does your family still consider themselves white?" She responded, **"**A mix, it kind of depends. I have a very large family and then some people are a certain way, and other people act

a different way. I don't know what they put. I don't know. Caucasian? White? I don't know" *(Yasmine, 35, Lebanese, Michigan, 23andMe).*

For first generation individuals like Alejandro, his lived reality is equally complicated. When I asked him how he identifies his race and ethnicity, he immediately recalled the challenges when filling out paperwork and responded with an interesting story. "Now they have the option of multirace, so that was the most recent thing. But I used to do Hispanic or Latino. But when I was filing my paperwork for INS to become a legal resident and citizen, I once left it blank, and the lady put me down as white." Although he isn't treated as white when walking down the street, his Latin and Hispanic status is recognized as white on his immigration paperwork according to the Office for Immigration and Naturalization Services (INS). Equally as challenging for Latin individuals like Alejandro are the varied interpretations of Hispanic and Latino terms. Despite Latino being the preferred terminology, there is a perpetual conversation that Hispanic and Latin people have about their own identity in the context of the institutional boundaries of the U.S. government. I asked him to talk more about this and how he identifies on the census. "For the most part, I always tried to either do Hispanic or Latino and that's, you know, even though that's not a race. They always ask me where are you from, I say I'm from El Salvador. But sometimes I say I'm Latino."

After a long pause he continued to share concerns about the terminology.

> I don't know how to feel about the word Hispanic. Because wherever you are, you're not Latino or Hispanic. Like for example, you know, Salvador people are Salvadorians. We never use the word Latino or Hispanic. If somebody for example, somebody from Mexico asked me where you from, they don't want to know whether I'm Latino. They want to know what country I'm from.

When I asked, "What makes you Latino?" The conversation took an inevitable turn to discussing the institutional realities of colonization against the backdrop of indigenous pride.

> I think it's a little bit of everything. Um, you know, like everybody I would say are most of everybody, everybody's proud of where they come from. So, for me, yes, you know, the fact that I am Salvadorian, and the fact that I come from a Spanish speaking country. I love being able to say that I am from Central America. You know, being a mixed a mixture of a lot of bloods, if you will. It's also something that I very much like. I've always been, and I think for the most part, I mean, I think there's a big group of us we're like, Spanish blood. Not so much. But unfortunately, you know, that is something that happened in our past and I've learned to accept the fact that I am Spaniard.

"Because of colonization?" I asked.

> Yeah…and, a lot of people, a lot of people embrace that. A lot of people love it, you know? And it's okay. That's how they identify, and you know, they, they love the fact that they are part Spaniard because of what you've just recently said. And I'm like, yeah, it's okay. It's you, that's, that's who you are. But on the other hand, I'm a little more proud, I feel like I'm a little more proud of my indigenous blood than anything else.

He concluded his point with a clever aphorism, "There's always the thing that, you know, if you're light skinned than you're more white than, than Latino" *(Alejandro, 39, Latino, Ohio, Ancestry).*

Conversations about genetic ancestry and family easily shifted into dialogue about the fluidity of race and identity formation. For multiracial folks with lighter skin or multiple ethnic backgrounds, individual perceptions of identity and race are not only influenced through social experiences, but also by institutional boundaries. For white assuming/ adjacent women like Salam and Yasmine, their identities are perpetually in question on forms like the census. Despite checking white in the past or present, identity work for them is unnecessarily compounded when navigating experiences of discrimination or false assumptions of whiteness. For Alejandro, his immigration status, restrictive nature of the census, and complicated history of classifying folks reinforces his indigenous pride which helps him to make sense of the institutional realities of colonialism and white dominance. For each of these participants, their experiences are reflective of how race and racism organize their lives around institutions of whiteness.

Conclusion

Direct to consumer genetic technologies purport to legitimize an individual's ancestry, ethnicity, and race, and people are being encouraged to explore these associations under the promise of genetic science. Research also increasingly suggests that white folks are more likely to engage with this kind of technology. In an effort to understand more about how nonwhite individuals consume and make sense of this technology, chapter five explores how people from diverse backgrounds are talking about their genetic testing experiences. These interview conversations highlight how genetic ancestry testing appeals to people of color, multiethnic/racial participant accounts of prejudice and discrimination, and their stories about navigating institutions of whiteness.

Recent research indicates black and white Americans are both more likely to be interested in genetic testing while first and second-generation individuals have less interest because of ancestral certainty (Horowitz et al. 2019). Although my sample is quite small, these findings were consistent within my data; some of the folks that included black in their identity were just as interested in genetic testing as the white folks. Moreover, the first- and second-generation individuals were far less concerned with ancestry aspects of testing due to ancestral certainty. On its face, genetic testing companies appear to be inclusive by providing services to anyone that consumes their product, however participants like Maria emphasized the black community's concerns about the fear of testing and unreasonable cost for low-income groups like African Americans. In fact, companies like *23andMe* have a difficult time accessing groups of color because of privacy, a culture of distrust, and cost. Yet, scholars have found popular media promotes a relationship between genetic ancestry testing and race. Hochschild and Sen (2015)

show that these companies focus overwhelmingly and disproportionately on black Americans, with roughly two-thirds of testimonial accounts featuring black consumers.

Individuals that live a life being raced have very different stories to share compared to folks described in the previous chapter. However, for both white and nonwhite participants, testing can reanimate a process to deconstructing identity and based on their experiences in contemporary American society, new formations emerge, which I find, create distance from being associated to the category of white. Discussions about genetic testing often elicited conversations about family and social relationships, and the meaning of identity and race in different generational contexts. Yasmine might have once seen the value in checking white but based on her lived experience, her view of whiteness has shifted away from what her family had instilled in her. Some of these narratives can be explained by scholarly work like Maghbouleh's (2017:5) conceptualization of the symbolic racial hinges that open or close the door to whiteness as necessary. Conflicting racial logics of checking white but being treated socially as an 'other' explains how social constructions of race can motivate shifts in individual formations of race. For people like Yasmine or Salam, experiences with "the limits of whiteness" has created a desire to distance from the category of white; today, checking white has diminishing returns and depreciated in meaning for some second-generation Americans.

Chapter 6 Genetic Ancestry Testing: Backdoor to Essentialism?

As mentioned in chapter 3, the survey instrument was developed after learning about the experiences from test-takers. Also aligned with previous research, many of my interview participants learned about genetic ancestry testing through some type of digital outlet related to the Internet. Therefore, I designed the survey using web-based advertisements because internet media is an ideal space for people to learn about genetic testing. Web-based advertisements are designed as vehicles for products to hit on a number of consumer media platforms. For instance, web-based ads can pop up across a web browser, email domain, or social media platform. For the current experiment, I explore associations between genetic ancestry testing and beliefs about racial essentialism. I hypothesize that respondents that have previously taken a test and are presented with the health condition will have higher levels of essentialism.

Measures

For the dependent variables, 15 items were taken from the Genetic Essentialism Scale for Race (GESR). However, in the racially diverse sample, the factor analysis results diverged markedly from those reported by Roth et al. (2020). Namely, using the 9-item three factor solution from Roth et al. (2020), the construct of polygenism is not associated with core determinism or category determinism. That is, people can believe in the idea of polygenism without also believing that these distinct origins have a meaningful impact today. Moreover, the factor analysis did not result in the desired simple structure. Below I use a two-factor solution with *racial determinism* and *polygenism* as a better fit for the 9 items used in Roth et al (2020). In this model, the category and core determinism measures are combined into one "determinism" scale and polygenism is a second construct, nearly orthogonal to determinism.

Racial Determinism reflects agreement to the following items, *Certain races may be better athletes than others because of genetics, Certain races may be smarter than others because of genetics, There used to be "pure" races in the past, The human population is divided into biological races, No matter what a person looks like, genetics can tell what race they really are, and DNA technology will help us develop better racial classifications based on genetics.* Polygenism reflects disagreement to the following items, *Races are groups that societies invent, Everyone's ancestors originally came from Africa, People of all races share most of the same genes.* As noted, the two aspects of essentialism are essentially orthogonal with a correlation of .083. This pattern suggests that an individual's belief in the determiNative nature of genetics is essentially independent of their belief that humans evolved from distinct genetic groups. I attribute the difference between my results and Roth et. al (2020) to differences in recruitment pools. Namely, Roth et al. only included white respondents who had previously taken a DTC test, whereas this study does not restrict participation based on these factors.

In addition to the measures of essentialism described above, we also use a third measure, developed by the researcher, and modified from the Northwestern/*23andMe* survey, which I term *DNA Essentialism*. This variable represents agreement to the following items, *DNA testing is a major factor in determining racial identity, DNA testing is a major factor in the prevention of health risks, DNA is a major factor in determining the health differences between racial groups, DNA is a major factor in determining the behavioral differences between racial groups, DNA is a major factor in determining the cultural differences between racial groups,* and *DNA is a major factor in determining the athletic differences between racial groups.* The variable shares a moderate association with *Racial Determinism* (r=.728) and no association with *polygenism* (-.030).

Independent, Control and Moderator Variables

This research was based on a 2X2 experimental design. Each respondent was randomly presented one of four vignettes designed to look like a web-based advertisement for genetic testing for health or ancestry (See Figures 1 through 4). The experimental variables were messaging and race. For messaging, I presented respondents with ads highlighting the ancestry or health-based aspects of genetic testing. For race, the focal person in the advertisement was either a black or white women. Thus, there are two indicator variables, *white condition,* and *health condition* that represent the respondent's experimental condition.

I also gauge respondents' *experience with GAT* using a dummy variable that indexes whether they have taken a genetic test in the past (1=Yes). Genetic knowledge is measured by the response to the following factual statement regarding DNA, *Humans from all racial groups share 99% of their genes*, this variable is measured on a Likert scale from 1 "Strongly disagree" to 5 "Strongly agree." Racial prejudice uses items from the Symbolic Racism Scale (Henry and Sears, 2002). These items are designed to measure the cultural prejudice characteristic of modern forms of racism that attribute racial differences in social outcomes to cultural deficits (e.g., lack of hard work) of minority groups rather than innate differences in ability. Table 2 presents bivariate correlations among all focal variables used in this chapter.

All models utilize the following control measures. White Respondent (1=Yes) and Black Respondent compare respondents with these characteristics to all others. Male (1=Yes) compares male and non-male respondents. Democrat (1=Yes) and Republican (1=Yes), compare respondents who self-reported with these affiliations to all others. College Grad (1=Yes) compares individuals with a college degree to all others, and finally No Religion (1=Yes) compared

individuals who identified as atheist, agnostic, or none, to individuals with other religious affiliations. Table 3 presents descriptive statistics for all variables used in this chapter.

Figure 1.

Figure 2.

Figure 3.

Figure 4.

Table 2. Correlations among Focal Variables

	1	2	3	4	5	6
1. Determinism	1					
2. DNA essentialism	.728	1				
3. Polygenism	.083	*-.030*	1			
4. Experience with GAT (1=Yes)	.228	.235	-.204	1		
5. Genetic Knowledge	-.101	-.084	-.502	.088	1	
6. Symbolic Racism	.570	.498	.095	.270	-.068	1

N=878; Critical Value of r (p=.05) is .063

Table 3. Descriptive Statistics

Variable	Mean	SD
Dependent Variables		
Determinism	3.25	.896
DNA Essentialism	3.22	.893
Polygenism	2.50	.897
Independent Variables		
Health Condition (1=Yes)	.510	
White Condition (1=Yes)	.503	
Experience with GAT (1=Yes)	.339	
Genetic Knowledge	3.90	1.054
Symbolic Racism	-.030	.792
White Respondent (1=Yes)	.772	
Black Respondent (1=Yes)	.141	
Male Respondent (1=Yes)	.511	
Democrat (1=Yes)	.505	
Republican (1=Yes)	.245	
College Grad (1=Yes)	.699	
No Religion (1=Yes)	.296	
Age	3.06	1.287

N=878

Results

Table 4 presents the models for racial determinism. Model 1 includes only the experimental variables. This model shows, in contrast to my hypothesis, that neither the messaging of the advertisement or the race of the focal person affects this aspect of racial essentialism. Model 2 adds experience with GAT and genetic knowledge to the models, these variables both have a significant association with racial determinism. For experience with GAT, as expected, this variable has a positive impact (b=.442; p<.001) on racial determinism with those who have taken a GAT test showing higher racial determinism. For genetic knowledge, data suggests those with

more genetic knowledge show lower levels of racial determinism (b=-.104; p<.001). Model 3 adds the symbolic racism measure; higher levels of symbolic racism are associated with higher levels of racial determinism (b=.661; p<.001). Model 4 adds the control variables. Model 4 shows that democrats (b=.168; p<.005) have higher levels of racial determinism while those with no religion (b= -.251; p<.001) and those in older age categories have lower levels of racial determinism (b= -.046; p<.016). After the addition of these variables, experience with GAT is no longer a significant predictor of racial determinism, a pattern suggesting that differences in determinism based on testing status can explained by demographic differences between test takers and non-test takers.

Table 4. Main Effects Models for Determinism

	Model 1		Model 2		Model 3		Model 4	
	b	P	b	P	B	P	b	p
Independent Variables								
Health Condition (1=Yes)	-.106	.080	.071	.225	-.049	.324	-.032	.516
White Condition (1=Yes)	.069	.252	.056	.340	.032	.517	.029	.552
Experience with GAT (1=Yes)			**.442**	**<.001**	**.161**	**.003**	.093	.094
Genetic Knowledge			**-.104**	**<.001**	**-.061**	**.010**	**-.055**	**.020**
Symbolic Racism					**.661**	**<.001**	**.591**	**<.001**
White Respondent (1=Yes)							-008	.318
Black Respondent (1=Yes)							.100	.356
Male Respondent (1=Yes)							.029	.557
Democrat (1=Yes)							**.168**	**.005**
Republican (1=Yes)							.004	.951
College Grad (1=Yes)							.039	.480
No Religion (1=Yes)							**-.251**	**<.001**
Age							**-.046**	**.016**
R^2	.002		.065		.333		.366	

Beyond the main effects models presented in Table 4, we also explored several interaction effects among the focal predictors which are presented in Table 5. Model 1 in Table 5 presents the interaction between GAT experience and symbolic racism. This model shows a positive interaction effect (b= .161; p=.018) which suggests that the positive effect of symbolic racism is stronger among those who have taken a genetic ancestry test. This pattern is displayed graphically in Figure 5, which shows not only the stronger association between symbolic racism and racial

determinism among test-takers, but also that the positive effect of GAT is primarily observed among those with higher levels of symbolic racism. Model 2 adds the multiplicative term of GAT experience and genetic knowledge; the interaction does not approach conventional levels of statistical significance. Model 3 adds the interaction effect of knowledge X symbolic racism. The positive interaction effect (b=.166; p<.001) suggests that the negative main effect of knowledge is attenuated by levels of symbolic racism. This pattern is shown graphically in Figure 6. Figure 6 shows that among respondents with lower levels of symbolic racism, genetic knowledge leads to less racial determinism, however, among those with higher level of symbolic racism, genetic knowledge has no impact on racial determinism.

Table 5. Interaction Effects Models for Determinism

	Model 1		Model 2		Model 3	
	b	P	b	P	b	P
Independent Variables						
Experience with GAT (1=Yes)	.082	.136	-.070	.729	.085	.1153
Genetic Knowledge	**-.059**	**.014**	**-.069**	**.017**	**-.058**	**.013**
Symbolic Racism	**.533**	**.000**	**.589**	**.000**	**-.070**	**.546**
Experience*Racism	**.161**	**.018**				
Experience*Knowledge			.0414	.405		
Knowledge*Racism					**.166**	**.000**
R^2	.380		.376		.400	

N= 878; Models include all controls listed above

Figure 5. Determinism by GAT Experience and Symbolic Racism

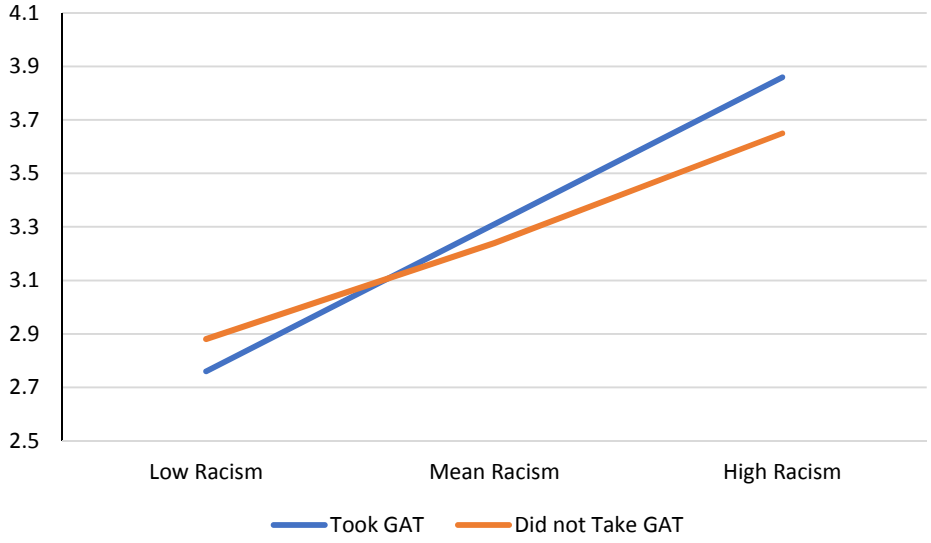


Figure 6. Determinism by Genetic Knowledge and Symbolic Racism

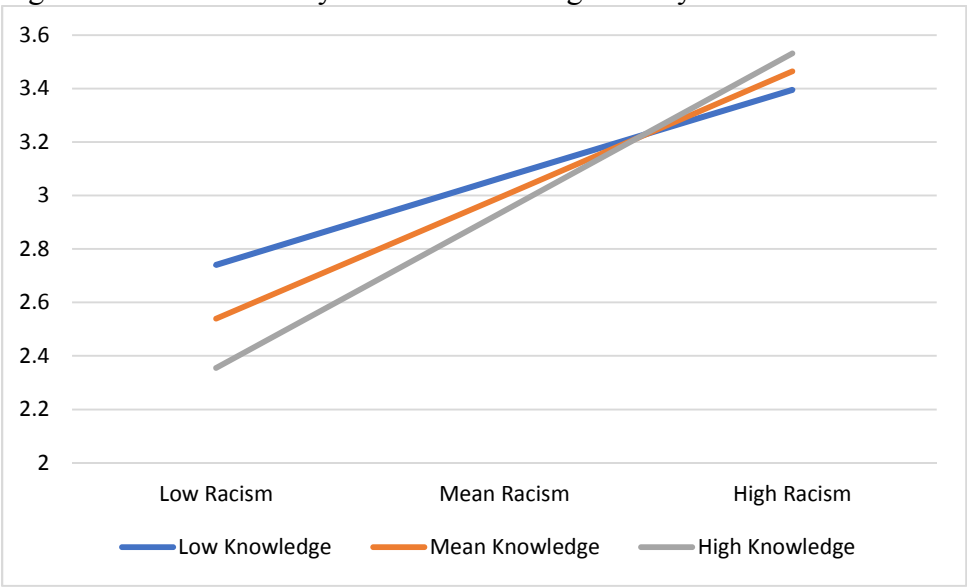


Table 6 presents the data for our measure of DNA essentialism. As with determinism, Model 1 shows that the experimental variables had no impact on this aspect of essentialist thinking. Model 2 adds GAT experience and genetic knowledge to the model. Similar to the models for racial essentialism, Model 2 shows that experience with GAT has a positive effect on DNA essentialism (b=.425; p<.001), while genetic knowledge has a negative effect on essentialism (b=-.084; p=.001). Model 3 adds symbolic racism and shows, similar to the models for racial essentialism, that those with higher levels of symbolic racism also have higher levels of DNA essentialism (b=.489; p<.001). Model 3 further shows that the inclusion of symbolic racism reduces the association between GAT experience and DNA essentialism by over half, again pointing to the complex relationships among essentialism, GAT experience, and symbolic racism. Model 4 adds the control variables and shows that black respondents have higher levels of DNA essentialism (b=.301, p=004) than other race respondents and democrats have higher levels of DNA essentialism (b=.242; p<.001) that those unaffiliated with a political party. Finally, those with no religion (b=-.239; p<.001) and older respondents (b= -.097; p<.001) displayed less essentialism than the religiously affiliated and younger respondents.

Table 6. Main Effects Models for DNA Essentialism

	Model 1		Model 2		Model 3		Model 4	
	b	P	b	P	b	P	b	p
Independent Variables								
Health Condition (1=Yes)	-.106	.062	-.072	.191	-.054	.270	.034	.461
White Condition (1=Yes)	.007	.896	-.006	.915	-.025	.610	-.018	.704
Experience with GAT (1=Yes)			**.425**	**<.001**	**.200**	**.001**	.103	.051
Genetic Knowledge			**-.084**	**.001**	**-.050**	**.033**	**-.044**	**.050**
Symbolic Racism					**.489**	**<.001**	**.487**	**<.001**
White Respondent (1=Yes)							.029	.731
Black Respondent (1=Yes)							**.301**	**.004**
Male Respondent (1=Yes)							.047	.320
Democrat (1=Yes)							**.242**	**<.001**
Republican (1=Yes)							-.021	.759
College Grad (1=Yes)							.002	.976
No Religion (1=Yes)							**-.239**	**<.001**
Age							**-.097**	**<.001**
R^2	.002		.064		.260		.339	

Table 7 displays results from the multiplicative models. In Model 1, the interaction effect between racism and GAT experience is again positive (b=.196, p<=.003), indicating that the positive effect of GAT experience is primarily observed among those with higher levels of symbolic racism. This pattern is illustrated in Figure 7, which shows that among those low on symbolic racism, there is essentially no difference between GAT test takers and non-test takers, whereas among those with higher levels of symbolic racism, GAT test takers display more DNA essentialism than respondents who have not taken a GAT. Model 2 adds an interaction effect between GAT experience and genetic knowledge. The positive interaction effect is displayed graphically in Figure 8, which shows that the negative effect of genetic knowledge on DNA essentialism is only apparent for respondents without GAT experience- among those who have taken a GAT there is essentially no relationship between genetic knowledge and DNA essentialism. Finally, Model 3 includes the interaction effect of symbolic racism and genetic knowledge. This model shows that the negative effect of genetic knowledge is primary observed among those with low levels of symbolic racism.

Table 7. Interaction Effects Models of DNA Essentialism

	Model 1		Model 2		Model 3	
	b	P	b	P	b	P
Independent Variables						
Experience with GAT (1=Yes)	.090	.086	-.282	.1454	.097	.063
Genetic Knowledge	**-.049**	**.032**	**-.076**	**.005**	**-.047**	**.036**
Symbolic Racism	**.416**	**.000**	**.484**	**.000**	**-.073**	**.512**
ExperienceXRacism	**.196**	**.003**				
ExperienceXKnowledge			**.098**	**.039**		
KnowledgeXRacism					**.141**	**.000**
R^2	.356		.352		.369	

Figure 7. DNA Essentialism by GAT Experience and Symbolic Racism

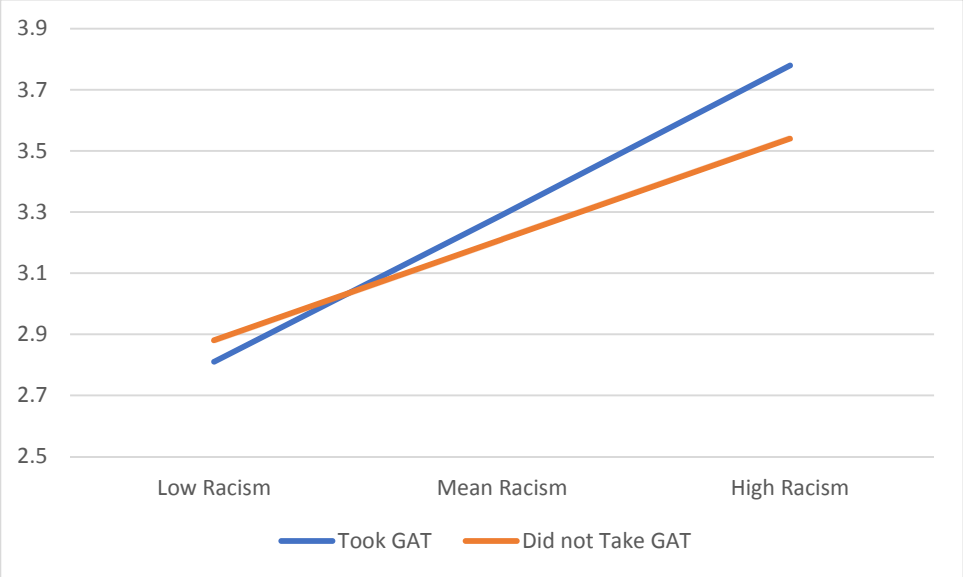


Figure 8. DNA Essentialism by GAT Experience and Genetic Knowledge

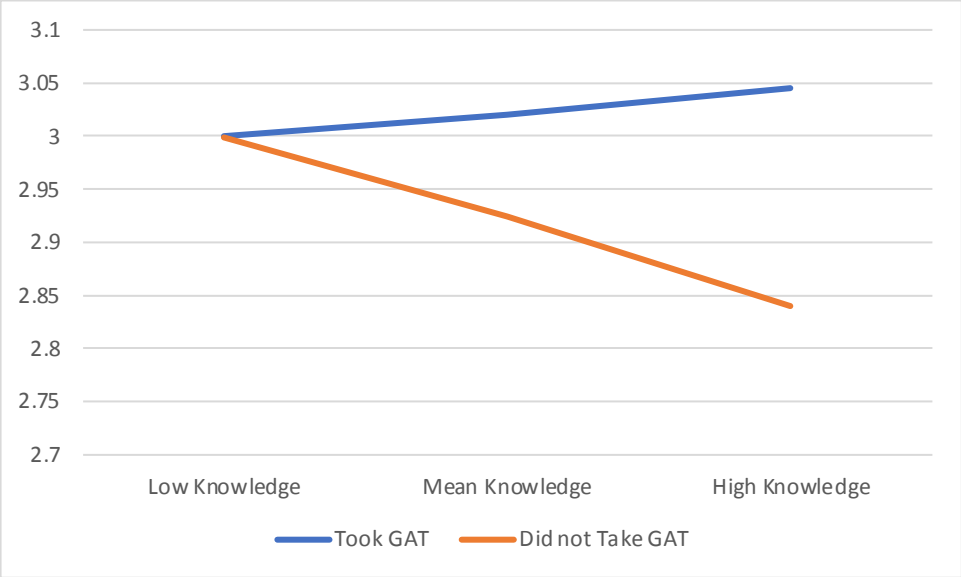


Table 8 presents models of polygenism. Model 1 shows that respondents who received the ad that highlighted the health implications of GAT had higher levels of polygenism that those who received the ad focused on ancestry (b=.136, p<.025, offering some support to my hypothesis that health related framing would increase essentialism. Model 2 adds GAT experience and genetic knowledge. In contrast to the models of determinism and DNA essentialism, respondents with GAT experience had lower levels of polygenism that than non-test takers (-.295, p<.001). However, for genetic knowledge, the same pattern occurs as with the other outcome variables; higher genetic knowledge leads to lower endorsement of polygenism (b=-.415, p<.001). Model 3 adds the symbolic racism measure. Consistent with the models for determinism and DNA essentialism, again, I find a positive association between symbolic racism and polygenism (.132; p<.001). In contrast the analyses above, the addition of symbolic racism did not attenuate the effect of GAT testing, instead, the effect of testing is more negative after adding symbolic racism. Model 4 adds all of the control variables. This model shows that black respondents display less polygenism (-.246; p=.026) as do democrats (-.212; p<.001), college educated (b=.156; p<.005)

and non-religiously affiliated respondents (-.148; p<.=.013), whereas age was positively associated with polygenism (b=.071, P=.007). Table 9 presents the interaction effects models. Only the interaction of GAT experience and symbolic racism approached conventional standards for statistical significance. As shown in Figure 9, this interaction effect indicates that the effect of symbolic racism on polygenism is primarily apparent among those without GAT testing experience.

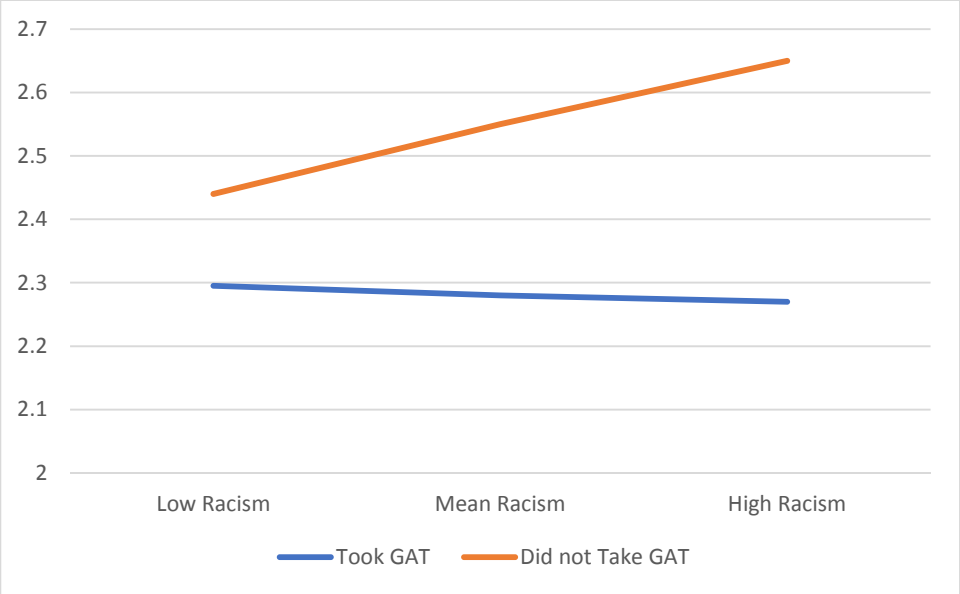
Table 8. Main Effects Models for Polygenism

	Model 1		Model 2		Model 3		Model 4	
	b	P	b	P	b	P	b	p
Independent Variables								
Health Condition (1=Yes)	**.136**	**.025**	**.101**	**.052**	**.106**	**.040**	**.106**	**.032**
White Condition (1=Yes)	-.045	.456	-.024	.643	-.029	.571	-.052	.293
Experience with GAT (1=Yes)			**-.295**	**<.001**	**-.356**	**<.001**	-.280	<.001
Genetic Knowledge			**-.415**	**<.001**	**-.405**	**<.001**	**-.377**	**<.001**
Symbolic Racism					**.132**	**<.001**	**.080**	**.028**
White Respondent (1=Yes)							.088	.329
Black Respondent (1=Yes)							**-.246**	**.026**
Male Respondent (1=Yes)							-.067	.184
Democrat (1=Yes)							**-.212**	**<.001**
Republican (1=Yes)							.034	.647
College Grad (1=Yes)							**-.156**	**.005**
No Religion (1=Yes)							**-.148**	**.013**
Age							**.071**	**.007**
R^2	.004		.278		.289		.347	

Table 9. Interaction Effects Models for Polygenism

	Model 1		Model 2		Model 3	
	b	P	b	P	b	P
Independent Variables						
Experience with GAT (1=Yes)	**-.270**	**.000**	-.129	.537	**-.281**	**.000**
Genetic Knowledge	**-.374**	**.000**	**-.365**	**.000**	**-.378**	**.000**
Symbolic Racism	**.135**	**.002**	**.081**	**.026**	.011	.926
ExperienceXRacism	**-.154**	**.026**				
ExperienceXKnowledge			-.038	.448		
KnowledgeXRacism					.017	.551
R^2	.360		.357		.357	

Figure 9. Polygenism by GAT Experience and Symbolic Racism



Conclusion

In summary, these findings support some my hypothesis in so far that experience with GAT has a clear association on some aspect of an individual's essentialist beliefs. Based on these data, people with higher levels of racial prejudice that have taken a test, are associated with increased deterministic and essentialist types of beliefs compared to non-test takers. Moreover, lower levels of prejudice were associated with having genetic knowledge and lower levels of essentialism. Meaning, people that believe *Humans from all racial groups share 99% of their genes*, are less likely to harbor feelings of racial prejudice and more likely to hold lower levels of DNA essentialism, racial determinism, or polygenism. However, these patterns were conditioned by testing experience and racial prejudice in complex ways. Regarding the experimental variables themselves, there was no effect until testing experience and genetic knowledge were added. However, when examining the polygenism measures, these results differed the previous models

with determinism and essentialism variables. For instance, respondents who received the health ad are associated with higher levels of polygenism compared to those who received the ancestry ad. This finding lends support to my part of my hypotheses; that genetic testing ads for health implications influences the idea that there are biological determinants for different racial groups. More specifically, these patterns provide some evidence that framing GAT using health related messaging leads individuals to believe in distinct biological races, while not necessarily leading to an increase in the belief that these racial differences have implications for individual's abilities or personality traits.

Overall, data suggests there is an association between genetic testing and aspects of racial essentialism. Critically, this could lead to a process in which genetic testing exacerbates inequality and increases racial essentialism among the general public. For individuals with the need to "prove" certain racial aspects of identity or institutions with third party access to personal data, genetic testing, and the normalization of racial essentialism could be the impetus for how information is used or disseminated, supports the exact circumstances that Duster (2003) theorized as a "backdoor to essentialism" within an era of genomics.

Chapter 7 Conclusion

Within the last decade, the process of searching for genetic explanations for genetic differences or similarities has prompted an entire industry persuading people to (re)analyze race, ethnicity, and ancestry using companies like *23andMe* and *Ancestry*. Genetic ancestry testing is spurring a geneticization of identity as companies are marketing a technology that encourages individuals to experience changes in their racial and ethnic identity based on genetic evidence. Scholarship increasingly suggests that white Americans are both more likely to take genetic tests and to change their identity (Roth and Lyon 2018; Roth and Ivemark 2018), while others have found tests are being used to meet a certain percentage of whiteness or prove white purity among white supremacy groups (Panofsky and Donovan 2019). Using a mixed methods design, through 30 in-depth interviews and a survey experiment with 878 individuals, I explore identity formation and essentialist attitudes of genetic ancestry test takers.

Genetic Ancestry Testing and Identity Formation: Feeling Raceless

Thirty in-depth interviews generated two subgroups of participants: 25 self-identified as white individuals and 5 as nonwhite in some capacity. Chapter four explores the white participants and their experiences with genetic testing. Similarly, but different from extant research, my participants were searching for something ethnic in their past or for another narrative to their whiteness, however they were less likely to embrace a new ethnic identity. Instead, they were more likely to reflect on their whiteness. These white folks are experiencing a "loss in culture." For these individuals, being "European" or "white" for these people is too generic. The most startling pattern among this group of interviews is that 44% of the white folks discussed having an indigenous relative in their family, whereas 20% of these people tested specifically to confirm an indigenous ancestral lineage. White Americans thinking they have indigenous ancestors has been deemed a

cliche (Golbeck and Roth 2012; TallBear 2013:106; Roth and Lyon 2018), however, to the author's knowledge, this is the second study with data explicating this type of claim in relation to genetic ancestry testing. This result indicates that for some individuals, the lure of an indigenous past is enough of a motivation for them to seek evidence of this past in their own genetic material.

My results show that genetic ancestry testing allows privileged folks to disassociate from a white identity. Testing becomes a space in which people, particularly white folks, can imagine, try on, or formulate new self-perceptions of race and ethnicity. Although my participants were less likely to take on new identities, leading up to, and throughout the testing process they were attracted to the idea of having something "ethnic" in their background. Many of them were disappointed or surprised with results leading them to be unsatisfied about their whiteness, and feeling baseless with their European lineage. More interestingly, many participants expressed guilt, or understood their privilege, and, in some ways, wanted to create a distance from being connected to a brutal colonial past. It is noteworthy to mention how the timing of this project played an important role for the study. Interview conversations occurred during a controversial election year, the Covid19 pandemic, and Black Lives Matter protests surrounding George Floyd's murder. These political, and social events likely provoked some feelings of guilt about their privilege, or at the very least made them keenly aware of their social position in society.

Genetic Ancestry Testing and Identity Formation: Being Raced

Chapter 5 explored the test taking experiences of participants that identify as nonwhite. Major differences between the two groups of interview participants suggest nonwhite individuals are less interested in genetic testing because of access, trust, and ancestral certainty. Some of these participants felt the cost of testing is far too high, especially for underprivileged communities. Similarly expressed were concerns of trust and privacy for folks of color because of unethical

practices of the past. Moreover, having ancestral certainty made testing for ancestry unappealing to nonwhite folks, and instead these participants tested for health reasons -none of which revealed any new health insights. Ancestral certainty refers to having knowledge about the ancestries of biological parents and grandparents (Horowitz et al. 2019). In this study, nonwhite folks that expressed ancestral certainty were either foreign-born or are second-generation Americans. As a noteworthy data point, it is possible for people that engage in genealogy projects to also hold ancestral certainty, as such this study is careful not to generalize these experiences exclusively toward nonwhite folks.

Compared to their white counterparts, nonwhite participants have a much different perspective of genetic ancestry testing, because their experiences are largely structured by living a life of being othered. Conversations with folks that live a life of being raced compared to folks that feel raceless were filled with stories of discrimination, injustice, and difficulty navigating a world that advantages white folks and disadvantages everyone else. In some circumstances, nonwhite folks appear as racially ambiguous. These people are officially considered white without reaping the social benefits of the category. Contradicting racial logics appear to motivate shifts in their racial identity to celebrate indigeneity or otherwise nonwhite Native ties. It was clear during these interviews that discussing genetic ancestry testing served as a reminder of their experiences of discrimination in American society. However, for both white and nonwhite interview participants, genetic ancestry testing can ignite a process of deconstructing identity and based on their experiences, new formations can emerge, which I find are used to create intentional distance from being associated to the category of white.

Genetic Ancestry Testing: Backdoor to Essentialism?

Chapter 6 described the survey experiment. With a sample of N=878, this experiment complements the in-depth interviews; the subjective experiences of test takers were integral to the survey's design. Moreover, providing a snapshot of the general public's attitudes, the survey examined the messaging of genetic testing, prejudice regarding the race of the individuals in the ads, prejudice regarding race more broadly, and scales associated with racial essentialist beliefs. The results from the quantitative study revealed complex relationships among experience with GAT, symbolic racism, genetic knowledge, and racial essentialism. Overall, these findings did not strongly support the hypothesis that the framing of DTC advertisements would have an impact on beliefs in racial essentialism. There were no effects of framing on either racial determinism or DNA essentialism; however, I did find that individuals presented with the health framing showed higher levels of polygenism. This pattern provides some evidence that framing of DTC advertisements as health based could present a backdoor to essentialism. Future studies should explore using strong manipulations in lab-based studies to determine the validity of the experimental design used here. It is possible that the small ad presented to a web-based sample was simply too weak to detect any effect of framing. In contrast, results supported my hypothesis that experience with GAT shapes ideas of racial essentialism. However, my data suggests that this pattern maybe more complex than outlined in previous research. Specifically, I show that GAT experience leads to higher levels of determinism and DNA essentialism, but lower levels of polygenism. Data also suggest that individuals with higher levels of racial prejudice had higher levels of determinism and DNA essentialism, associations that were even stronger among those with experience with GAT.

Racial prejudice also played a role in conditioning the association between genetic knowledge and essentialism. While genetic knowledge generally had a negative association with determinism and DNA essentialism, results also suggest that this negative association was most pronounced among those with low levels of symbolic racism, indicating that individuals with prejudiced beliefs are less influenced by their knowledge that all humans share 99% of their genetic material. Another interesting interaction effect showed that for DNA essentialism, there was essentially no association between genetic knowledge and DNA essentialism. In sum, the quantitative results show that the association between GAT experience and essentialism is complex and multi-faceted; the nature of the association is conditional on an individual's racial prejudice and genetic knowledge. It is likely based on past research (Panosfky and Donovan 2019) that some individuals are motivated by racist ideologies to take GAT, which may explain why among these individuals, there was a strong relationship between testing and beliefs in racial essentialism.

Genetic Ancestry Testing: The Social Deconstruction of Whiteness

The relatively emerging research on GAT test takers suggests that while individuals do not necessarily take the GAT results as definitely, the results are weighed among other considerations in future understandings of their own race and ethnicity. Importantly, this process as well as the motivation for testing varies by race. Whereas black Americans were more likely to use GAT as part of broader genealogical research, whites were more likely to take the test recreationally or to discover their true racial or ethnic identities. Even when whites do not change their identification per se, they often relate that they are "proud" of their newly found racial or ethnic lineage (Roth, Côté, & Eastmond 2022). The following presents a theoretical framework for understanding GAT and the increasing geneticization of racial identity, particularly among whites.

Drawing on Omi and Winant's (1994) pivotal work on the social construction of race, I argue GATs can be understood as a racial project in which the institutions of science and media are encouraging whites to geneticize their racial identity, that is, based on genetic lineage rather than their social location within the US social structure. Critically, this process is undergirded by racial essentialism or the idea that race is something that exists within the body rather than something that exists within social relationships. I argue that this racial project could have significant implications for the nature of racial identity and racial inequality in the US.

Compared with other racial classifications, white has traditionally been seen as the absence of race or ethnicity. That is, white has often been conceptualized as the "default" or "standard" American identity. With the proliferation of GAT, this conception of whiteness as the absence of race in the popular imagination may only increase; that is, when people learn of a specific ancestry, they may begin to identify with their country of origin and move away from describing their identity as white. Thus, I argue that Whites are likely more susceptible to the allure of geneticization of identity due to the nebulous, generic nature of white racial identification. That is, whereas a black American may use GAT to determine which part of Africa they descended from, nearly any result is likely to be consistent with the racial identification of African American. In contrast, whites GAT results could give them an alternative to a white identification; namely, white individuals can claim they are actually Swiss, Dutch, or German rather than "just white."

This process could be accelerated by the unrelated phenomenon of increasing recognition of white privilege in the US. In the wake of the devasting impact of COVID19 on minority communities, the George Floyd murder and subsequent Black Lives Matter protests, and the incendiary racial rhetoric of the Trump era, the reality of racial inequality in the US was highlighted and discussed in unprecedented ways. Large corporations, sports leagues and other

institutions acknowledged both historical and on-going racism and discrimination and the effects of racism on producing contemporary disparities, particularly those related to health and criminal justice and Black Lives Matter signs dotted lawns across suburban America (Cole, 2020; Hughey, 2021; Johnson 2021; Williams, Mezey, & Singh, 2021). As public opinion shifted, at least temporarily to a greater acknowledgement of structural racism in American life, it follows that for many white individuals, they were forced to consider a how a history of racism led to unearned advantages based solely on skin color (Thomas and Horowitz 2020; Horowitz 2021). In this broader context, the racial project of deconstructing white identity based on GAT results may become even more appealing and provide a buffer against "white guilt." That is, armed with genetic evidence of any trace of non-white heritage, many whites may distance themselves from their own whiteness by claiming a different heritage than "just white." I call this process the 'social deconstruction of whiteness.' The social deconstruction describes how white individuals experience their racial and ethnic identity in an era where the socially constructed category of "white" is losing salience as a meaningful identity and the history of white supremacy in the US is becoming more widely recognized. In contrast to racial projects of the past that created and disenfranchised non-white minority groups, the social deconstruction of whiteness allows white people to continue to benefit from social privileges of whiteness while simultaneously distancing themselves from white racial category. More specifically, the 'social deconstruction of whiteness' allows white individuals to use the imprimatur of GAT to deconstruct their racial identity while leaving the structures of white supremacy firmly in place.

This type of logic, taken to its extremes could lead to a significant erosion of the white category of racial identification all together, which could have significant implications for understanding racial inequality in coming years. For example, Bonilla-Silva (2018) famously

coined the term *racism without racisms* to describe a situation in which racism persists despite very few whites openly embracing prejudicial racial attitudes. The social deconstruction could lead to a situation of *white supremacy without whites*, or a situation in which white individuals continue to reap social rewards from their position at the apex of a racialized social system, but with fewer and fewer individuals actually identifying as white.

Some evidence indicates that this phenomenon is already occurring. According to the 2020 Census, the number of Americans identifying as white has decreased over just the past decade. Whereas in 2010, over 72% of all Americans identified as "white only," by 2020 this number had fallen to just 61%. Moreover, the number of Americans who identified as white in addition to another race increased over 300% from 6.8 million in 2010, to over 29 million in 2020. Stated another way, whereas 97% of white Americans identified as white only in 2010, 87% of white Americans identified as "white only" in 2020 (US Census Bureau, 2022). Clearly, these data indicate that white Americans are increasingly switching their racial identifications to include additional racial identities. While there could be numerous explanations for this trend, I argue that GAT is playing a role in the erosion of white racial identification.

As noted by Byrd and Hughey (2015), racial essentialism is one of the most enduring beliefs regarding race and ethnicity in the US. Genetic revolution and the proliferation of genetic testing have only served to reinforce the belief that race is something that exists within the body rather than something that is created through social organization. However, rather than leading to retrenchment of the traditional racial categories, the new racial project of genetic testing may lead to an era in which white Americans maintain their social dominance even as whites begin to use testing results to distance themselves from the white racial identity.

Directions for future research

At the nexus of the social, medical, and natural sciences, this dissertation project adds to a growing body of research within sociology. Opening additional pathways for future research, unsurprisingly the conclusions from my study generate additional questions. Although my study offers a theoretical explanation for white American test takers, there is still much more to be learned about how genetic tests appeal to nonwhite folks. Interviewing more people that identify with multiple ethnic or racial backgrounds would help to reinforce or challenge how similar or different nonwhite folks feel about or experience genetic testing.

Further, due to the privatization of the genetic testing market, I would like to explore issues of privacy and surveillance. An area of growing concern, compared to nonwhite participants, white participants were particularly uninterested in the surveillance aspects of genetic testing. With an increase in third party access to personal data, nonwhite folks expressed much more concern due to the historically unethical practices against folks of color in America, how genetic data is used in the criminal justice system (Brubaker 2018), and the disproportionate incarceration levels of black and brown bodies (Alexander 2010). To accurately address these concerns, additional in-depth interviews and surveys need to be conducted to further explore these associations among nonwhite individuals.

The survey experiment findings suggest interesting patterns with political and religious data and their associations to essentialist beliefs. For instance, higher levels of religious beliefs are associated with higher levels of essentialism. Although this is an unsurprising data point, this relationship is virtually nonexistent within the sociology canon of literature.

Disclosures, limitations, and risk

For several reasons, I was careful to practice reflexivity throughout the duration of this project, and more specifically during one-on-one interactions with interview participants (Tracey 2013; Hesse-Biber, 2017). It is important to consider the researcher's position, role, and point of view. For instance, I have not taken and do not plan to take a genetic ancestry test. For the sake of transparency, disclosing this fact to my participants encouraged them to provide me with as much detail as possible. Knowing I was an outsider to the testing community with no prior experience allowed the space for participants to fill with detailed and in-depth responses.

During interviews, it was also apparent to be reflexive of my social location as a white middle class woman. Many of these conversations occurred during 2020 when a constellation of social issues was collectively occurring; we were experiencing a controversial election year, the height of Back Lives Matter protests over the murder of George Floyd, and the coronavirus pandemic was still very much in its infancy. That is to say, conversations about race and social issues with both white and nonwhite participants resulted in rich emotional discussions that were often full of stories from over their life course. And, although ideas of race or "being white" seemed very strange for white folks to comprehend, presumably due to my white identity, they felt comfortable discussing their whiteness with me. Furthermore, other aspects of my research identity became apparent to my participants. For example, as an antiracist researcher and scholar, the small number of nonwhite participants that I interviewed appeared more than willing to describe their experiences with me, ostensibly for the purposes of antiracist research and academic advancement.

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ABSTRACT

BACKDOOR TO ESSENTIALISM?
GENETIC ANCESTRY TESTING AND THE SOCIAL DECONSTRUCTION OF WHITENESS

by

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Major: Sociology

Degree: Doctor of Philosophy

Towards the turn of the 21st century, spawned in part by the Human Genome Project, ideas about race and ethnicity shifted away from the essentialist belief that humans can be grouped into discrete, biologically relevant racial groups. More recently however, genetic ancestry testing (GAT) has exploded in popularity, as individuals seek to identify their ancestry and/or health profiles through genetic testing. Genetic testing commercials implicitly promote the essentialist belief that racial and ethnic identities are embedded in genes by portraying images of people altering travel plans, checking a different racial category on a survey, or trading in bagpipes for lederhosen, based on their genetic test results. In recent decades, academics have begun to underscore how GATs are spurring a geneticization of identity as companies are marketing a technology that encourages individuals to experience changes in their racial and ethnic identity based on genetic evidence. Scholarship increasingly suggests that white Americans are both more likely to take genetic tests and to change or exoticize their identity based on results. Through in-depth interviews and a survey experiment, I explore identity formation and essentialist attitudes

among individuals that have participated in genetic testing. This dissertation contextualizes the institutional role of direct-to-consumer genetic science in facilitating constructions of and determinative beliefs about race and ethnicity for individuals. I argue GATs are racial projects prompting white individuals to engage in an inverse process of constructing race, a process called 'the social deconstruction of whiteness.' White individuals use the imprimatur of genetic science to deconstruct their race in an era where the socially constructed category of "white" is losing salience as an identity and the history of white supremacy is becoming more widely recognized. GATs allow whites to claim an alternative identity, leaving the structures of white supremacy firmly in place. This process could lead society past "racism without racists" and toward "white supremacy without whites."

AUTOBIOGRAPHICAL STATEMENT

Dr. Whitney Hunt is a Visiting Assistant Professor in the Department of Sociology and Anthropology at Colgate University. Whitney completed her doctoral work in the summer of 2022 at Wayne State University (WSU) in the Department of Sociology where she studied Social Inequality, Race and Racism, Science and Technology, and Media and Culture.

Whitney has also been recognized as a dedicated teacher. In 2022, she received the Kaleema Sumerah Award for Student Teaching and Activism from the sociology department at WSU.

Dr. Hunt is also an author, with her most recent article, "The Geneticization of Identity and the Social Deconstruction of Whiteness" (2022). Other publications include "Negotiating New Racism: It's not racist or sexist. It's just the way it is." (2019) and "A Culture of New Racism in Comics" (2019).