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UNRAVELING DNA AND IDENTITY:
A HUMANISTIC PERSPECTIVE ON EPISTEMOLOGIES AND ETHICS
OF GENETIC ANCESTRY TESTING

By

Eve Carlisle Polley
B. S., Shimer College, 2000
M.A., University of Louisville, 2015

A Dissertation
Submitted to the Faculty of the
College of Arts and Sciences of the University of Louisville
in Partial Fulfillment of the Requirements
for the Degree of

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in Humanities

Department of Comparative Humanities
University of Louisville
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A Dissertation Approved on

June 14, 2022

by the following Dissertation Committee:

Dissertation Director
Dr. D. A. Masolo (Philosophy)

Committee Member
Dr. David S. Owen (Philosophy)

Committee Member
Dr. Oliver Rollins (Sociology)

External Reader
Dr. James Ogude (African Literature and Cultures)

Dedicated to my mother, Connie Carlisle Polley,
who formed who I am in untold and unquantifiable ways

ABSTRACT

UNRAVELING DNA AND IDENTITY: A HUMANISTIC PERSPECTIVE ON EPISTEMOLOGIES AND ETHICS OF GENETIC ANCESTRY TESTING

Eve Carlisle Polley

May 1, 2022

The advent of DNA ancestry testing motivated a burst of human activities that constitute a scientific-technological-industrial-personal-social movement of immense scale, infused with epistemological and ethical questions of great and important variety. This movement has motivated many discourses in the social sciences, with study subjects ranging from the language usage of geneticists, to moral conundrums faced by test-takers, to potential ramifications in global structures of political power. At the same time, and especially in recent decades, the discourses of the comparative humanities have included with increasing frequency and urgency research and theorization about concepts and consequences of human social identities, alongside reasserting and developing long-standing questionings about the supreme dominance of the natural sciences in the determination of truth and reality.

The problematics that arise when we consider the definitions, boundaries, and intersections of human individual-personal and communal-social identities, impact not only how we understand ourselves and the nature or composition of society but have profound practical-applied impacts from the medical to the political. As I learned more about genetic ancestry testing and the movements in human society that it has enabled

and inspired, my training as a philosophical humanist begged me to analyze these extant and arising problematics in other, or additional, ways.

This project involves the application of theory from both the humanities and the social sciences, in order to answer questions such as the following: How are the boundaries between different ancestral groups being drawn? Whose knowledges contribute to the determination of these boundaries? What dynamics of social power are present? Does the science that underlies genetic ancestry testing exhibit some of the same characteristics as earlier sciences now considered to be pseudoscientific and entrenched with scientific racisms, sexist and heteronormative patriarchies, xenophobic colonialisms, and other subjugative conceptualizations of human being and identity? On the contrary, what are the positives—towards the ends of knowledge of humanity and social justice for humanity—in all of this?

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INTRODUCTION

“I found out I’m really white...” says my friend beginning to share the results of a recent ancestry DNA test. “Scandinavia” soon comes up in the conversation.

A long-famous morning show host and direct-to-consumer ancestry DNA company spokesperson exclaims in an ad, “I’m 74% Italian!”—with the brightest of smiles—alongside a few utterances in a mixture of Italian and English languages.

A young person, born and raised in the United States and who identifies in terms of familial and cultural history as a Palestinian man, grapples with how to interpret the shifting percentages displayed in his ancestry test reports as they are updated periodically. He wonders not only about how and why the numbers and category descriptors continue to change over time, but also how is it that none of the reports contain mention of “Palestine” or “Palestinian”?

At a family gathering, discussion turns to how a close relative recently received results from a genetic ancestry test. “I’ve always liked Jewish traditions,” is responded by a biological descendant of the test taker present at the party. Followed by, “And look at my nose.” Shrugs and smiles arise from the group.

DNA ancestry reveal videos posted online by untold numbers of individuals contain heart-wrenching jump cuts resulting from the abrupt turning off of the camera to make urgent phone calls. In one video, the young, Black test taker had just opened an envelope to a report that showed no African ancestry. Another video comes to a similarly

abrupt—but more felicitous—end, when the report received contains long-sought information about African matrilineal origins. Though for very different reasons, in these instances, just two among so many, the individuals in question upon receiving their test results appeared to feel the intense need to call immediately upon persons very dear to them in order to emotionally process and better apprehend the information just received.

On white supremacist internet fora those who believe their whiteness indicates superiority and a tandem right to reign over others who are not white debate about the meanings of these tests. Sociological studies have monitored and measured some of these conversations, concluding that often those who received the results that they desired displayed them as proof of racial “purity”; at the same time, suspicions about the validity of the science behind the tests were sometimes raised when test results indicated any heritages considered to be undesirable by that person and group.

An organization of grandmothers in Argentina whose children and grandchildren were lost during mass political violence advocates that their grandchildren who survived, as well as the remains of their deceased children, be returned to them. They determine the utilization of genetic testing is in their favor. However, what begins as a focused endeavor aimed at saving individuals and reuniting families, ends in a state-sponsored, large-scale reconciliation project among communities.

Pregnant persons and persons preparing for pregnancy who have certain more privileged socioeconomic statuses are afforded the opportunity to undergo fetal and personal genetic tests that give them access to information about the potential future characteristics and abilities of their offspring unavailable to previous generations of humanity. Decisions about how to proceed with regards to pregnancy, childbirth, and

child-raising—about when and how to create new human persons—are made with this new information in mind.

Young attorneys conceive of a legal plan to determine and institute reparations for the descendants of African persons enslaved, in body and through law and derisible custom, and forced to labor without the ability to profit, in the United States. Their plan is centrally dependent on DNA ancestry testing services, and subsequently the underlying genetic science.

Numerous indigenous communities and individuals converse and participate in national and global debates about the usefulness of DNA for member-identification and citizenship purposes. Some persons and groups are coerced by law, by bureaucratic practice, and by force into incorporating DNA test results into their definitions of who they are with regards to their indigeneity and their specific group membership. The result of these oppressions can and does often have the immediate and practical effect of increasing or decreasing, beginning or ceasing, the provision of basic goods and services that sustain individual, familial, and community life. On a grander and longer-term scale these efforts are a part of the continual reshaping of the conceptual boundaries that define indigenous communities—present and past—sometimes with, but more often without, meaningful consent from those same communities, or their descendants as may apply. Meanwhile, foundational practices and principles utilized in the formation and evolution of DNA ancestry testing science and technologies rely fundamentally on the acquirement of genetic materials, actual bodily resources, from these communities, and indeed also historical and cultural information. These foundational principles, or concepts, and

actions form the epistemologies and ethics which are being investigated as a part of this project.

This may seem like far too many examples with which to begin our journey, but—as I aim to demonstrate herein—it may be impossible to underestimate or undervalue the number and intensity of the ways that genetic science and technologies, including the direct-to-consumer (DTC) ancestry testing component which forms the focus of this research, can and do influence real human lives, on the individual, group, and global societal levels. And all signs point to the probability that the majority of the capacities and influences of genetics and its applications have yet to emerge.

When I first began to think deeply about these matters, one of the things that was readily apparent to me was that DTC genetic ancestry testing—including the scientific, the technological, and the commercial-industrial aspects of it—did not give the impression of accounting for much of what I have learned about human identity in my training as a philosophical humanist. It seemed that there were so many questions begging to be asked about the interpretation and significance of these tests, what science underlies them, and how they are being used in the lives of individuals and groups to create meaning. I was skeptical that whatever these tests were accomplishing that they were going to be able to tell us who we *really* are (as is so often claimed in advertisements, and more generally in everyday conversation and media).

Of course, I know that I am not alone in thinking these matters important and worthy of extensive consideration. Commentaries, discussions, and analyses having to do

with genetic ancestry testing quickly became and remain steadily and highly visible in popular media and other (social) locations of discourse in which many people participate or of which they are aware. In the specifically academic realm, as I began my research and attempted to cognitively engage with what was already being discussed and theorized, I found that it was in the realm of the social sciences, sociology in particular, that the lion's share of the scholarly discourse about DTC DNA ancestry testing had been generated. This already extant discourse on the subject is a formative factor in my choice of approach and methodology for this research project. It was indeed a formative factor in my choice of topic for this dissertation, envisioning perhaps a lacuna in the literature of the humanities where I might contribute something of value.

To incorporate this additional disciplinary variety of research into my work in a manageable way, it became prudent and convenient to think of my resources as falling within three different realms: the social sciences, the humanities, and non-academic discourses. These realms I describe here not in order of importance, but rather in the order which seems most sensible for effecting and communicating this research project. The research from the social sciences sets the stage by establishing much of what is already being discussed among recent and contemporary scholars about DTC DNA ancestry testing and genetics more broadly. The research from the interdisciplinary humanities gives dimension to and stimulates the setting with a breadth and depth from ideas past and present about what it means to be human and how we identify one another. Humanistic discourses likewise insert, affirm, and develop longstanding questionings about the supreme dominance of the natural sciences in the determination of truth and

reality. Non-academic discourses keep our analyses grounded in the great variety and wealth of human experiences being reported on a daily basis as a result of new access to this new type of scientific information.

Following the above, the first of these realms is that occupied by social scientific works, especially the literature published by sociologists who study the social characteristics (or social-ness) of science broadly speaking, of genetics more specifically, and DNA ancestry testing in particular. In reading this research and analysis, I have learned about the actual work that is being done in the laboratories and offices of genetic scientists, about consumer usage patterns, about the business and industry of genetic ancestry testing, about legal ramifications, and also of the theories that social scientists have developed based on the data collected in the studies they have conducted. I have—to my difficulty, but also to my intellectual stimulation—found many compelling arguments of sociological origin that have contradicted, or at least complicated, some of my initial intuitions about what conclusions I might come to at the end of this dissertation.

The second realm consists of ideas drawn from the deep well of humanistic contemplations of identity, from the scholarship and creative works of the interdisciplinary humanities with which I am most familiar. I engage with poetry, paintings, statues, tapestries, music, novels, and film, but the principal focus is on theoretical texts and ideas, especially those to do with human social identity, specifically epistemologies and ethics of identity—knowledge about who we are, and how we ought act and be, in relation others. My concern here runs deep and has been present for a long time. It has to do with the desire to have a more accurate and better-defined

understanding of this new science-technology, that is, to resolve cognitive dissonances and satisfy my intellectual curiosities about it, but also the aspiration to take action, humanistic action through words, with regards to what I consider to be a precarious and sometimes dangerous yet still nascent science-technology with so many apparent and potential social impacts.

It should be noted here that my definition of the concept of identity might be said to run as broad as my concerns about it run deep, but I will do my best to ensure that it not remain vague. The broadness of or variety in the ways that I employ the concept and use the term “identity,” and the manner in which I interpret others’ works as addressing the same concepts or similar concepts though the term be not used, has to do both with the relatively recent change in meaning in its English usage (making some historical texts that are conceptually related less obviously so), but also, and I think more importantly, the multiplying variety of ways that “identity” as an idea is being used right now. All said, though I hope and intend that I successfully communicate explicitly and definitively enough throughout this tacky web of what-is-identity, I do not make too much of an effort to not get lost in it. The answers I am seeking I do not think are to be found by obsessing about exact, unchanging definitions for certain terms, but rather in the very human mess of all of it. This is a tactic that is in knowing and purposeful tension with the always specifying and quantifying practices and theories of the natural sciences. I think there may well be good objections to be raised against this aspect of my approach, however given my perspective on and intentions in doing this work, this appears to me the only to go about it authentically and with the freedom required to take paths unsuspected and to come to meaningful conclusions that are not predetermined.

The third and final realm is that into which I have immersed myself in multiple ways in order to better understand DNA ancestry testing in society today outside academia. This consists of things which might be labeled “popular” literature and discourses; usually my preference is to refer to them as “non-academic” sources, which I consider in no way as a class to be of lesser value or importance than any other potential sources of knowledge. I surveyed the discourses present in newspaper and magazine articles, best-selling books, education and entertainment-focused television shows, blogs, graphic novels, short films, feature-length films, social media posts, and of course also in conversations among people whom I spoke with personally. Although I know my awareness of these discourses has been invariably heightened by the fact that I have been doing focused research on the subject, I feel confident in reiterating that it is difficult to underestimate the breadth and magnitude of all of these conversations about DNA and identity. I have worked with these artifacts of culture hoping that they might point us toward understanding and appreciating the multitudinous ways that this still-new science-technology is affecting human lives.

It should be emphasized here that these three realms do not and are not intended to exhaustively describe and encapsulate all the kinds of literature researched, artifacts studied, and other human things contemplated, but rather are organizational tools that have made the research more manageable to carry out and to communicate. It is hoped that through the course of this dissertation it will become apparent the many ways in which this method of classification into realms is ambiguous in its helpfulness—making research more organized and graspable while simultaneously obscuring some of the interconnections that exist through and among these un-necessary (but still helpful)

delineations. Every effort will be made to address the subject at hand in a thoroughly interdisciplinary and interdiscursive manner, ultimately aiming towards and promoting the idea that the boundaries among academic disciplines and indeed all discourses are porous, in motion, evolving, and always somewhat indeterminate.

The form of this dissertation follows an arc beginning with an initial exposition of the subject including an introduction to some discourses and narratives that illustrate a range of its diverse components and aspects; into statement of methodology and a review of the scholarly literatures and other texts and cultural artifacts encountered and employed during research; to the center and apex of this project, analyses of individual narratives-cases which convey some of the particular, personal life experiences made possible by this science-technology through the integration and application of the theories studied and ideas generated during the research process; and finally, on towards the two final chapters which take the results of these core analyses and place them back into conversation and context with practical-applied concerns, from both politically and philosophically-inclined perspectives, and some of the truly epic human questions which underlie, override, and intertwine with all.

In Chapter One, building on what is initiated in this Introduction, I aim to convey the full impetus and design for this research, including the necessity and urgency of the critiques it entails, and some of the types of problems and possibilities it addresses. This chapter includes: a description of the subject-context at hand, DTC DNA ancestry testing, including explanations of terminologies used; and, a consideration of the subject from

specifically global and historical perspectives; Throughout this chapter there are series of questions which have been pondered—some answered—over the course of this research. These series of questions are the starting point to the research.

To describe further the contents of the first chapter, it begins with a description of some of the complexities of direct-to-consumer DNA ancestry testing, including elucidation of the concepts and practices involved in its scientific, technological, and commercial aspects, as well as considerations from the consumer end—from individual human and community perspectives. Firstly, we must answer the question: What is DTC DNA ancestry testing? But after answering preliminarily this question which in a sense appears quite simple, we may go on to ask questions such as: What might it mean, for example, to think about DNA ancestry testing as a social movement or as a set of social movements? This perspective emphasizes the human, experiential, life-based aspects and impacts of this science-technology-industry.

If it is indeed appropriate to think about certain aspects of DNA ancestry testing as a social movement or a series of social movements, then we must ask who is it that is participating in these movements? And also, whom else does it affect? It is necessary for this reason to continually attempt to consider the matter from a global perspective. It is not equally popular everywhere among everyone (or every social group). How might we account for its explosive popularity in certain regions and among certain populations, and the relative lack of interest found in it in other places and by other persons and communities? It is, for example, very popular in Kentucky, while it is relatively unpopular in Kenya. By considering these aspects of the movement, again at least attempting to grasp or grapple with the globe of humanity, we might begin to

contemplate the ways in which the history of colonization and racialization has, alongside other manifestations of power over the Others, formed the conditions which do or do not foster desire for this sort of information, and determine some of the ways in which it is utilized and valued.

Throughout and at the closing of Chapter One are series of epistemological and ethical questions that I aim to answer through the remainder of this dissertation.

Chapter Two's principal aims are to communicate the methodology of the research process, and to provide a survey of the scholarly literatures studied both of the social scientific and humanistic varieties.

Firstly, the methodology of this research will be explained and given context and reason. The methodology, as may have begun to be inferred from the above, aims at an integration or synthesis or theory that brings together the three realms previously described: social scientific research, humanistic literature, and non-academic discourses with regards to the subject matter at hand. The primary purpose of having overviewed and studied a great deal of non-academic discourses has been to gain an appreciation of the breadth of this movement—the variety of ways that it is created by and impacts people's lives—in order to aim ultimately to understand the depths of its impacts on individuals, communities, and the world of humans as a whole. Social scientific research, sociological research especially, as described above, is a central component of my approach due to the extensiveness of research on this particular topic by those trained in that discipline. This provided an additional challenge to my work, but simultaneously

drove it forward knowing that I might be able to contribute by bringing my own disciplinary understandings to conversations already taking place in another discipline.

In this chapter, I outline also how this research is situated within the frameworks created by discourses already in progress. Since it was determined early in the course of research that sociology is a primary disciplinary forum for the discussion of DNA ancestry testing, these scholars and their works are introduced, and a proposal is made for how these works will be employed as a part of this humanistic research.

Preceding the literature review is an abridged consideration of what all is or can be entailed in the ideas of categorization and classification broadly speaking, quickly proceeding to how we might understand *social groups* and *social identities* in an expansive and integrative manner that might somehow encompass the myriad conceptualizations of categorization and identity that (I argue throughout this dissertation) are a part of DNA ancestry testing. This includes, but is far from limited to, race, ethnicity, nationality, religion, language, sex, gender, sexuality, and socioeconomic status. Some of the questions considered include: How do we or can we correctly isolate and classify these aspects of human identification? If that is possible in some way, in what sense do we find these varieties of categorization or affiliation similar? Or rather, are they completely dissimilar and unvaluable to compare? In considering the ways that they cannot or should not be untangled from one another (considered separately), how do they relate (intersect)? Specifically, how might their intersections and interdependencies be evident in DNA ancestry testing?

Race is put first on this particular list for a reason which I aim to communicate throughout this dissertation, but that is not because I consider it the most important

concept or factor (within the context of this research) among those listed above. In fact, it is not possible—as will be argued herein and has been argued and demonstrated by many others—to extricate it from the rest of this web of *identity-concepts*. That said, I do focus on race as one variety of my and many others’ focused concerns from a time well before the advent of anything like DNA ancestry testing.

One of my earliest perceptions about genetic ancestry testing as a scientific practice was that, while new, it seemed remarkably familiar. While it is a science-technology-industry that promises to explain who each of us are in the greater context of humanity, the sort of results it provides mimic social categories and understandings of human groupings. More particularly, and gravely, it reminded me of the history of “scientific racisms,” phrenology for example, influential and even dominant in previous decades and centuries but presumed or hoped long expelled from scientific practices and principles. The similarities between it and these other sciences—now called “pseudosciences” and discredited among mainstream scientists and hopefully most people—appears also to continue from types of basic principles to the manner of popular uptake. As with phrenology (which I will not reference in the past tense alone; it has been cited to me personally as accurate science more times than I can recount in recent years), and indeed so much of the human anatomical and medical work done in the context of early evolutionary (largely Darwinian) science, DNA ancestry testing is utilized as positive evidence by those seeking to uphold white supremacist ideologies. And while this is perhaps one of the most obvious and studied (to those familiar with the history) and simultaneously good headline-making or click-generating (containing accusations of direct racism) parallels between the societal impacts of these older sciences and the

genetic science underlying DTC ancestry testing, there are many less apparent or intricate, but also very important, impacts that I aim to better understand and to explain through this research. In sum, I aim to question whether or not my fear is correct: Is DNA ancestry testing just another manifestation of “scientific racism”—another example of the way that racist ideas about race are embedded in the history of science as it has been built and rebuilt over the last several hundred years? What more is there to understanding this history? To immediately make this more complex—how is it, if any of these concerns have basis—that there are those who effectively use the tools of this science-technology-business towards social justice ends?

Following this priming, I focus on identity in this topical context is the literature review. In the review I offer an account and description of the academic resources, social scientific and humanistic, utilized in subsequent chapters’ analyses and reflections.

Of most immediate importance among these resources in the realm of the social sciences are the studies and theories of sociologists and other social scientists who have investigated DNA ancestry testing in action and considered it in a variety of its conceptual aspects. Their studies take us inside the laboratories and offices of this science-technology-industry, introduce us to key persons and organizations and their roles within it, and provide fundamental operational details important in later analyses such as the kinds of databases used to store consumer genetic information, including details such as how fields are determined and named within it. Studies focused on public or lay perceptions and uses of DNA ancestry testing and science are also a part of the literature, and for the analytical purposes herein serve to add additional social-scale contextualizing factors to the interpretation of the isolated (personal-individual)

narratives that provide centers for the core analyses in Chapter Three. More expansively, the sociological literature offers perspectives and theories on the makings and impacts of both genetics and race and other social groupings. At their most expansive and inclusive these discourses address the foundations of scientific and social inquiry; as much as possible the most relevant of these impactful theoretical insights from the social sciences are taken into account in the subsequent chapters of the dissertation.

Most important among these resources in the realm of the humanities are the writings of philosophers and other humanists which form the soul of this dissertation. It is my awareness of their conceptualizations and theories that drove me to think this subject important and good to write about, and—so far—endlessly fascinating. Some of these persons and writings I have been intimately familiar with for many years, while others are new to me or have become newly significant to me over the course of this research. Art and other human creative works, too, cannot be and are not forgotten. Fictional narratives, expressions of visual and auditory creativity, multimedia arts and more with themes of genetics are not hard to find and are an important part of this discourse. In my research, with no difficulty at all, I found an abundance of works from graphic novels to pop songs to television shows which unequivocally address the topic, and many more which feature interrelated concerns. In artistic creations of the dramatic variety, many I have come across form a subgenre composed of genetic nightmares, part of a greater contemporary apocalyptic movement in art and especially in fiction; at the same time, it is frequently utilized as a comedic device to generate laughs, too. And perhaps as may need not even be mentioned, these genetic themes are often used as vehicles for plumbing the deeper recesses of our thoughts and emotions about these matters that are so

apparently interwoven into our body, being, and identity as humans. Artistic themes of genetics present and represent a very broad swath of human experiences and modes of understanding.

While Chapter One is densely peppered with questions, Chapter Two focuses on problematics, as they are addressed in scholarly literatures and other creative works. These problematics interrelate with the questions from Chapter One focusing especially on those academic discourses and artistic themes found to be pertinent through the process of research and study for this dissertation. What philosophical problems arise, both epistemological and ethical, when we bring these theories and perspectives into conversation with one another? What picture of identity is formed? What potential problems do we perceive in the science? What opportunities? Considering the entire set of human ideas and actions that we find in them, how might we best construe what is happening? If we are thinking of DTC DNA ancestry testing as a social movement, what problems are there to solve within this movement?

In bringing out these problematics—these patterns of disagreements, and agreements, among and within these discourses and theories, and other complexities and problems—the aim is to eventually come to (a) better and more functional definition (or definitions) of (social) identity that we might use in the analyses and reflections in the subsequent chapters.

No conclusions are drawn in this Chapter Two, the principal objectives are to communicate methodology, provide greater historical context (and historic meaning), to provide a literature and artifact review, and to inventory the (or at least highlight some of

the) epistemological and ethical agreements and disagreements among the critiques-themes-theories-discourses presented in the review as they pertain to this subject.

Chapter Three contains the core analyses of this dissertation. These analyses seek conceptual connections and integrations contained in and among the diverse materials surveyed during research that will help us to find answers to the questions and solutions to the problems posed in previous chapters. This includes resources studied of both the academic and non-academic variety. Specifically, the epistemological and ethical conceptualizations and theories described in Chapter Two will be applied to the narratives described in Chapter One. The dual aim of this application is to deepen our understanding of the real human dramas playing out in these narratives, and to contribute to the elucidation, integration, and evolution of the theories contained in these academic works and the discourses from which they arise by confronting them with new life-source material (new varieties of human life narrative arising from the advent of DTC DNA ancestry testing) and one another.

Some of the dilemmas presented by the narratives are relatively easily explained. By “easily explained” I do not mean without consequence and often deep meaning, but rather that it takes just a few examples or arguments to answer the question at hand, or to show the manner in which the problem or dilemma might have been avoided. By “dilemma” here I mean, for example, the emotional distress that is generated in some persons upon reading their ancestry tests results. Sometimes it is the case, I argue, that just a bit more explanation about the potential outcomes of the results, their limitations,

and the variety of ways they might be interpreted, could have prevented the distress by avoiding the underlying misunderstanding which so often leads to the distress.

I begin with these simpler analyses, working towards those narratives and themes—those complex problems of identity—which present more difficult analytical challenges. Analyzing these stories and creations of life, each with real meaning and consequence to the individual person, necessitates the utilization of the full breadth of theories and discourses from the humanities and the social sciences previously described. My aim is, as the title of this dissertation indicates, to unravel DNA and identity. By this I mean to deal with life experiences and expressions generated by the advent of DTC DNA ancestry testing in terms of the concepts entailed therein and determine what relationships and what meanings might be found among them, and to do this by garnering the capacities generated by the academic scholarship in which I have long been training—the comparative humanities, as well as the new scholarship I have become acquainted with over the course of this research—largely drawn from the social sciences. Creative works of the humanities, too, are utilized and appreciated as conceptual tools for greater understanding.

Concepts, as I understand them and write about them throughout this dissertation, are always just that—that is, they are always created or generated or understood by dynamic, living beings and are therefore never static (nor are they agreed upon by all); they are always in the process of being formed. “Conceptualizations” is a term that I often use to indicate this dynamism of all that which is conceptual (or being considered conceptually). The terminology of “identity” is perhaps more obviously conceptual than the terminology of “DNA,” which is often utilized or understood primarily as a

denotation for something that is physical as opposed to conceptual. However, rather than acquiescing to this binary distinction (DNA is physical and identity is conceptual), I methodically avoid it throughout. It would be impossible not to recognize that reading publications from the social sciences, particularly those of Alondra Nelson, Dorothy Roberts, and Kim TallBear, was transformational in this aspect my research and analysis (emphasizing or defining DNA as conceptual and social rather than physical), building on my studies in philosophy of science and specifically feminist philosophy of science, and perhaps combined with a longtime disposition towards understanding in this sort of mode. This important piece of the puzzle is readdressed and argued throughout.

To begin the unraveling, we ask: What is DNA as an idea or a concept? What is identity? How are these concepts intertwined in DTC genetic ancestry testing, and following, what epistemologies and ethics can we identify as being formed when we subject all of these concepts including their relationships with one another to careful analysis? What are the epistemologies and ethics of DNA ancestry testing?

Knowing that these questions need not and cannot be considered effectively in isolation from discourses already taking place, I meditate on the research done for this project to inform the analyses. How might we be informed in our analyses by the literature generated by social scientists studying this movement in its various components, contexts, and aspects? How might we be informed in our analyses by the literature generated by humanists who have been pondering the nature of identity (termed differently in different places and times) for eons? And throughout all of this scholarly work, how do remain informed and persuaded of the importance of narratives and creative works spawned from non-academic sources as a result of this science-

technology-industry throughout our research—keeping it focused on all human life as much as possible?

A series of questions flowing from this concern may be stated in this way: In what ways does DNA ancestry testing seem to influence test takers' senses of their own identities—of who they are in relation to others? In what ways are these influences beneficial or harmful to the person? Do they increase perception and understanding of human identity or obscure it, or both? In what ways? How about for those who do not take the tests, but are members of the information-consuming population that are likely well-aware of the tests' existence and well-informed of the kind of results they produce? With regards to practical concerns, what are some of the things that people do—actions they take—in response to these tests? Again, beneficial or harmful to themselves? To others? In what ways? If we return to the idea of DTC DNA ancestry testing as a social movement, what do we now see in it given these considerations?

If we turn our analytical attention to the sciences and the scientists, we might ask about how—since we know that sciences are practices that take place in society, are a part of society, and not shielded or separate from its influences—there must consequentially be social aspects to every scientific theory including those which form the basis of DNA ancestry testing. What are those aspects? What epistemologies do we perceive in them? What ethics?

Incorporating as much of this as possible into our meditation, we might ask: What is taking place on a societal level in terms of how human identity formation is changing in the face of this new scientific-genetic information? What trajectories of thought and action are these and might these changes point us toward? All of these analyses are

undertaken with (at least) the following concerns: correctness, clarity, and utility towards social justice.

The last two major sections of the dissertation, Chapter Four and the Conclusion, are briefer than those which precede it; these contain reflective considerations and are of the sort that are necessarily ongoing and unending. It is planned that these will be developed in the future through further research, study, and communications.

In Chapter Four, “Motivations: Accusations of Racism, Anti-Racist Hopes, and the Scramble for Identity and Privilege,” we return to the context of contemporary society with all of its political elements—such as “identity politics”—intact, but informed by the history, narratives, theories, and analyses presented previously. Here we ponder questions such as, “Why so popular?” and “Why is this sort of data so very meaningful to some?” (and return to the question of “for whom?”). These questions, though stated casually here, are not meant flippantly. An aspect of the impulse to take these tests, and to make meaning from them, is related to a desire for better understanding when there is confusion or uncertainty, or for connection to other humans when feelings of belonging and inclusion are lacking. And not only desire for connection and understanding, but for understanding of that connection—an understanding of who we are in relation to other humans—an aspect of the definition of identity being used herein. I cannot see this in and of itself as being a bad thing, despite my numerous skeptical concerns about its consequences; moreover, it is surely sometimes good. All that said, once reconcretized from the abstract realm and perceived in its many real-life, sociopolitical manifestations,

the framing could not be more epic. The potential impact of this science-technology-industry on human life is enormous, and the clues that studying it holds to better critiquing societal problems and remedying social injustices are hopefully significant, too.

In the Conclusion, “The Problems with Realisms,” the concluding chapter of this dissertation, we are emerged fully into the realm of the philosophical to reflect upon the analyses undertaken, and to consider how the implications or conclusions of those analyses might influence our understanding not only of what is human, but of what is real. This will not be further summarized here, as it does not inform the core of the dissertation, but rather reflects upon it (and is in a state of continual flux).

Having completed the arc from exposition to literature review to analyses and on through reflections and conclusions, the dissertation comes to its end. It will be stated here upfront that while some conclusions made are quite definite at least in certain conceptual negations, and at least insofar as some of them might be translated into advice for practical changes to be made, most of the conclusions of this research are but pointers for future work. This research process has, if anything, made me understand that this topic has even more tentacles than I was capable of expecting.

Inferred from the examples given at the outset of this introduction and so many others we can try to take in the profound heights and depths and numerousness of the life-experiences generated by the advent and rapid deployment of DTC DNA ancestry testing.

In terms of varieties of experiences, they are of course inherently impossible to list, however, I will make a surely flawed and truncated attempt to do so here and now in an effort to underscore in these introductory remarks the many varying social spaces where the impacts of this science-technology-industry have already been realized: citizenship, place of residency, custody of children, marriage, adoption, maternal and paternal relationships and siblingships, other familial relationships of all kinds, immigration status, criminal investigations and judicial proceedings (practicing investigative genetic genealogy or forensic genetic genealogy), inheritance, personalized medicine (based on the science of pharmacogenetics or pharmacogenomics), education, social reparations programs, club membership, tourism, and fashion. From the obviously crucial to the seemingly innocuous, such as genetic heritage tourism, all the impacts are at least far-reaching. The crucial are on-the-face vital elements of life that cannot be disregarded (and of course will be considered). But what about the rest, those we deem not so vital or crucial or important, are they just harmless fun? Meaningful fun (as advertised)? Much less or much more, and how so?

Given the necessity for these critiques, it will be illustrated and argued throughout that more of this sort of research—this critical thinking, this purposeful reflection, consideration, and discussion about our ideas and morals related to DNA and human personal and social identity—needs to happen now and among the so many people who are affected by it (that is, everyone).

The ideology of genetics, in different ways, permeates the cultures of the world and contemporary human society as a whole. The science is widely considered so valid

that it has turned to metaphor. “It’s in their DNA,” whatever the context, biological or otherwise, means that it must be so. Popular anthropology and archaeology episodic programs and feature-length documentaries mythologize about ancient human history via DNA talk, all the while strands of multicolored light representing DNA and its molecular components twirl about on the screen. And the musical scores, they are often aspiring to the pinnacles of symphonic uplift, unless a segment mentions some potentially frightening dimension of genetic science, such as “mutations” or “virus,” then the notes might turn minor and darker in tone. There are prominent patterns in the *mise-en-scène* of DNA.

But it is not only in those things produced that are specifically and explicitly related to genetic sciences and technologies, but also so many other manifestations of culture including all forms of art, that we see the impressions of genetic epistemologies and ethics. “I just took a DNA test / Turns out I’m 100% that bitch,” as the Lizzo song goes.¹ The symbolic power of genetics is complicated and present in so many human creations and ideas.

And we are so educated in it—so knowledgeable about it. Apparently, it is so. The local, national, and world news in recent weeks (January 2022) has made yet another genetics term, “subvariant,” a part of everyday speech. It is stated with little explanation but great emphasis, in deepened voices and boldface type. It seems the audience is supposed to have prior knowledge of what it is and why it is so important.

¹ Lizzo (Jefferson, Melissa Viviane). “Truth Hurts.” Nice Life Recording Company and Atlantic Records, 2017.

“Trend” is not nearly strong enough to describe the deep impressions this genetic science-technology-industry has made on human lives. “Movement” is right. In the history of ideas, DNA and the science of genetics are destined to be colossi. I am so curious to understand better how it is that these epic and ambitious ideas are shaping people’s thoughts and actions; excited to interact with people through conversation and texts, and other cultural artifacts, to understand how and why it is that there are so many different interpretations of these ideas, ways of assigning meaning to them, and reactions in terms of changes in activities for both individual persons and for groups. Finally, I am anxious to contribute to this conversation that I am sure is so urgent and exceedingly important.

The subject is clearly vast and as such, still determined to tackle it, I knew I must provide boundaries for my research in order to give it definition, and the possibility of coming into reality so that it might be communicated. Consequently, I do my best—particularly in the core chapter of analyses—to keep the focus on DTC DNA ancestry testing rather than allowing my analytical wish to incorporate it all to cause my mind to wander too far or too frequently into the surrounding spheres of genetics and more broadly the natural sciences. Though all of these ways or aspects of understanding reality or perceiving the world are inextricably interwoven, incomplete on their own, and therefore on some level necessary to take into account in order to accomplish the aims of this research, the sharpest focus must remain on the exact topic specified so that results can be achieved.

At present direct-to-consumer genetic ancestry testing is an active and important presence in the world of humanity. From the time the first commercially available test kit shipped to this moment, it has continually increased in presence and influences with gains in popularity and number and variety of applications. It came into existence in 2007.

This genetic science-technology-industry should be considered very significant and important by those who have taken such tests and by those who have not. Whether or not one has taken a genetic ancestry test does not determine whether or not this science-technology-industry affects one's life and the lives of close loved ones, and indeed the whole of human society. I hope that the narratives which kicked off this introduction have begun to establish this as a true statement.

What can this complex science-technology-industry and the social movement it has spurred or of which it is a part tell us, and what can it not tell us, about our identities—about who we are in relation to others? How should those of us contemplating and debating these matters in academia, using terms like “epistemologies” and “ethical problematics,” think about what is going on? How are human knowledges changing? How are moralities? And, what does or might this mean for all of human society and the rest of life on Earth in practical terms? Are there any actions we really ought consider taking?

My skepticism has undoubtedly been on display in this introduction, and it is unavoidably the case that this research takes place in the midst of that doubt and concern. I am skeptical about the prospect that genetic testing conveys or will be able to convey to us the sort of information and experiences that we are seeking when we set out to better

understand our own identities and those of others. I am as certain as I can be that this variety of data does not and cannot contain all of the diverse and rich experiences of human life that give rise to differentiated social identities. This is argued throughout the dissertation. That said, I remain so curious. Our DNA is, surely, telling us something. But what?

It is about who you are, who I am, who we are, in relation to others. What does it mean to have and proclaim identity and identities as a human, and to be identified in this spectrum of humanity? What role can or might DNA play, or not play, in answering these great human questions?

CHAPTER ONE

THE SCIENTIFIC-TECHNOLOGICAL-INDUSTRIAL- PERSONAL-SOCIAL MOVEMENT: DIRECT-TO-CONSUMER GENETIC ANCESTRY TESTING

The idea that our ancestral, hereditary traits passed down to us from previous generations—including our capacities, our limitations, and perhaps even the essences of our identities—are tied to something inside our bodies called “deoxyribonucleic acid” (DNA) is very new in the story of humanity. Herein I will demonstrate how it is that this idea and the practices related to it are and must be factors that radically shift our epistemologies and our ethics. Evidence will be offered from scientific, technological, industrial, personal, and social perspectives, providing a basis for our analyses of direct-to-consumer genetic ancestry testing as a movement in human global society that has significant implications for all humans, and one that presents both problems and possibilities.

DNA was introduced to the scientific world through a 1953 research article by James Watson and Francis Crick entitled “Molecular Structure of Nucleic Acids: A Structure for Deoxyribose Nucleic Acid.”² In this article, Watson and Crick spell out the structure of this long molecule with its twisting, double-helical form held together by

² Watson, James Dewey, and Francis Harry Compton Crick. “Molecular Structure of Nucleic Acids: A Structure for Deoxyribose Nucleic Acid.” *Nature: International Weekly Journal of Science*, vol. 171, no. 4356, 1953, pp. 737–38.

pairs of nucleotides. At this moment sequencing (counting, identifying, naming, and grouping) the entire genome (all the nucleotide pairs in the DNA) of any organism was not yet on the list of realizable objectives. Theorizing about the relationships between specific genes and what they do was an even longer-term goal.

Just a half century later, confidence in knowledge about DNA as it pertains to humans reached a major apex, empirically and politically, with the completion of the Human Genome Project (HGP) in April 2004. With goals established in 1988, and research launched in 1990, the HGP aimed to identify, map, and ultimately make meaning of all the DNA that makes up a human genome. The project reported meeting these aims, and the announcement was widely heralded. It might briefly be noted here that the complete genome sequencing had only been completed for one human subject's sample at the time.

In 2003, even before the announced completion of the HGP, at least one of the companies analyzed as a part of this research project, African Ancestry, had begun offering the sort of test being examined herein: a direct-to-consumer (DTC) genetic test with results containing information about ancestral heritages. Around that time there was an explosion in services of this variety, some of which are still in existence in a form similar to that in which they were founded, some of which popped onto the scene only to melt away just as quickly, and some of which still exist but have morphed or merged into other services. African Ancestry then and today provides matrilineal and patrilineal genetic data to their customers. By the tail end of 2007 in time for the holiday season, 23andMe became the first company to offer autosomal genetic testing as a DTC service, which incorporates in its processing DNA that is not just of part of matrilineal and

patrilineal lines, but from the broader range of genetic code available from the 23 chromosomes of the human genome.

Many works surveyed in the course of this research have provided brief histories of this chronology of events. Rather than rehashing those histories or giving more details, it will be taken that what has been stated here is sufficient evidence to affirm that this scientific-technological-industrial movement is recent, fast-paced, and spreading quickly. This abbreviated historical context is also given knowing that more of it will yet emerge through the rest of the expository, analytical, and concluding portions of this dissertation.

In this exposition of the subject, first the focus is on the fundamentals of the consumer experience, that is, the typical individual procedure for taking a DTC genetic ancestry test. Next is explanation of the central scientific ideas and terminology employed in genetic ancestry testing and as referred to in subsequent chapters, in order to establish the mutual foundation in conceptualizations and language required for executing and communicating this research project. With basic scientific principles established, next it is possible to proceed to some technological, including data-related, elements that are necessary to refer to in later analyses. In closing the exposition of the scientific-technological-industrial elements and terms involved, there are remarks that log some of the key businesspersons, organizations, and economies, that can figure as landing points on a map of how this plays out in the domain of industry including capital, finance, and commerce, profits, and power.

All of these scientific, technological, and industrial fundamentals having been outlined, a large portion of the subject matter of this dissertation comes into better definition. It then becomes analytically feasible—from our newly informed vista—to pull our focus purposefully and carefully to reflecting on how all of this relates to what it is that we really want to know—what we really want to discover—which is more about who we are. Who-what are we? How do we identify ourselves (as individuals and as members of groups) and how are we given identities by others? What problems bother us in these processes of identification, whether self-determined or assigned by others? Why are these problems significant to us? How might we solve these problems? Does DNA hold, if not the entire answer, a big portion of it? How about not DNA itself, but societal patterns in reactions to the idea of it and its applications (especially genetic ancestry testing)? What does all that mean?

With humanity intact and in our focus, but informed in the science-technology-industry, we may turn our attention to the social-ness of all of it and consider DNA ancestry testing as a social movement rather than as a solely empirical, or technological, or commercial concern. This is where the core of this dissertation starts to develop, beginning to consider this as a movement in human life that incorporates all of these considerations: from the personal, to the interpersonal, to the cultural, to the societal; ultimately, to struggle with what all these human social identities are about, what they mean, and how we might and ought to interpret them in the context of this subject. How does and might all of this inform us about who we are?

Most DTC DNA ancestry tests are of the laboratory-processed, mail-in-your-spit-and-await-the-results type. A generalized consumer experience, subsequent to the decision to purchase, can be described as follows. The consumer registers and pays for the test online then it is shipped and delivered to them, or to whomever they are giving it as a gift. The test-taker-to-be then collects their own saliva sample in a small tube, seals it, and returns it in the preprepared packaging. All the while the communications component of the service is in full swing. The test taker has several choices in how to interact with the company and the information it provides: email and text message updates, website logins, and mobile and desktop apps with notifications for a variety of devices. Perhaps needless to say, the company or companies the consumer chooses to purchase service from will be in regular contact, unless one purposefully opt-outs of all these options. Digital interactions encouraged by the companies range from straightforward product promotions and updates to complex social-media-like services connecting the test-taker with fellow consumers. Once the results are ready, they are communicated to the test-taker through one of the above digital means, and often also elaborate printed mailings of the sort opened by reveal video makers.

The contents and presentation of the test results received by consumers have varied significantly over time and among the various services. A number of such discourses and narratives about test results are discussed in detail throughout this dissertation; a list containing just a few examples is provided in Appendix II. As for the variance among the companies, it may be assumed, unless otherwise stated, that the companies' services referred to in this dissertation have the same or insignificantly dissimilar testing procedures and practices as what is stated here.

The sciences that provide the conceptual foundations for DNA ancestry testing can be construed as existing on a series of spatial scales from the macroscopic to the microscopic. They furthermore include several scientific disciplinary perspectives: from that of the science of genetics broadly conceived, that is, the basics of DNA; and from those varieties of science which provide foundations particular to the ancestry component of our subject, which includes archaeology and anthropology, and also, as will be demonstrated, the more-encompassing science of biology, especially when it is considered from a historical point of view.

We begin this description at a human scale and proceed towards an understanding of the molecular structure of DNA insofar as is required for there to be a basis for employing those details when needed during later epistemological and ethical analyses.

This is a meditation on some things that are likely familiar to those of us who had the opportunity to study cellular and molecular biology at some point in our lives, and who can recall the basic principles at least in part. However, what may be different in this presentation of the topic is that—in addition to establishing the vocabulary and theory needed to understand structures and functioning—we will attempt to pay very close attention to how this anatomical and physiological information is derived empirically; that is, how it is that one goes from viewing an image that, but for it being a photograph (or other sort of imaging) taken from a microscopic perspective, might be mistaken for an abstract artistic creation consisting of so many colors and shapes created with great detail but also an amorphousness that make boundaries difficult to discern, to textbook graphics

of human anatomy and physiology with clear lines, color-coding, labels, and names for absolutely everything in the image. A question to consider as we observe this progression: How is it that what at first might appear chaotic takes form when what is being seen is given a terminology and a theory?

To begin, we envision a form of a human body. We bring our attention to some point on the surface of the skin. Examining more closely this point on the surface of the skin it is possible to differentiate a variety of features. We might notice a hair or hairs emerging. We might be able to see some variations in skin texture, tone, and shape in the small patch of our focus, perhaps due to blood vessels beneath the surface, or freckles, moles, or other common features. From some of these observations we might surmise that not every constituent part of the bit of the body that we are looking at is identical in its composition, and also might draw the inference that they are not all identical in function, or at least consider those as possibilities. At this point the unenhanced portion of our investigation comes to an end. We must at least grab a magnifying glass.

As we look more closely with this modest increased magnification at the same bit of skin to investigate some of those variations that we noted previously, we will likely be able to see even more variation within them, and among them as well. It is not one continuous, homogenous scape but rather appears more and more complex as the magnification factor increases upward.

Now on to the microscope. Even the most inexpensive optical one, one which requires only simple training in order to operate, will do for now. If we harvest a small sliver of skin from the surface and put it onto a slide, then view it under a microscope at a

magnification of about 100 times, we might be surprised to see—if we weren't expecting it—that this bodily sample appears to be made up of numerous tiny somethings all squished together. They are not utterly identical to one another, but very similar and with discernable boundaries and common characteristics, enough so that they all appear to be the same kind of thing. But what kind of thing are they?

Increasing the microscope's magnification further to around 1,000 times or so in order to isolate as best as possible one of these squished somethings in our field of vision, we begin to see more clearly its boundaries and that it too is made up of yet smaller parts. We might even have been able to discern fairly well one of these smaller parts—a noticeably large center portion of the something, a singular and central something, distinguishable from that which surrounds it—before turning up the magnification to this degree. But now we see so many other features in this complex environment.

The “somethings” starting to pile up, it is at this point that we—at least I in my abilities of perception—must employ scientific terminology and therefore simultaneously scientific theory in order to both perceive and understand what it is that is within our field of vision in empirical terms. That is, I do not find it possible beyond this point in our meditation towards the microscopic to simply observe with my vision the gist of what scientific textbooks diagrams display. I can see, up until this point, that the skin sample, and using magnification tools that I can readily comprehend, is comprised of these smaller things, which have smaller things in them, and with some major attributes that are immediately visible. But to discern in any meaningful fashion what I'm seeing or to give greater depth to my understanding of the processes that are taking place, and before

turning up the magnification any further as we head towards DNA, we must begin to explain what is being seen utilizing scientific terminology and theory.

Returning to a magnification of 100 times, the crowd of “somethings” we are seeing are what have been labeled “cells” (in English, at least, but derived from Latin through French the etymologists tell us) by biologists. These cells we have been informed are among the most primary, fundamental, and significant constituent parts of life—the building blocks of life as they are sometimes described for simplicity’s sake.

Increasing the magnification again to 1,000 times, the center something within the somethings that comes into even greater definition is the aptly named the “nucleus.” I say apt because, like the seed inside a fruit, this nucleus is said to hold something so powerful, asserted by some to even be all-powerful and wholly deterministic of our being and experiences: DNA.

Like the boundary of a single cell (the cell membrane) delineating it from the other cells which push up against it, we can tell that the nucleus is a clearly distinguishable environment within the greater environment of the cell (cytoplasm) that is noticeably different and bounded from that which surrounds it even upon this basic, one-dimensional visual inspection. But rather than being one of many, like one cell among all those cells which surround it, there is only one nucleus, and it does not appear to be pushing against and being pushed like the cells all bunched up together. Rather it appears to be floating or swimming in this microscopic, but from this perspective vast, environment. The spherical-ish boundary (in our current view, circular) between the body of the cell and the enclosed body of the nucleus is called the “nuclear envelope” or “nuclear membrane.”

At a magnification of 10,000 times, we may begin to inspect what is within this envelope or coating of the seed, the constituent parts of the nucleus, and continue to work our way further into the microscopic and eventually molecular perspective required to comprehend and appreciate this idea of DNA.

Inside the nuclear membrane we see a complex of features among which we can make out stringy concentrations within what appears to be a less dense backdrop. While it would be fascinating to turn our intellectual attention to each of the distinguishing features that we perceive inside the nucleus and learn more about all of them, having determined at this point in our meditation that in order to reach our goals we must employ scientific ways of understanding rather than relying being guided by our visual perception alone, we know that that we should focus on the stringy concentrations.

These strings or threads, as they are often described, are termed “chromosomes.” Chromosomes are DNA, combined with just a few other molecules which cause them at times in the cell’s reproductive cycle to bunch and form into the probably familiar X-like shapes in which they are so often represented. One of the fascinating things that they do spatially is act as a bunching mechanism that makes it possible for such a length, often cited as six feet, to fit in such a microscopically small space. They, perhaps even more importantly, organize the DNA for cell division. We are focusing on a cell at a moment in a cell’s cycle of growth and division called “prophase” when the chromosomes are easier to distinguish from one another—not so tangled up as during interphase—but before lining up during metaphase to further the process of reproduction via division. Perhaps needless to say, although we may feel at times like we are analyzing static things and moments, there is constant change within a cell, this basic bit of life.

DNA, the major constituent component of chromosomes, is so frequently described as a double-helix, the description seems so automated, that it may no longer be all that helpful to some. Its form is like a twisted and slightly wobbling ladder. Our meditation now arrives into a realm that must be described molecularly. The sides of the ladder are made up of phosphates and sugars, and the rungs are pairs of nucleotides. It is these nucleotide pairs or rather their ordering that is genetic coding. The nucleotides are the characters in the language of genetic codes in the same manner that one and zero are the characters in binary computer codes, and True and False are the only two choices in Boolean logic.

However, rather than having two options as in a binary code, the nucleotides (nitrogenous bases) are of four types and commonly referred to by their letters: A (adenine), T (thymine), C (cytosine), and G (guanine). In combining to form a two-part rung in the ladder, A always matches with T, and C always matches with G. That said, any one of the four may be half a rung on either side of the ladder, so that the result is that for each rung in the ladder there remains four possible configurations of nucleotide pairs (AT, CG, TA, GC). Genetic code or logic is a quaternary logic.

If we are to analyze well DNA ancestry testing, and even DNA testing more generally speaking, there are certain divisions or categories within these long molecules of DNA which are helpful to consider. These terms and ideas from the natural sciences are those which I have encountered during my research of the social scientific literature that deals with genetics (especially DTC genetic ancestry testing), and which these scholars have highlighted as especially significant in the science and practice of genetic testing.

Firstly, it is very important to consider one concept-term that is at the root of genetic science and genetic terminology, that is: the “gene.” A gene is often referred to as having a “position,” “location,” or “locus” on a chromosome, and it is a stretch of genetic code (sequence of nucleotide pairs) that has been determined to be of significance in a particular way through genetic research. This genetic research in turn is dependent upon genetic theory. It is not possible to just look, discern, and understand what is required via a static picture, or even a series of images no matter how high the resolution or frames-per-second recorded. It is not a matter of (material) tools, but of concepts. We must at least understand the basic theory of how the information stored in the code that is DNA is utilized in order to give form and function to an organism, in our investigation a human. I do not suspect that too much detail is required here for our purposes, so here the DNA-RNA-protein progression will be described simply in order to bring to the forefront of the mind this process for those who may have knowledge of it that includes greater detail, and to provide a skeleton framework for understanding the following discussion of the definition of a gene and other subsequent discussions.

If it is the case that you the reader in following this meditation with your knowledge and training are able to perceive more or further than I without the application of biological terminology and theory, I would ask you to consider: At what point do you do find yourself needing to turn to that knowledge of scientific concepts in order to understand what it is that you perceive with your senses (in this meditation we are focusing on the visual)? I do argue that it is a necessary thing that such a crossing in the ability to understand from perception alone to in combination with theory is required to understand genetics. This I hope will continue to be sufficiently demonstrated throughout

the dissertation, but this topic will be left at that meditative rather than conclusive level for now. And I would certainly be interested to hear any answers to this question from those more deeply knowledgeable about genetics than I am.

The same DNA is present in every somatic cell in the human body. In other words, every cell that comprises the body (mutations ignored for now) that is not a gamete (either ova or spermatozoa, which are also known as sex cells or reproductive cells) contains the same 23 pairs of chromosomes. (Gametes contain only a single set of chromosomes, instead of two as the non-reproductive cells do.) We have in mind that chromosomes are composed of DNA, and that DNA is part of a cell that is constantly in the process of change, growth, and division. The process we are meditating on here is how the information in the DNA of a somatic cell is used to create a template for the building of proteins, which eventually build organisms with all of their diversity inside each being and among them all.

Envision again the twisting DNA ladder, but now it is splitting down the center of the ladder between the nucleotide pairs eventually resulting in the production of RNA (transcription and translation). RNA (at least this sort of RNA) then exits the nucleus and acts as a genetic messenger (T->U) to specialized organelles outside in the cytoplasm called ribosomes. On the ribosomes, the information from the RNA (derived from the DNA in the nucleus) is used to build amino acids and ultimately proteins are synthesized. Proteins comprise almost the entirety of the human body, so we might be able to make the connection to a more tangible reality at this touchpoint in the meditation (e.g. proteins form tissues, tissues form organs, organs form systems and bodies).

I do not pretend to comprehend in a very deep manner the scientific details of these structures and processes that make up the chain of events from DNA information to full organism, and I don't think that extensive of a study is required in order to understand what is we need to know in order to analyze the subject at hand. But what I find good in this meditation is that now, with these connections among the molecular, the cellular, and ultimately the anatomical in mind, I can think more clearly about the place of DNA in human life as I know it, embodied. I also ponder that these processes ultimately manifest simultaneously great similarity and great variety, both internal to each organism and among all of them.

Returning to the gene and its multiple definitions, and to put them into a framework that hopefully will be very useful herein, sometimes the term "gene" is used to refer to a particular nucleotide sequence (of varying length) that codes for the synthesis of certain protein molecule or a certain part of a protein molecule per the process outlined previously.

In other usages, the definition also includes what are called "regulatory sequences" of DNA that are required for the "expression" of that gene (i.e., that the particular sequence of DNA in the cell, the gene, is not only present but activated in that particular cell in the synthesis of whatever protein or protein part it codes for). This expression might be explained another: Not all cells are the same in all parts of the body which we might infer, in combination with cell theory, because it is obvious just from experiencing being a human being that the body is not one homogenous substance like a crystal or pool of pure water but rather much fuller of complexity and diversity. So, if

according to this theory all the DNA in every somatic cell of a human body (and all multicellular organisms) is identical (still not quite yet considering mutations), then how is that not all cells are identical, if it is the DNA which provides the information for the structure and function of cells? Not all genes are expressed in every cell due to the combination of regulatory sequences that are a part of DNA and epigenetic factors. This is the “expression” factor that some geneticists appear to include in their conceptualization of what a gene is.

More expansively, popular non-academic and some academic discourses sometimes have the term even more broadly conceptualized in their vocabularies. Think of article titles that read something like, “Find Out if You Have Genes for Breast Disease” or “Gene that Increases Odds of Opiate Addiction Located.” In these instances, the concept of a gene might even incorporate not only physiological outcomes but also complex social ones, too.

The idea that there are certain genes that code for certain traits, perceived features and disadvantages, is commonplace even in conversations that aren’t even remotely scientific. It just comes up. Especially dominant in these discourses are concerns about or focuses on the heredity of diseases in association with certain genes. Contrastingly, talk of “good genes” is also colloquial and doesn’t usually seem to be desiring of follow-up inquiry about what exactly that phrase means and entails. What is important for our consideration here is to be well aware of the diversity in conceptualizations of what a gene is and does. In a spectrum of conceptions, a gene might just be a series of letters, a gene might be a series of letters that are put into action as code that results in the

generation of a particular physical something in the body, or a gene might be all of the above plus phenomenologically real, significant, experienced outcomes in a living being.

Furthermore, it is helpful at this point in the meditation to consider how this vagueness or uncertainty in the definitions of what a gene is and does differs from, for example, conceptualizations of chromosomes. Chromosomes are microscopically visible structures that are bunched up strands of DNA. They can be viewed, distinguished from one another, and even drawn by young student observers for confirmation of anatomical understanding with relative ease (granted, it helps if one is setup for this exercise). This is not to say that one can understand chromosomes' role in biological functioning just by looking at them, but they can be perceived and delineated as (seemingly) being of the same kind on visual inspection alone. Genes, on the other hand, are not visible in such a manner. They are too concept- and theory-laden, as is displayed by the variety in definitions and the usages of the term, even inclusive of those definitions-conceptualizations which appear to be the most directly related to molecular structure alone and not inclusive of medical or social considerations, or other theoretical considerations such as whether or not "expression" should be part of the definition. For example, comprehension of the first and simplest definition of a gene outlined here is dependent upon an understanding of the theory of the entire process leading to protein synthesis from the information stored in DNA. In sum, genes are types of things-concepts that are determined in a manner different and much more epistemologically problematic than DNA or even chromosomes.

With these empirical and scientific notions and terminologies refreshed, we will turn to just two examples of genetics as employed in DTC DNA ancestry testing that will come up again in later chapters. It should be emphasized here that these are just two examples among many. As we proceed through the literature review and analyses to come, a variety of genetic concepts utilized in genetic ancestry testing will be explained as is required to proceed with our inquiry into this scientific-technological-industrial-personal-social movement. As will be seen, the variety of concepts and their applications is great, and are necessary for understanding some of the epistemologies and ethics involved.

The first genetic idea to consider now single nucleotide polymorphisms (SNPs). Recalling the rungs in the ladder of DNA—consisting of nucleotide pairs AT, CG, TA, or GC—a SNP is said to occur when there is a change in the nucleotide pair at a single position on the strand of DNA; one of the rungs in the ladder is different than the rung in the ladder it was copied from. These SNPs can occur within stretches determined to be genes, and they can also occur in “non-coding regions.” (These non-coding regions will come up again later.)

So, what are these variations, SNPs? They are part of a more-encompassing class of ideas: mutations. Mutations, which have been set aside up until this point in this meditation, are changes in genetic code that occur when it is being replicated during the process of cell division; each of the two cells generated in the replication process (typically) has the same DNA. (Interestingly, these mutations are often referred to or taught as being “mistakes.” I say interesting because it is ultimately according to

evolutionary theory these changes result in the great diversity of forms of life that we can observe. “Change” is certainly accurate; but how helpful is “mistake”?) When these changes occur during the copying of code in gametes (sex cells) they can be passed on, and are passed on (at least one generation) if that particular gamete results, in its part, in the production of a new organism. In sum, SNPs are a kind of mutation that occurs during the cell replication process that takes on hereditary and ultimately evolutionary significance when it occurs in gamete that is passed down for generations.

Some forms of DNA ancestry testing utilize SNPs that have been passed down for many generations (we’ll discuss how many generations as we get into the analytical portions of this dissertation) as a part of their determination of group assignment. That is, certain groups are claimed to have certain SNPs, and therefore having a certain SNP in one’s genome can be a factor (according to this theory-application) in determining group membership, or probability of group membership. There are, it has been argued in the sociological literature, and will be argued in (possibly) different ways herein, that there are significant and meaningful problems in the usage of SNPs to determine ancestry.

We will consider at this moment just one more genetic concept-term that is utilized in DNA ancestry testing: “maternal haplogroup.” It is not the last of the genetic concepts that will need be engaged in order to analyze this scientific-technological-industrial-personal-social movement, but it is another term that was frequently encountered during research and it is a centrally important one in these discourses. Discussing it now, it is hoped, will continue to communicate the scale of the variety of ways that DNA is being analyzed by those scientists and others working on problems to do with ancestry via genetics, and prime the discussion for future demonstrations that will

involve real-life examples and applications, which are invariably more complex than these generalized scientific descriptions might lead us to believe.

The idea of a maternal haplogroup is dependent upon another genetic term-structure-concept that has not yet been mentioned: “mtDNA.” mtDNA stands for mitochondrial DNA, that is, DNA that is present in the mitochondria of the cell, which are organelles in the cytoplasm outside the nucleus. The DNA discussed so far consists of those 23 chromosomes that are inside the nucleus of human cells. This is the DNA that, when present in a gamete cell that is part of human reproduction, combines with DNA in another gamete cell so that the offspring’s DNA (not including mtDNA) consists of a half-and-half combination of DNA from both gametes. mtDNA operates differently in terms of how it is passed from one generation to the next, and thus enables different sorts of applications in ancestry DNA testing. Rather than each generation being a combination of the genetic code from two (gamete) cells, as is the case with DNA inside the nucleus, mtDNA is (typically) passed intact from one generation to the next, but only along the maternal line, that is, through an ovum each generation. Thus, one’s mtDNA is (typically) identical to one’s mother’s, one’s grandmothers’, one’s great-grandmothers’, and so forth, for many, many generations. This mtDNA only changes from one generation to the next when a mutation occurs in replication. Thus, mtDNA enables the tracking of a particular kind of genetic-genealogical information that differs from that enabled by the most famous kind of DNA, the 23 chromosomes inside the nucleus; it enables us to trace ancestrally long lines of descent, ovum to ovum, but only those lines.

The “haplogroup” aspect of this concept-term refers to the groups and subgroups that geneticists assign to various samples of mtDNA according to the similarities and differences in their genetic sequences. (Haplogroups are also determined based on Y-chromosome, but we will focus on the mtDNA variety of haplogroups here.) This is done in order to determine long-term maternal lineages. As the matrilineages slowly diverge from one another (have greater differences in their genetic code) over times through mutations, according to this conceptualization it is possible to group (and subgroup) mtDNA according to the variations in an empirically precise and accurate manner. Thus, if one is told their “maternal haplogroup,” also referred to as a “mitochondrial DNA haplogroup” or “mtDNA haplogroup,” it is referring to a grouping of (in our case) humans with whom one shares the greatest similarity in the composition of their mtDNA.

Haplogroups are referred to by codes that are combinations of letters and numbers (some of so many examples: A, B, C, D, F, G, H, I, J, K, L1, L2, L3, M, M14, M42a, M42c, N, N1, O, P, Q, S, X, Y) but these codes are almost always presented grouped and listed alongside the names of corresponding proposed geographic origins or on top of world maps. Almost never (or, dare I say, never, so far as I have surveyed) are they listed in the manner above, that is, alphanumeric order; it is curious to ponder the evolution of the assignment of these combinations of letters and numbers to groupings of people.

While some genetic scientists and others such as certain genetic genealogy enthusiasts might use these codes in conversation and consider them ends in and of themselves, for most test-takers (and especially in the vein of our inquiry) they only serve as a means, or perhaps a superficial symbol. A typical aim is to find out whether or not

one's maternal lineage is from Oceania, not whether or not one's mitochondrial haplogroup assignment is N.

This brings us to a point in our meditation where it makes sense to begin considering the roles that sex and gender have this inquiry. Although some other aspects or forms of human identity such as race and ethnicity might seem more obviously a part of these discussions, sex and gender absolutely run through them, for both empirical and social reasons. As has been shown in this discussion of mtDNA haplogroups, empirically determined facts, such as that the genetic code in the mitochondria of any given human cell is only passed down from the sex cell-ovum of the one parent, make possible it to discuss matrilineality in this way.

To begin briefly to consider some social reasons for the considering sex and gender herein, I will begin by sharing that for a good period of time I thought that the “mt” in this term was an abbreviation for “maternal,” and this was despite knowing that mtDNA is located in mitochondria. Of course, “maternal” and “mitochondrial” have their “m”s and “t”s located in the same positions in their sequence of letters, so that is part of it. And I might just chalk this up to the fact that “mt” and “maternal” are so frequently found alongside one another, but I do not think that either of these coincidences sufficiently explains the totality of this (repetitive) error in my comprehension and memory. In retrospect, it is my intuition that this was the case at least in part due to the tremendous influence sex and gender have on—if I can simply put it this way for now—all human discussions, including scientific ones.

Not only (biologically) sexed but also (socially) gendered terminology is highly present in many types of scientific discourse, as has been demonstrated many times and

in many ways by feminist philosophers of science and other feminist theorists whose analytical focus is scientific theory and practice. Following their leads, it is impossible not to notice that there are so many ways in which scientific theory, practice, teaching, and learning is embedded with gendered ideologies, in some ways quite obvious, in some quite subtle, and in others utterly disguised. To give few simple examples, it is easy to find depictions of eggs as passive beauties (fulfilling social tropes of femininity) and sperm as efficient aggressors (fulfilling social tropes of masculinity); and let's not even mention all of pink and blue color-coding (in diagrams of chromosomes the X and Y are frequently found following this schema). Even the phrase "daughter cells" to refer to two cells produced at the end of mitosis (cell replication process). And while some or all of these examples might seem harmless to some people, there are consequences of this gendering, again pointed out by feminist theorists, that would be considered consequential by many of those who might find the other points to be insignificant and harmless. In their application in the medical arts, for example, where there is a long history of determining diagnoses and treatment for women based not only upon their biological features but also their social roles.

Placing this discussion of sex and gender into the fuller context of human identity with its many aspects—and particularly idea of the descent of aspects of identity through generations—it is helpful to begin our consideration attempting to analyze in combination only two factors rather than trying to take in too much at once. Here we will consider gender in combination (or as it intersects with) nationality, an aspect of human social identity quite relevant to ancestry DNA testing. It is also expedient to consider the matter by utilizing as analytical instruments some terminologies available in languages

other than English; in this instance a language in which the term for nationality changes depending on gender (one of many). I was once corrected during a conversation, “No, colombiana,” a woman said to me, with unusual emphasis on the final “a.” I had referred to another woman as “colombiano.” I am not fluent in Spanish, and I have tried to learn to not be too hesitant in trying to speak just because I am uncertain of the grammar, or because I fear I might not get it quite right in the moment. At the same time, I know that some points of grammar are more important than others (in varying ways and differing among people), and the person with whom I was conversing (who I am sure disregarded my numerous other malformations of the language), in this case a woman, was showing me that she thought this distinction important and worth pointing out in conversation.

Hearing and seeing these words which describe nationality in gendered forms, it is easy to be inspired to (or rather, are we encouraged to?) consider the differing characteristics of those who are being referred to and grouped together in such a manner by each of these terms. Here, I do not mean to conflate the existence of the usage of a single term with the existence of a singular concept, but rather to draw analytical capacity from reflecting on these concepts in a different way, through a different language. And, in this living conversation, my companion interlocuter was drawing my attention to her consideration of the importance of the distinction.

What, following this and in this sense, do we think are the differing characteristics which differentiate colombianas (Colombian women) and colombianos (Colombian men)? What unites them in meaning? When we hear, read, or think of these conceptualizations, is the imagination that they motivate: exactly the same, just a little different, or vastly different? Put in the terminology of essences or being, is or how is

Columbian-ness in a woman different than Columbian-ness in a man? How is it the same? Is or how is the woman-ness in una colombiana different from the woman-ness in women who are not colombianas? Again, how is it the same? Less specifically, how are experiences of gender identity shaped by having or being of a particular national identity? Conversely, how are experiences of national identity shaped by having or being of a particular gender identity? How else might we think about these overlapping, interweaving, interdependent conceptualizations of identity?

As has been wonderfully emphasized in non-academic discourses, and as we have learned from the perceptive and influential theorization of Kimberlé Crenshaw, intersectionality is a theoretical approach which enables and encourages us consider all of these varieties of identity not independently as abstractions or essences which are separable from one another (e.g., woman-ness, Columbian-ness)—not to think about them as independent layers or components which build up to an entire identity—but rather to consider them as they exist in life with all their complexities, each influenced by the others, or rather utterly intertwined and interdependent in conceptual existence, possibilities of interpretation, and in the experience of life as it is lived. This also relates to other discourses not using the terminology of intersectionality but that engage with the same or similar problematics. Here I think in contemporary times of bell hooks and Angela Davis in whom I encountered this variety of thinking (or similar) before learning of Kimberlé Crenshaw's. Some of the theoretical outputs of these thinkers will be reviewed in the next chapter.

So rather than analyzing identity in any sort of essentialist mode, arguments against which will be described as present in the scholarship researched and as detectable

in or derivable from the artistic productions studied, we will fight this tendency and create our questions and have the analyses be inspired by conceptualization and phrasing from intersectionality, phenomenology and ideas about embodiment, among several other emphases (all described in Chapter Three as part of the literature review).

To bring our meditation for a moment into a mode that is focused on outcomes, we will turn to some historical evidence to make the point of the intersections even clearer. In the place, or rather the nation wherein I was born, reside, and in which I am categorized as a citizen, the Nationality Act of 1790³ was among the earliest of legislative acts of the United States Congress having to do with immigration. While I first encountered and highlighted this Act in my reading due to its language of “free white person,” while research about this Act with regards to the structural racism it displays, I became especially intrigued as I read onto what is in the last few lines of the Act—almost seeming like an afterthought: “*Provided*, that the right of citizenship shall not descend to person whose fathers have never been resident in the United States.” Without restating every detail of the act prior to this point, it might be summarized as generally allowing white persons who have lived in the United States for two years to be admitted as citizens and has a few other not-so-certain attributes such as “good character.” Following granting of citizenship, the children of these white persons too would also be considered citizens. Throughout the Act, as would be expected for the time, place, and authorship of this document, the pronoun “he” is used in an unsexed fashion to refer to any would-be citizen; however, it is not referring to males or men only but everyone in this instance, as

³ United States of America, Congress. "An Act to establish an [sic] uniform Rule of Naturalization," chap. III, sec. 1., 1790.

again can be inferred from the circumstances of the writing's production, but is also confirmed by the subsequent text which was quoted.

Putting all of this together, it is seen that it is the citizenship of white men and not white women which is meant to hold generationally; this is of course also meant to exclude any person regardless of sex or gender who was not considered white. Though a white woman could be granted citizenship based on the provisions of this Act, any child or children she might have would be citizen(s) by virtue of the Act if and only if their (white) father were a citizen. In contrast, the child or children of any white man granted citizenship based upon the provisions of the Act would be according to the Act citizens regardless of the citizenship of their (white) mother. It is the citizenship of the father, in this instance, and in the context of these racial definitions, which has greater legal weight and longevity. Of course, it might also be mentioned briefly here that who was recognized legally as a (legitimate) mother, a (legitimate) father, and a (legitimate) child had as much to do with marriage as claimed biological relations according to the laws of that place and time. This Act cited here is but one demonstrable instance of a legally tangible influence of gender on nationality. But we must slow this intersectional inquiry here, as the intention was to (try to) begin by looking at two aspects of human identity, gender and nationality, but we have already collided with race, marriage, and legitimacy as well.

Perhaps attempting this analysis in such a way and coming to this result only better demonstrates and supports the theoretical approach that stimulated it. Hopefully it has been demonstrated sufficiently that gender and nationality, at the very, very least, and in this sort of instance, cannot be considered in isolation from one another. To stretch the

analysis in terms of its historical breadth further, one can begin to imagine all the innumerable and varying sorts of intersections between conceptualizations of national (and ethnic, racial, linguistic, religious, and other forms of) identity and conceptualizations of gender (and sex, and sexuality, and other forms of) identity in the scope and scale of global human history, and even into the realm of myth. How many histories and other stories have we heard told of men going away to war and coming home with wives or other women with whom they planned to have children or had a child or children? How many stories about men going away to war, reproducing with women (who were often raped, or perhaps who took on complicated heterosexual relationships in difficult situations probably typically without what today can be described as informed, meaningful consent and a real, practical choice in the matter) in the place where they go to fight, conquer, and control, and going home without the children? How are the children resulting from these varying sorts of human reproductive acts counted in terms of their identifiers? When did gender carry the most import? When did nationality? When did current or prior geographic location? Other factors? Stated as a broad question having to do with relationships between ideas about descent and concepts of identity, in what ways does it matter that one ‘receives’ an aspect of their social identity from one or the other parent? What takes precedence, when, and what might we change in our conceptualization of the roles and laws in society as a whole as a result of these understandings?

As we come to close this scientific portion of our meditation and exposition—which was intended to introduce some crucial ideas from genetics that are a part of this

scientific-technological-industrial-personal-social movement, and to integrate some humanistic material along the way—it is helpful to recall what all we are attempting to take into our consideration of these matters. We began with a single human form and zoomed in progressively and with purpose until it was possible to ascertain some fundamental terms, concepts, and theories from genetic science in such a way that they are as connected to our experiential reality as is possible, but simultaneously we acknowledged the limitations of knowledge about the structure and functioning of these tiny objects-concepts through simple observation alone, that is, when theory must be applied for comprehension. Then, we turned our attention to two applications of this science to exemplify its utilization in DNA ancestry testing: the recording and tracking generationally of SNPs in order to determine a variety of ancestral groupings according to shared mutations of that kind; and, mtDNA (or maternal) haplogroups used in the determination of specifically maternal or ovum-to-ovum descent. Following this, in an attempt to integrate early on the complexities of analysis with regards to the intersections of conceptualizations of social identities, it has begun to be demonstrated how difficult it is to isolate any one aspect or form of human social identity in an accurate or meaningful way.

This brings to mind Simone de Beauvoir’s discussion and analysis of the phrase, “Tota mulier in utero” in the introduction to *The Second Sex*.⁴ Translated into English, “woman is a womb,” or perhaps more precisely but less elegantly, “[the] total woman [is] in [the] uterus,” or “all of woman is in the womb,” many of the sorts of issues

⁴ Beauvoir, Simone de. *The Second Sex (Le Deuxième Sexe)*. 1949. First American edition, Alfred A. Knopf, 2010.

that we have begun to get into here by thinking about mtDNA are addressed by de Beauvoir by thinking about and analyzing this phrase, including demonstrating the ubiquity of the concept-definition of woman that it points towards, also describing then-current discourses that pushed against it, and providing some additional problematics or lacks that may be found in it when stacked against any number of theoretical considerations and the actual life situations of women. It is hoped as de Beauvoir was able to demonstrate many of its problematics, herein I might be able to demonstrate the epistemological and ethical problematics (and perhaps also opportunities) involved in some of the conclusions drawn by ancestry DNA testing, including those to do with “maternal” haplogroups.

Before putting away the microscope, we harvest another small sample of our body from a completely different location, then try blood and saliva and any other somatic (non-gamete) cells that we can easily obtain; the results are all the same. The cells in the samples have great variations in their shapes and colors and many other features, but when we ultimately arrive at the nucleus of a cell, we find the same DNA sequences: our 23 chromosomes.

Now that we have clearly and firmly in mind what DNA is (in terms of its structures), what it does (in terms of its functions), and some of the things which can be done with scientific knowledge about it as part of genetic ancestry testing, we will return our awareness back to that single human form we envisioned previously. From that single human form, this time, instead of progressing in our meditation from the individual human towards the microscopic and the molecular, we will attempt to place our imagined

standpoint on trajectories that move outward in space to encompass more people and places, and backwards in time towards generations of humans who have long since passed away from our living sphere of existence. Our aim is to understand the ancestral components of the sciences which enable—and as we will eventually see, benefit from the information generated by—DTC genetic ancestry testing services.

So far, we have primarily focused our investigation through the lenses of the natural sciences, genetics in particular. Now we turn to some of those sciences which, while applying many of the principles and practices of the natural sciences, have a peculiarly human, and ancient, character: anthropology and archaeology.

Anthropology with its root in humanity (or at least man, “anthro”) perhaps most obviously fits this characterization. As I understand it, the aim of an anthropologist, a scientist of humanity, is to study that which makes us human as opposed to some other kind of being or thing or experience or idea, that is, to propose answers to the question: What is a human? Being a widely diverse discipline in terms of its methods and aims also, one of the core modes of thinking that appears to unify the discipline is its focus on understanding and analyzing humanity by searching into the distant past. This is accomplished through analyses of human artifacts of all different kinds and also the remains of human bodies.

Numerous discourses of anthropology have understandably burst onto the scene in response to the waves of genetic information and theory that have been made available (at least) since the beginning of the HGP. Highly visible for at least the last two decades in the scene of popular and public education media is Spencer Wells, who has specialties in both anthropology and genetics. I can only imagine how much such a mind would

whirl in the midst of these rising and intertwining movements in science and society. But I need not merely imagine too much, for Wells' presence is in my experience impossible to ignore within the midst of study in these arenas. The dramatic, beautifully-designed and produced documentaries in which he is a star, all the times he has been featured in scientific television series, his numerous interviews, his articles and books geared towards audiences of science enthusiasts, all seem to turn up in searches and references whether or not that is what one is seeking. The artwork that often accompanies or is incorporated in these are filled with bones, haplogroup maps, DNA spirals, and usually unnamed persons who have distinctly varying phenotypes. I think it is fair to say that Wells' perspective is probably very influential among many people who are deeply interested in these matters and seek to educate themselves on them, but are perhaps not specialists. And this is not to say Wells' work is not influential within anthropological and other scientific circles; from what I can tell from my position outside scientific disciplines, it is.

Kim TallBear, in *Native American DNA: Tribal Belonging and the False Promise of Genetic Science*,⁵ utilizes Wells' work to both to (I think) make more broadly appealing and relatable the work that that she is doing, but also (and certainly) to critique it. More particulars about her approach, arguments, and conclusions will be discussed in subsequent chapters; here may it suffice to state that the questioning and analyses presented in her scholarship on this subject ranges from who gets studied in genetic anthropological research, to how they are studied, to what the repercussions of this sort of

⁵ TallBear, Kim. *Native American DNA: Tribal Belonging and the False Promise of Genetic Science*. University of Minnesota Press, 2013.

research are, to critiquing the underlying patterns of social power within and among social groups that are manifest in the processes of this research and the data that it generates.

Archaeology, complementarily, also has its roots in humanity, but with the focus not so much on human being as on human creations, always seeking those things that were in the beginning, as the ancient past might be described. By examining the physical evidences left behind by humanity's presence over time, especially in prehistorical times, this mode of study provides much of the data (and theory, also) that anthropological scientists employ in their work to understand the nature of humanity. Archaeologists examine the big, obvious things, but also seek out those remnants that have become obscured under layers of earth and sea and ideologies. While the level of detail and context provided by archaeological science will (likely) not need to be considered too much in this research, the dependence of anthropological research and theory on this discipline (or subdiscipline, as it is sometimes categorized) as source of data and knowledge needed to be acknowledged at least this much.

The knowledge produced through archaeological and anthropological efforts becomes a part of DNA ancestry testing insofar as it is involved in the process of group determination. Some anthropological research and theory, such as that described here is enabled and spurred on by genetic research, and consequentially involves terms such as haplogroups and chromosomes. Other anthropological research and theory is used in genetics as applied in DTC genetic ancestry testing. The complexities of this disciplinary epistemological relationship must be held off on until we reach the analytical portion of this dissertation, but even in the literature review it will be seen that there have been

those who have been investigating and questioning this relationship for some time now, especially with regards to the manner in which DNA samples are grouped and regrouped along ancestral lines. Part of the questioning in the analyses will have to do with ascertaining to what degree or in what ways are these groupings determined by the code that is in DNA and that code alone, and in what ways these ancestral groupings might be or are also delineated from one another in part due to other sorts of knowledge, for example, knowledges about language, religion, art, architecture, political order, and so many other aspects of human cultures that are a part of social group and identity formation.

A few last historically and philosophically contextualizing elements will round out this consideration of discourses and ideas from the natural sciences. These elements I suspect will form portions and add aspects to the conceptualization of this movement ultimately arrived at in the conclusion of this dissertation. If we think about all that we have been considering here in the context of the history and philosophy of science, we might find that some of the patterns we are beginning to detect within this genetics-inspired movement are familiar. Indeed, as noted in the Introduction, concerns about this familiarity are part of what drove me to choose DTC DNA ancestry testing as a basis for the topic of my dissertation.

The familiarity I refer to here is not one of the uplifting, reminiscent variety. It is rather a sense of haunting echoing spiked with sometimes epiphanatic alarms. If we place the scientific endeavor of genetics within the historical context of the development of the varying natural sciences as we know them today, we might construe it as one of the many

branches among human quests for empirical knowledge that is difficult (or meaningless) to pinpoint as having a definitive starting point. At the same time, at least insofar as history is told in the West or the Global North (these pseudogeographic terms will invariably arise again later) these human empirical endeavors morphed into something that might be recognizable today as “science” during the period of European history so often referred to as the Enlightenment. (Arguing that this Enlightenment was neither enlightening nor beneficial to all falls outside the scope of this research; however, I will state here that I certainly and wholeheartedly agree with this attempt to decentralize institutional Western history away from its longstanding European, male, elite core. See, for example, the scholarship of Emmanuel Chukwudi Eze.⁶)

While it is not the aim of this dissertation to attempt a historiography of science leading up to the development of genetics, it does seem important to at least place it within such a context. Though a simplified version of history might point to science as being on a direct course from innocent ignorance to verifiable truth, the story is so much more complicated. To cut to the core of this issue, the question is this, does genetics follow the patterns of racialization and racism, gendering and sexism, nationalism and colonialism, that many of its predecessor sciences did? Biology, especially in its applications in the practice of medicine, although it is certainly not exclusive in this regard, carries with it markedly among the sciences inscriptions of social ideas about humanity. And among those social inscriptions are ideologies that have caused some of

⁶ See, for example, Eze, Emmanuel Chukwudi. “Introduction.” *Race and the Enlightenment: A Reader*, edited by Emmanuel Chukwudi Eze, Blackwell, 1997, pp. 1–9; and, “The Color of Reason: The Idea of ‘Race’ in Kant’s Anthropology.” *Anthropology and the German Enlightenment: Perspectives on Humanity*, Lewisburg, Pa.: Bucknell University Press; London: Associated University Presses, 1995.

the most devastating and persistent abuses of human beings according to what we now call their various (or intersecting) social identities.

The theoretical insights from the social sciences encountered in this research deal with this critical issue in a variety of ways, and particularly with regards to genetics and race. The overall concern has to do with what can (and I think, should) be termed scientific racism. Scientific racism, as discussed in the Introduction, is a way to the variety of ways that scientific theory and practice has been influenced by social ideologies about race over time. These social ideologies are of course not neutral in their racializations (assigning people to various racial groups), but rather always assign those groups rankings in order of their goodness and value, with white or Caucasian or the comparable terms of the day always at the top. So, when those study human bones began to break them up into groups according to (seemingly empirical) types, according to this idea of genetic racism their determinations had to do not only with the empirically verifiable properties of the bones, but also those ideas which those scientists already had in their minds about what bones should be more alike to one another, and that this did have to do with their ideas of race.

Has this kind of thinking passed on into the present, or is this just a history lesson with no contemporarily applicable value? Much social scientific research and argumentation, the details of which will be addressed in the literature review, affirms resoundingly that, yes, this scientific racism is present, and that they can detect its presence strongly in today's genetic theories about race (such as those applied in DTC

DNA ancestry testing). Duana Fullwiley, for example, describes this as the “molecularization of race,”⁷ and other social scientists offer similar descriptions. The theories from the interdisciplinary humanities applied in the subsequent analyses, especially from the philosophy of science, also address this issue but not so much directly as it pertains to genetics as to the more longstanding scientific discourses of which it is a part. In confronting and debating the traditions of scientific practice and theory which cause it to be proclaimed impervious to having its conclusions affected by social factors, feminist philosophers of science especially have provided us with much to make evident the intrinsic sociality or social-ness of science. An example of this can be found in Helen E. Longino’s *Science as Social Knowledge* wherein the chapter on research on sex differences is especially helpful as an analytical tool.⁸ More broadly it is stated here that Longino’s overarching argument that science is social knowledge is one that has long been on my mind and certainly shapes my thinking considerably. Some theoretical insights into this problematic, as well as others from the philosophy of science and other arenas of humanistic inquiry, will be described in the literature review in the next chapter.

It has been taken as established in the course of this research that these arguments are correct; that science cannot and should not be understood as anything but a social practice, imbued and created by all that social-ness. What truths there are to be obtained in its practice are not absolute and cannot be outside of what is human. And genetics, like

⁷ Fullwiley, Duana. “The Molecularization of Race: Institutionalizing Human Difference in Pharmacogenetics Practice.” *Science as Culture*, vol. 16, no. 1, Mar. 2007, pp. 1–30.

⁸ Longino, Helen E. *Science as Social Knowledge: Values and Objectivity in Scientific Inquiry*. Princeton University Press, 1990.

all sciences, and as will be discussed and argued for throughout this dissertation, is likewise not impervious to social influences; it does not stand outside of society but rather is a part of it.

Now that we have completed (what we can here of) our overview and consideration of some of the central scientific ideas and vocabulary employed in DTC genetic ancestry testing—especially from genetics, anthropology, and archaeology, and as referred to in subsequent chapters—we will continue the effort to establish the mutual foundations in conceptualizations and terminologies necessary for executing and communicating this research project. It is now time to turn to technological matters. This exposition will be much shorter than the scientific one, as each technology in turn will be explained as the need arises in the analytical portions of this dissertation.

The technologies utilized in DTC DNA ancestry testing are (of course!) numerous and diverse. Each (if they may even be counted as existing separately from one another) is not only dependent upon the accuracy and precision of the empirical knowledge gained from the scientific discourses from which it sprang, but also upon one another.

Throughout this research the focus has remained on considering those technologies which are either unique to genetic ancestry testing or especially key in its operations as a distinguishable scientific-technological-industrial-personal-social movement. There does not need to be, for example, an examination of the technologies involved in the delivery of parcels, or everything that is involved in the operation of this great network of communication called the internet, but of course each of these must

have been in place, and continue to be in place (or replaced in its role), if the technological component of this movement is to remain in place and keep it running.

Therefore, each technology (or each aspect of a technology) as it is required in a particular analysis will be explained rather than attempting to relay all of this sort of information upfront. It is hoped that through this process a more encompassing and integrative understanding of the technological aspects of this movement will steadily arise. Most of explanation required will be about the varieties of laboratory tests utilized, DNA sequencing and analysis technologies, and the different kinds of computer databases in which all of this genetic information is stored and computer programming by which it is continually processed.

To give one example here of the crucial role understanding technological factors can play in a critique of DTC DNA ancestry testing a brief mention of databases will be made now. In our biological meditation earlier, when we came to focus our attention on the molecular, the greatest level of detail we arrived at was genetic code itself—the As, Ts, Cs, and Gs representing the various nucleotides. Ascertaining these sequences of letters, or usually rather certain stretches of them, is accomplished through the application of genetic sequencing technology and laboratory procedures. The data generated through these procedures is stored in computer databases. Now, it might seem that this process of storing sequences of code would be a neutral one; that is where our questioning begins. In a database there are fields (similar to column in a table; analogically a column name is to a table as a field name is to a database, but databases contain multiple tables), which are a means of organizing data into varying types. Every bit of data stored in a database has a field with which it is associated (that it is, categorically, inside of). In the case of DNA

ancestry testing, some of these filed names include terms for human identities such as Luo, Scandinavian, Ashkenazi Jewish, and Native American. These are the sorts of identities being analyzed herein, and therefore this level of detail does become at times quite relevant. As with much of the other scientifically detailed research utilized in the analyses in the project, the research pointing to these databases as significant is from the social sciences.

Having begun the process of incorporating technological considerations into this research project, it is now industry's turn. This exposition flows easily from the technological as of course it is human activities, institutions, and ideas that can be described as commercial, financial, and industrial that bring these technologies into reality. As with the technological, rather than attempting to consider all that might be taken to be a part of the economies that surround DTC DNA ancestry testing, our focus will be on that which is unique, or particularly important, in its realization.

For one, we may think of the companies that created or hold the rights to aforementioned proprietary technologies such as database structures (among which there are several prominent competitors). But first and foremost, and for the purposes of containing this research to manageable bounds, there are the DTC DNA ancestry testing services and the companies which provide them.

Three of the most prominent services discussed in the discourses researched for this project are those provided by 23andMe, AfricanAncestry, and AncestryDNA. Here will be laid out a description of those three services' specialties, some of the key people and organizations that have driven the provision of these services, and some financial

considerations. Some comparisons among the three will also be drawn. Here I will not try to describe these services exhaustively, but rather to highlight some of their attributes that will become relevant as the analyses proceed.

Numerous other services of this variety are available and will be discussed as they become pertinent in analyses of particular cases. Some other services well-known in the market in the United States include Family Tree DNA, HomeDNA, LivingDNA, MyHeritage, MyTrueAncestry, and NebulaGenomics. Some services that are more prominent in other markets throughout the world will be discussed in a subsequent sections.

All of these services provide estimates labeled “ethnicity” or “admixture” or related terminology in their genetics reports to consumers. These particular labels will be critiqued in the analytical section as they are highly relevant to this inquiry, especially in the many ways that they are and can be interpreted.

23andMe, Inc. was formed in 2006 and became the first company to sell and process an autosomal DTC genetic ancestry in 2007. An autosomal genetic ancestry test differs from an mtDNA or Y-chromosome DNA tests in that incorporates genetic information from (select portions of) all 23 chromosomes inside the nucleus of the cell. A typical consumer’s experience was described in the Introduction. 23andMe offers a variety of bundled genetic testing services which result in reports to test-takers that include ancestry, health, and other genetic “traits.” Today the title of the homepage is

“DNA Genetic Testing For Health, Ancestry And More - 23andMe.”⁹ The current, undiscounted costs of their bundled services range from \$99 to \$228 in US currency. The least expensive of these services, the “Ancestry + Traits” service, provides the sort of information being researched in this project. The most expensive service includes extensive health outcome probability-prediction reports that are beyond the scope of this research, including pharmacogenetics reports, which aim to give consumers information about which pharmaceutical medications are most suited to their genetic make-up. (Pharmacogenetics and pharmacogenomics are names for the scientific practices and theories which underlie what is sometimes marketed as “personalized medicine,” “precision medicine,” or similar; it has been claimed in many headlines to be at the center of what will be a revolution in medicine.). It is notable, however, that all versions of 23andMe’s bundled services include the “ancestry” and “traits” components. Though a significant portion of their marketing focuses on health (and the positive experiences of seeking health) rather than ancestry (today’s homepage featured headline is “Your personal health experience starts with meaningful info from your DNA,” followed by “Shop now”), it appears assumed in their approach that everyone who purchases any of their services is desiring or at least content to receive the ancestry information. And this is not to say that they don’t heartily promote the ancestral component of their services. A summary of their services places it upfront and claims eminence, “23andMe offers DNA testing with the most comprehensive ancestry breakdown, personalized health insights

⁹ 23andMe. DNA Genetic Testing For Health, Ancestry And More - 23andMe. <https://www.23andme.com/>. Accessed 12 Feb. 2022.

and more." In the FAQs one might read that these ancestry “breakdown[s]” are determined in part through their “patented Genetic Communities™ technology.”

The look of the 23andMe website is sleek—the most so of all the DTC DNA ancestry testing company websites that I can recall ever perusing—if sleekness is defined by having the fewest number of words “above the fold,” the most simply layered graphics and photography, and a highly limited color palette with few subtle variations. The branding of 23andMe’s other online and physical presences matches this aesthetic. By comparison, the marketing and product aesthetics of the two other services being surveyed here (AfricanAncestry and AncestryDNA) are significantly more multifaceted, and are targeted to much smaller, more specific, audiences.

The central human figure in the corporation of 23andMe is Anne Wojcicki, who has been CEO of the company since it was founded along with Linda Avey and Paul Cusenza in 2006. Wojcicki’s undergraduate degree is in biology and her work background prior to 23andMe is largely health care investment-related. Some prominent financial relationships of the company and its leaders show (what is likely) a tiny fraction of its interconnectedness with other major industries. The pharmaceutical company GlaxoSmithKline made an initial \$300 million dollar investment in the company. Anne Wojcicki’s sister, Susan Wojcicki, is the CEO of YouTube. Anne Wojcicki was the long-time spouse of Facebook (now Meta) cofounder Sergey Brin. There is not space within the bounds of this project to examine all of these and other such relations, nonetheless it does seem important to note that there is a close web of relationships among these leaders and institutions in data-intensive industries.

African Ancestry, Inc. is a company more specialized in its approach than 23andMe and many of its competitors. In terms of their consumer audience and company identity, it is stated, “By Black People, For Black People.”¹⁰ Their focus, as their corporate name indicates, is on tracing African lineages, and most specifically their target audience is African Americans in the United States. Unlike both 23andMe and AncestryDNA, their tests are of single-line lineages (in a family tree) following either certain markers in the mtDNA (mitochondrial DNA, maternal) genetic code or certain markers in the Y-chromosome (paternal) genetic code. Their logo is two As partially entwined into the double helix of DNA, and the look of their marketing and interfaces is a bit more subtle and complex than 23andMe’s super-streamlined look. African Ancestry’s branding features bold colors: deep and bright shades of purple are prominent with highlights of burnt orange and golden yellow. The graphics are clean and active; the photography has deep focus and is celebratory.

Their services appear to allow for higher market prices than the other two services being considered now. Their service packages currently range in undiscounted cost from \$299 to \$793. At the lower price level, consumers with a Y-chromosome (most often men) can choose from either their “MatriClan” or “PatriClan” test options to test their own DNA; consumers with no Y-chromosome (most often women) may only choose the MatriClan option, as the PatriClan is a Y-chromosome test. Those with no Y-chromosome are encouraged to, if they would like to know their PatriClan results to have

¹⁰ “African Ancestry – Trace Your DNA. Find Your Roots. Today.” African Ancestry, <https://africanancestry.com/>. Accessed 13 Feb. 2022.

a living relative in the same paternal (Y-chromosome) line who has a Y-chromosome take the test to know their results. The highest priced option includes both tests.

The company's primary consumer audience being much narrower than that previously discussed, this is a helpful point to begin considering who it is that is interested in taking a genetic ancestry test in the first place, what kind of information they are seeking, and for what reasons. The popularity of the services of African Ancestry is one good and important indicator in answering these questions, and much can be derived from looking at their advertising and the nature of the services they provide.

Looking at two portions of text from their marketing is helpful in discerning this. The first of these two, "African Ancestry helps people of African descent trace their ancestral roots back to a specific present-day African country and tribe/ethnic group," might help in understanding (at least from the company's perspective) the goals of their customers and potential customers in terms of the kinds of data that they are looking for, that is, quite specific (perhaps as specific as possible) information about their ethnicity in terms of its relation to those living in Africa today in terms of country and tribe.

Now, it might be asked, why information generated in relation to the present instead of the past, if it is that aspect of current-day identity that is spawned from the past that one is seeking when taking such a test? The answer in this case, I suspect, has not so much to do with what consumers are seeking as what information is available. The details of this will not be discussed here as they will come up in the review of the social scientific literature, but as might be imagined it is far easier to obtain adequate lots of DNA samples from living humans than from the scattered remains of those who lived in

the distant past (archaeological evidence is an aim in ancestry DNA science, but one that is comparatively only very partially realized).

Another passage from African Ancestry's current primary sales pitch today is, "Knowing where you're from is a critical component of knowing who you are. Find those missing pieces of your identity with this transformative and powerful experience," followed by "SHOP NOW." This helps us understand another critical aspect of African Ancestry's audience which is critical and important to this discourse and to life.

Compared with others living in the United States, especially white Americans, and perhaps all other social groups living in the United States, it is African Americans, Black Americans, at least those desiring to trace such ancestries and with the time and means to do so, who have the greatest difficulty in obtaining this information through public records and other verifiable means. Although oral histories are sometimes available, along with certain amounts of private and family records, for the most part it is not possible to verify family trees and other genealogical information through public documentation, and even more difficult to try to ascertain with any certainty origins reaching back to the African continent. This is of course due to the great genealogical and genetic shift of epoch-making and people-defining proportions caused by the human monstrosity of stealing away human beings from their homelands, liberties, health, and life to service the capital of Western elite and the political foundations, in so many ways, of the United States, and the privileged lives that so many, especially white Americans, live in it. Here again we must abbreviate this discussion, as the focus is on the corporate aspects of this movement, and this is analyzed in a latter portion of the dissertation where motivations and ramifications of the anti-racist variety are discussed.

African Ancestry’s cofounders and current-day leaders are Gina Paige (President), and Rick Kittles (Scientific Director). In the social scientific literature Alondra Nelson¹¹ and Dorothy Roberts¹² offer significant analyses of African Ancestry’s practices since its founding in 2003, the works of which are both a part of the upcoming literature review. “African Ancestry – Trace Your DNA. Find Your Roots. Today.”

AncestryDNA, like African Ancestry, is a more specialized service in its appeal than 23andMe, but at the same time simultaneously part of a broader platform. It evolved as a service of the corporation named simply “Ancestry, Inc.,” which still exists today. Ancestry was formed out of a conglomeration of many companies and sets of genealogical databases through the 1990s, beginning with sets of records from Latter-day Saints publications. It is interesting to note the partially religious practice-inspired aspect of the foundations of this service

Ancestry started its online presence with Ancestry.com in 1997. Today its main website’s homepage features the title, “Ancestry® Genealogy, Family Trees & Family History Records”¹³ Prior to beginning to include genetics testing as a component in their service offerings, Ancestry.com was a digital space mostly occupied by genealogical records and family trees created by users; there was (and is) a great deal of inter-consumer interaction in this space and related social media spaces, with sharing and

¹¹ See, for example, Nelson, Alondra. *The Social Life of DNA: Race, Reparations, and Reconciliation after the Genome*. Beacon Press, 2016.

¹² See, for example, Roberts, Dorothy E. *Fatal Invention: How Science, Politics, and Big Business Re-Create Race in the Twenty-First Century*. New Press, 2011.

¹³ Ancestry® | Genealogy, Family Trees & Family History Records. <https://www.ancestry.com/>. Accessed 14 Feb. 2022.

discussing the results of mostly familial genealogical research being the principal activity.

As DTC DNA testing technologies became available and genetic testing was added as one of their services, AncestryDNA was born. Today the AncestryDNA website's main page is titled, "AncestryDNA® DNA Tests for Ethnicity & Genealogy DNA Test."¹⁴ It is clear from this and many of the other advertising texts and graphics generated by the company that the focus on the AncestryDNA platform is ethnicity and currently living familial relations. They currently offer two options for purchasers. The lesser priced option costs "Only \$119 – Buy now" and includes the "AncestryDNA" service alone. Similar to 23andMe, the option priced higher, in this instance at "Only \$119 – Buy now," includes a component labeled "Traits." Combined with the Ancestry platform's emphasis on genealogy, this creates a potential user experience (for those customers who use both Ancestry and AncestryDNA) that incorporates ideas about what is family, past and present, interwoven with concepts of what ethnicity is and means. This is confirmed in their phrasing, "From your origins in over 1,500 regions to the most connections to living relatives, no other DNA test delivers such a unique, interactive experience."

The Ancestry (ancestry.com) entry point features a color palette of earthy dark browns in the background with soothing blues and greens highlighting certain important graphics and text, and many layers of sepia-toned photography. While complimentary, the AncestryDNA (ancestry.com/dna) landing page is distinctly different; it is packed

¹⁴ AncestryDNA® | DNA Tests for Ethnicity & Genealogy DNA Test. <https://www.ancestry.com/dna/>. Accessed 14 Feb. 2022.

with geographic maps of the world. A subtle black and dark grey global map fills the entire background of the principal sales pitch. Just below are a variety colorful maps alongside portraits of smiling people who have recently learned more about their “ancestors’ journeys over time.”

So, given this potentially very complex user experience of data—about genetics, about family, about ethnicity—how might we think of some of the generalized objectives or aims of an Ancestry-AncestryDNA user (or user of a similar service)? In this I aim not to oversimplify—it is certainly and inherently true that there are wide variety of reasons that people wish to engage these services (which will be examined in the analyses of individual cases)—but to attempt at this point in the exhibition of this movement to continue to gather ideas about the personal and social motives involved. Also, although I do not want to fall prey to taking any corporate advertising text as truth, I am generally of the persuasion that advertisers who work for commercially successful companies likely know what they are doing and know their audience quite well (that they do indeed have their fingers on the pulses of certain important trends or movements in society), thus, in part, the success of the companies. So again, we can look to some of the text generated by AncestryDNA to see what it is at least that they think their customers want to achieve in using their service.

“Connect with your people in new ways.” Every word in this condensed statement carries meaning. “Connect with” points towards what seems to me a core aspect of this movement overall and for everyone (as much as anything can be said for everyone). Who does not want to connect? And if they don’t, why would they use such a service? “Your people” gives a more colloquial spin to the terms “ethnicity” and “family” which are used

repetitively in the site's texts; the possessive "Your" connecting it to the individual user's place within that identity. And then, the "in new ways." "New" is also used repetitively throughout AncestryDNA's marketing and information texts. Another example may be found in, "Millions of people have uncovered something new. You can too." Genetic data is course exciting, new information, to humanity at large, but that doesn't seem so important in these presentations. What is important is the experience of finding "New" information about "You."

23andMe, African Ancestry, and Ancestry/AncestryDNA are the same in that they use the terminology of ethnicity as a central part of their conveyance of genetic data to consumers. (This is specifically important in this research; what is called "ethnicity" is one of the central forms or aspects of human identity of which greater understanding is being sought.) That is not to say that these three services use the terminology in exactly the same way; the similarities and differences in their and other companies' usage of that terminology and others will be displayed through the course of the upcoming analyses of individual cases.

Another characteristic, perhaps equally important, that appears to unite all three of these companies, as derived from the wording of their own marketing, is that they are selling "experiences" as much as they are selling (genetic) information. These experiences, one would think and hope, and one might derive from the smiling faces and glowing recommendations, should be on the whole positive. This points towards one important aspect of the analysis of this movement. Are these activities or these experiences, on the whole, positive? Or rather in what ways are they positive, negative, or

should be described in neither of these ways? What are the epistemologies and the ethics involved?

The next stage of this project, in Chapter Two, contains the statement of research methodology and the social scientific and humanistic literature reviews. There is just one final but hugely important task to complete before entering this next stage. This task is to make an effort to place DTC DNA ancestry testing into more global perspective; this is an effort in which there surely will be failures and omissions, but nonetheless the effort put forth must be as good as is possible.

So far in this exposition of this movement—especially the presentation of some of the industrial elements involved (the three testing companies surveyed are all US in origin with largely US-based audiences)—the focus has been largely on the United States. This is for several reasons. Firstly, and foremost of which, is that I live in the United States and I have always lived in the United States. I do not pretend to escape this position and associated perspectives (along with many other positions and perspectives), no matter how many other positions and perspectives I aim incorporate into my analyses, and ultimately into my understanding of this movement. Secondly, in the social scientific literature that I read as a part of research the companies and services given the greatest attention were US in origin. This is undoubtedly in part due to my reading literature in almost entirely in English and largely within the framework of US academia (this will be discussed in Chapter Two), but I am certain is also due to the especial popularity of DNA ancestry testing in the US. And thirdly, because there must be some bounds for this research, and it makes sense, at least in part, to focus on those things which I know best

(though always stretching and aiming to comprehend others as best I can) and subsequently arenas in which I might have the best hope of making a positive contribution.

All of that stated as context, there is as a part of this research's approach and method a determined, integrated effort to continually consider whatever the case at hand may be in terms of global societal considerations in addition to analyzing the individualized, personal concepts (ethical and knowledge-oriented) involved for the test-taker or their more immediate communities. There must be in the methodology of research such as this a continual alternation among concepts as they are situated within various spheres of (conceptual) existence from the personal, through various social groupings such as family and nation, to the world of humanity. The works of many philosophers and other scholars are used to guide and inform this conceptual alternation from the individual to the larger group. These will be reviewed in the next chapter. It almost might have been noticed that at the very outset of this dissertation in the listing of various example narratives, intention was placed on choosing narratives or personal cases which carry deep meaning for the individual test-taker and also considerable meaning for broader communities of people, and the world. I do my best to keep all of this in mind, while acknowledging my perspectival and other limitations.

Among the aforementioned reasons given for some of the US-focus of this research rises a question that is helpful to consider at this juncture, in order to have in mind a specific consideration of the global scale of concepts that must be involved in an analysis of this movement. Why is it that DTC DNA ancestry testing is so much more popular (and made available) in some places, such as in the United States, than in others?

Why are these services more popular among certain persons and social groups more so than others, even within such geographic designations? Why is there so much more velocity within this movement in some places and among some groups of people more so than others?

A short (and partial) answer to this question, and a terminology that has not been used since early on this writing, is: Colonization and colonialism—along with a host of other ideas that point to terrestrial-scale historical forces which have shaped and continue to shape or create human identities over time. The history of colonialism and capitalism, and incorporated racialization and racism, sexism, gendered and sexualized violence, religious discrimination, and nationalism, and the terrible list goes on, has drawn and redrawn lines on the maps of the world that are an intimate and intricate part of DTC DNA ancestry testing results and also the interpretation of those results.

Global scale forces such as these have caused it to be such that it is far easier for certain persons advantaged in these schemes to have knowledge of their familial and cultural histories than other disadvantaged in the social hierarchies. In the United States this is the case for most African Americans, as was previously described in brief, and also indigenous persons from many different groups and nations whose histories have been profoundly altered by genocide, forced labor, and forced adoption of culture, and also innumerable other groups, for example the mass forced labor of Asians and Asian Americans and others in the western portions of the continent as the national boundaries were pushed and pushed in that direction. For everyone who lives in patriarchal-patrilineal cultures wherein their maternal heritages are obscured or erased, with familial names and symbols typically being inherited through one paternal line only; and, so often

for married women specifically, so many names and other social identifiers being dissolved into the bonds of (so-called) matrimony. For so many people the disruptions in their familial and cultural (including linguistic and religious, and other aspects of) stories are so massive that it is not possible to piece them together through genealogical and other document and artifact-based research. It seems given all of these grave and foreboding considerations a scientific and technological marvel that it is now possible, possibly, to uncover aspects of these histories from a relatively simple code that was once completely hidden from any human knowledge, in each of these tiny bits of our physical selves called “cells.”

And yet, and this should not be understated, among all of these forces of human oppression, violence, disregard, and dehumanization, are also those aspects of identity which are created from personal and group-focused pride, cultural richness and shared achievements, resistances to oppression, and self-determinations of uncountable kinds. Postcolonial scholarship of all kinds, and scholarship from many socially critical sources, instructs on both the negative-oppressed and the positive-resistant-and-creative aspects of identifiers in part delineated by these processes of colonization, racialization, exoticization, and other usages of humans without regards to their personhood and as means alone. Following this, it is not meant to be predetermined or presumed here that the sources of human identity being discussed herein are either all uplifting or all oppressive, but to see how all of this is interwoven, and to do so by looking at this global (and globally significant) movement that has to do with our greater knowledge of our bodily composition on a molecular level.

We have hopefully now engaged our minds sufficiently in thinking about DTC DNA ancestry testing in terms of its scientific, technological, and industrial aspects. Furthermore, we have asked many questions about it, and have begun to incorporate just a handful of scholarly theoretical sources into our possible ways of comprehending this scientific-technological-industrial-personal-social movement.

It is now possible to emerge fully from this necessary passageway of exposition into what is at the core of this research and contemplation, which is to take these considerations of science, technology, and industry, and apply them to ideas about human identity, both individual-personal and communal-social, and do so within epistemological and ethical frameworks. These analyses will take place in Chapter Three, and following that central chapter there are reflections and arguments about the political and philosophical impacts and other conclusions.

But first, before getting into any of that, we must continue to ask questions and to gather more scholarly resources (both from the humanities and from the social sciences).

So far in this dissertation, there have been scattered throughout a baker's dozen or so series of questions. These series of questions—these examples of questioning in this arena—have been aimed to display some of the breadth and depth of this movement, and the relay the importance of engaging in critiques of it (now). Some of these questions have had to do with: identities and identifiers of nationality and gender and their interrelationships; concepts of race, racialization, and racism; the history of specifically scientific racisms, and questions about present-day scientific practices that echo this history; the nature or idea of categorization, broadly construed (how our sometimes-

chaotic perceptions and experiences are ordered through conceptualizations); whether these experiences (of taking and getting the results of DTC DNA ancestry tests) are on the whole positive, negative, or should be considered in other (more complex) ways, and how. Taking in as many of these factors and considerations as possible, what are the epistemologies and ethics involved? Who am “I”?; Who are “we”?; and, Who are “they”? in these contexts?

To begin at a starting point, what makes us human as opposed to some other kind of being? What characteristics or traits (or essences) are required? What do we perceive and feel in ourselves as members of certain human groups that cause us to identify “us” and “them” in these various contexts of identity?

What cognitive processes that lead to these differentiations are the result of or are sourced from the senses alone? What are the phenotypes (not just visual)? What do we consider necessary to call someone or ourselves a member of [x] social group? What do we consider necessary to say someone has x identity? How does this vary based on the kind or variety or type of identity? Let us consider here just a sampling: sex, gender, sexuality, race, ethnicity, religion, nationality, citizenship, geographic origin, marital status, domestic status, familial status, language, dialect, accent, age, ability, education, profession, socioeconomic status, immigration status, carceral status, indigeneity, and diasporic membership?

Following, why do these various group distinctions and associated identities exist and persist? Are they true and helpful, or false and harmful? Does it simply (or not so simply) depend on the situation?

Subsequently, to focus in on our exact purposes here, what does DNA have and have not to do with some or all of the above categories of identities and others? Take race as a critical example. In the context in which I live in what is frequently termed “the South” in the United States, to be deemed and understood as Black historically the basic requirement is having African lineage-ancestry, in tandem with necessary requirement of no (“one drop rule”) or very limited (unperceivable to institutional forces, “passing”) African lineage in order to be considered white. All DTC ancestry testing services include the African continent (or African genetic lineage) and various subcategories within it as among the possible outcomes in reports to consumers. How do these percentages of African ancestry (or certain African ancestries) relate to conceptions of what it means to be Black or be identified as Black? Be white? Do these percentages, these quantifications, really relate or describe or qualify in meaningful ways the complex fabrics of social identities and their embodiments in individual persons? And so forth the seemingly never-ending story goes in its pain and uplift. Perhaps we can find some intellectually fascinating and morally important understandings among these complexities through our reviews and analyses.

In one sense it seems we understand identity so well; in another it continues to elude us. I would think that everyone at some point in their life has said that a certain person is not x . In that negation we appear simultaneously to affirm that we know the definition of $[x]$, that we can define that category of identity. Yet, if asked to define it, who can give a short and quick answer, even to categories of identity applied to oneself? I cannot.

The goal herein is to consider, as best as possible, what it means to consider DTC DNA ancestry testing as an important and intense movement in ideas and actions among humans that has (at least) all five of these aspects and components: science, technology, industry, individual person (or personhood), and society. What are the epistemological and ethical systems we might perceive in this movement? To cite just one particular example, we might consider AncestryDNA's "Genetic Communities™." What groups of human identity are included in and match these "Genetic Communities™"? Which are excluded (or don't match)? Are these delineations of communities adequately and appropriately representative of our knowledges and ethics about community identities? If so, how? If not, how not, and what ought we think about and do as a consequence of our critiques? In sum, what are the problematics and the possibilities of the movement?

"Science" is often used as a near-synonym for truth. And not just any truth, but a truth that is beyond human affairs, unchanging, and infallible. The power of scientific ideas and scientifically-enabled creations, technology, is everywhere. To even begin to count the number of scientific-technological devices that are supporting this endeavor I'm undertaking right now would be an epically monstrous job. This efficiency of science, its many tangible, usable ideas which are verified through its applications, make it highly epistemologically persuasive as a good, or even the best, source of knowledge. It has such widespread social acceptance (even among those who rebuke aspects of it).

In what follows, I will not try to argue that science is not or cannot be a good source of knowledge, but rather that it is not unlimited but limited, not singular but plural, not infallible but human and social, and not unchanging but rather almost the definition

of change. Science, I agree and affirm in my research, can tell us much. But what can it? What can it not? In particular, what can our DNA tell us and not? Does DNA science really hold the key to understanding how it is that humanity passes its most important traits and characteristics—our many interrelating identities—from generation to generation?

CHAPTER TWO

MODES OF CATEGORIZATION-CONCEPTUALIZATION: DNA AND IDENTITY IN THE HUMANITIES AND THE SOCIAL SCIENCES

The theoretical insights available to us from humanist and artist thinkers past and present, combined with those generated by social scientific researcher-theorists, are what create the field into which we now enter, prepared to ready the ground for the upcoming analyses of others' and our own understandings, affirmations and misgivings, about human identity from the perspective of the individual and in its many collective forms or aspects. This chapter is focused on relaying the methodology of this research project and communicating a review of the literature studied from the social sciences and from the humanities.

The theories presented in the literature studied, or particular conceptualizations that form parts or aspects of the literature's theoretical and critical contents, will be considered as sources for developing helpful modes for the analyses of the individual-personal narratives-cases undertaken in Chapter Three. By *modes*, it is meant modes of cognition, specifically modes of conceptualization, that will enable us to better and more finely analyze this scientific-technological-industrial-personal-social movement, especially in terms of its inherent or present epistemologies and ethics. Some varieties of these modes that are already suspected to be necessary components of the forthcoming analytical endeavors are those to do with categorization broadly construed, and those to

do with what human identity is and/or how it is meaningful and significant. By *developing helpful modes*, it is meant that rather than aiming to summarize or describe the theorists' conceptualizations as might be good for encyclopedic or intellectual-biographic purposes, the defined purpose will be to find those aspects or constituent parts of their theorizations that will help to orient us and give us the needed conceptual tools (methods) to do the specific sort of analyses being undertaken in this dissertation. In short form, the goal is to keep closely in mind the subject (movement) at hand, in as many of its parts and aspects as possible, while surveying the literature.

Now—before proceeding into further discussion of research methodology, and then immediately into the literature review—it is helpful once more to emphasize in review and in brief some of the many momentous, historic contexts in which this seeking of modes (theoretical-conceptual insights and methods) is occurring.

Thinking in terms of the history and philosophy of science within a Western context, and within a global context, it cannot be said with accuracy that Aristotle was the first to initiate a reflective or metaphysical conversation about categorization. What comes to mind especially are the numerous human mythologies from cultures around the world about cosmological and existential origins. In these mythologies so often the pointing out and naming the constituent parts of the world-universe is an important component and symbol not only of origins but of ongoing human affairs. That said, when it comes to how Western philosophy in particular is so often taught, and therefore

understood, it is Aristotle's *Categories*¹⁵ that launches the curriculum. Also affirmed, however, is that the Aristotelian ideas and ideals contained within *Categories*, and incorporated throughout Aristotle's works about how to divvy up the world, whether through direct cause and effect or through its historicity's amalgamation of a variety of possible human ways of thinking about categorization into one personage's oeuvre, have had powerful effects through the threads of, especially Western, intellectual history up through to the development of the contemporary sciences, including our focus here, genetics. Regardless of origin, these conceptualizations (or perhaps rather, this modality of conceptualization) are (is) crucial.

Charles Darwin, thinking over two millennia after Aristotle, certainly inherited or was surrounded and infused by many aspects of these Western intellectual traditions about categorization. Again, not pointing to Darwin's work alone—his was but one step in a series of human endeavors to understand the world in an empirical way, dependent on the work done before his own, and dependent on the work that came after in its recognition (and epistemological interdependence) that now makes him so notable as to be impossible to ignore in this dissertation about human groupings—but looking to it as a principal example and symbol of a change in cognition toward the evolutionary in biological thinking.¹⁶

¹⁵ Aristotle. "Categories." *The Complete Works of Aristotle: The Revised Oxford Translation*, Princeton University Press, 1984, pp. 3–24.

¹⁶ See, for example, Darwin, Charles. *On the Origin of Species by Means of Natural Selection, or The Preservation of Favoured Races in the Struggle for Life*. D. Appleton and company, 1860; *The Descent of Man and Selection in Relation to Sex*. 1871. 2d ed., rev. augm., D. Appleton, 1902 (note the full titles of these two volumes, so often truncated); and, Darwin's letters and journals.

But this change in intellectual orientations toward the evolutionary did not remain within the realm of the natural sciences, within biology, alone. It spread to so many other academic and popular non-academic discourses that will simply be labeled here, as it has been before, as *social Darwinism* and it was especially manifest in those discourses where the primary subject was human beings and how they might be differentiated from one another and appropriately delineated into groups of varying kinds. Also, even within biology, as has already been discussed within this dissertation, there was theorization embedded with racist racializing, xenophobic ethnicizing, heterosexist gendering, and a host of other epistemically and morally hierarchical taxonomies, and through all of this runs, in its part, the influences of this social Darwinism.

In contemporary times, the capacity of humans for empirical knowledge about our own DNA has led to high hopes about the possibility of—once and for all—determining how it is that we should empirically (or otherwise, correctly) think about human beings as being classified into different groups. Science, with its high esteem in society, is said to rightly hold the key to unlocking this mystery about how we are the same, how we are different, and our origins, too. It is hoped that by the end of this research project some additional or improved ways to think about this deeply human mystery will have been determined, or at least accentuated.

In thinking about philosophical conceptualizations of categorization that are directly and intimately related to human identity, and therefore specifically relevant to this critical endeavor, many will be introduced (and some described) throughout the review of the literature from the humanities. To give an idea of the range of this literature, among these (in no particular order other than their occurrence to me in this

moment) are: the “cultural universals and particulars” of Kwasi Wiredu; the theory of colonial identities that arises from the writings of Frantz Fanon; the particularly ethics-focused recent writings of Kwame Anthony Appiah to do with identity in many of its manifestations; bell hooks on social identities and representation; Charles Mills on the metaphysics of race; Linda Martín Alcoff on visible identities and whiteness; Jean-Paul Sartre in several of his ideations of what might be termed identity including his explicit discussions of Black racial identity; Sara L. Gilman on the pathologizing of difference; Angela Y. Davis on women, race, class, and more; and, several theories which have to do with the relationship between self and community, person or personhood and community, or other conceptualizations of the relationship between the individual and groups among humans.

In thinking especially about these relationships among ideas of what individual persons are and ideas about different kinds of human groups, much of the theoretical literature with which I have the most familiarity comes from my studies of African philosophies. Of particular importance in my studies for many years (and its cause for coming first to mind when writing the list above) have been the works of Kwasi Wiredu, on which I wrote a significant paper while completing my master’s degree. In this I focused on Wiredu’s intertwining conceptions of person and community. Works discussed in this paper included *Philosophy and an African Culture*¹⁷ and *Cultural Universals and Particulars: An African Perspective*¹⁸ also, by Kwame Gyekye, *An Essay*

¹⁷ Wiredu, Kwasi. *Philosophy and an African Culture*. Cambridge University Press, 1980.

¹⁸ Wiredu, Kwasi. *Cultural Universals and Particulars: An African Perspective*. Indiana University Press, 1997.

on *African Philosophical Thought: The Akan Conceptual Scheme*,¹⁹ and *Tradition and Modernity: Philosophical Reflections on the African Experience*;²⁰ and, by D. A. Masolo, *African Philosophy in Search of Identity*,²¹ and *Self and Community in a Changing World*;²² and, by Ivan Karp and Masolo *African Philosophy as Cultural Inquiry*.²³ The most important historical personage included was Anton Wilhelm Amo (1703-1759). More recently I have begun to study the works of James Ogude, among which I suspect will be especially relevant in this sort of analyses are *Ubuntu and Personhood*²⁴ and *Ubuntu and the Reconstitution of Community*.²⁵ Another scholar working in this philosophical space, and pushing its feminist bounds, is Nkiru Nzegwu, in *Family Matters: Feminist Concepts in African Philosophy of Culture*,²⁶ and the earlier but more geographically focused, “Bypassing New York in Re-Presenting Eko: Production of Space in a Nigerian City,”²⁷ which is very helpful in thinking about the specificity of conceptions of identity as they relate to relatively small geographic spaces such as cities.

Concepts and terminologies of culture, which I anticipate will be important in the upcoming analyses about human identity and hopeful conclusions, are fascinating

¹⁹ Gyekye, Kwame. *An Essay on African Philosophical Thought: The Akan Conceptual Scheme*. 1987. Revised edition, Temple University Press, 1995.

²⁰ Gyekye, Kwame. *Tradition and Modernity: Philosophical Reflections on the African Experience*. Oxford University Press, 1997.

²¹ Masolo, D. A. *African Philosophy in Search of Identity*. Indiana University Press, 1994.

²² Masolo, D. A. *Self and Community in a Changing World*. Indiana University Press, 2010.

²³ Karp, Ivan, and D. A. Masolo. *African Philosophy as Cultural Inquiry*. Indiana University Press, 2000.

²⁴ Ogude, James. *Ubuntu and Personhood*. Africa World Press, 2018.

²⁵ Ogude, James. *Ubuntu and the Reconstitution of Community*. Indiana University Press, 2019.

²⁶ Nzegwu, Nkiru. *Family Matters: Feminist Concepts in African Philosophy of Culture*. State University of New York Press, 2006.

²⁷ Nzegwu, Nkiru. “Bypassing New York in Re-Presenting Eko: Production of Space in a Nigerian City.” *Re-Presenting the City: Ethnicity, Capital, and Culture in the 21st-Century Metropolis*, edited by Anthony D. King, New York University Press, 1996.

especially in this dissertation because of the very different, but perhaps similar, usages of “culture” between the natural scientific and humanistic realms. In the natural sciences, one thinks of a culture as something that is perhaps being grown in a petri dish. It is a group of organisms that has been separated off from the rest in order to study it in greater isolation and therefore with fewer variables. The growth of organisms is controlled by the medium in which they are placed and by the control of other specified conditions. A biological culture might be quite homogenous, consisting of, for example, many cells of the same kind all from one organism and placed in a simple medium; or a culture might be extremely heterogenous, constituted by organisms which differ on the order of biological kingdoms, as in the case of a symbiotic culture of bacteria and yeast (i.e., “SCOBY”).

Culture in the arts and humanities is described by many of my first-year undergraduate students (at least at the beginning of the semester) as consisting or being defined by things like language, religion, holidays, cuisine, and clothing. They are exactly right. This is an incomplete and not particularly theoretically oriented way of defining culture, but they clearly have a good idea of what the quite abstract idea of culture means when used in many everyday conversational contexts. And I will say also here, to give good credit where it is due, that with the tiniest bit of prompting most students provide far more interesting examples even on Day One, many of which would not have occurred to me, and which have modified my understanding of culture in contemporary society. One example of this is the magnitude and variety of the cultural impacts of social media influencers far beyond their immediate audiences. (Thank you, Students!)

Culture of course can be understood as much more than just a list of typical shared human characteristics and traits, or even customs, and I bring it up here primarily because of this fascination about the dueling ways that this term-idea is employed in the natural sciences and in the humanities. Culture in the humanistic sense is, like the petri dish method, a way of attempting to comprehend a complex system that exists within so many other complex systems. It presents such complicated, interesting, and important problematics that even the most intensive of theoreticians such as Homi K. Bhaba have sought to locate it.

From the exposition in Chapter One of some of the constituent parts and aspects of this scientific-technological-industrial-personal-social movement, it is clear that there are many academic disciplinary elements involved in its operations, and that there are likewise a number of academic disciplines and subdisciplines that are (or are potential) fora for critiques of it. Here the focus is on literature of two main disciplinary types: literature from the social sciences and literature from the humanities.

As described in the Introduction, early on in the research process it became apparent that it was in the social scientific realm (academically speaking, at least) that the majority of the discourses having to do with DTC DNA ancestry testing were taking place. That was the call and purpose for including this literature from the social sciences so extensively in a paper written while seeking a degree in the humanities. It was also beckoning because, seeing that the most comprehensive and penetrating discourses on the subject were taking place outside my disciplinary bounds, there seemed to be potential space for contribution within the realm of the comparative humanities. I will also reiterate

here that it was not solely this perceived lacuna that led me to the subject, but my determination that additional critiques (from many perspectives, both academic and otherwise) of this fast-paced movement are necessary and urgent.

This literature review begins with the social scientific and progresses toward the realm of the humanities. This follows a methodology of progression through the literature from those sources which most specifically address this scientific-technological-personal-social movement towards those which do not (necessarily) address it at all, but through their theoretical contents on human identity and/or the relationships between the personal and the collective, provide vital components of the helpful cognitive modes being sought through the study of this literature and through this review. The seeking of these modes is to be held constantly in priority. The sociological is primarily emphasized within the realm of the social sciences, and the philosophical is primarily emphasized within the realm of the interdisciplinary humanities, but the literature being incorporated into this research project is purposefully not limited to these disciplines, nor subdisciplines (as they might be designated), alone.

A core discourse in the literature from the social sciences on this subject-movement, and one that is so especially relevant in this research project, has to do with studying and analyzing how it is that geneticists understand-conceptualize (biologically) the relationship between human bodies-beings and race. Historically, as need constantly be held in mind, the practices of the biological sciences have been far from free from the structures of racism; rather, they have been embedded with them. In what are their most

cruel and brutal forms these scientific racisms have contributed to the engineering of eugenicist institutionalizations-imprisonments, sterilizations, and killings, and mass genocides. So, the question put, more pointedly and urgently, is: Does this still-young-and-rapidly-growing science of genetics constitute yet another kind of scientific racism? Should we be vigilantly on guard?

This survey of social scientific literature begins with some of the multiple ways this problematic of scientific racisms is addressed therein. Some of the terminologies include, for example: “racial essentialism,” the “molecularization of race,” and, the more encompassing, “genomic logic of difference” and “biological determinism.” After outlining these critiques, the review then proceeds to a consideration of social scientific discourses that address additional problematics that arise from this scientific-technological-industrial-personal-social movement.

The Human Genome Project (HGP), described at the outset of Chapter One, was hoped and heralded by so many for its potential capacity to bring to an end the scientific racisms of the past by providing, definitively, all of the answers we humans might want to know about race in a true, biological sense. For many the hope was that race-racialization would be proven not to be scientifically valid, and that this would lead humanity towards a new era wherein racism was decreased or even eliminated.

Despite this, there has been a resurgence in the use of race in genetics and in scientific practice more generally. According to W. Carson Byrd and Matthew W. Hughey in “Biological Determinism and Racial Essentialism: The Ideological Double

Helix of Racial Inequality,”²⁸ there has also been an associated rise in the utilization of biologically deterministic theories about race. They point to this as being especially the case in pharmacogenomics, but also with regards to theories about human behavior and many other attributes. They describe this as “racial essentialism,” and write about it in the context of racial inequality and the dominance of essentialist and deterministic modes of thought.

In “Return of the Race Myth?”²⁹ Osagie K. Obasogie discusses the technologies of genetics, and the ways in which these technologies and procedures related to them can be formative factors sustaining essentialist ideologies about race. Obasogie describes these ideologies as construing race as a(n) (empirically verifiable) genetic category and therefore also a physiologically-biologically causal factor in health outcomes and specifically health disparities. There are health researchers who are looking for disparities based on race. This is a very good thing, thinking in terms of efforts for health equity on a societal scale built upon the provision of good air, water, food, shelter, education, relationships, and so forth, which are unequally and unfairly distributed along racial and other socioeconomic lines. (For a localized example of this approach, see the Louisville Metro Health Equity Report in its most recent version.³⁰) This becomes a problem, as Obasogie indicates, when researchers looking for disparities based upon race assume or otherwise have the belief that race is (correctly) a genetic category. In these instances,

²⁸ Byrd, W. Carson, and Matthew W. Hughey. “Biological Determinism and Racial Essentialism: The Ideological Double Helix of Racial Inequality.” *The ANNALS of the American Academy of Political and Social Science*, vol. 661, no. 1, Sept. 2015, pp. 8–22.

²⁹ Obasogie, Osagie K. “Return of the Race Myth?” *New Scientist*, vol. 203, no. 2715, July 2009, p. 22.

³⁰ Center for Health Equity, A Division of Public Health and Wellness, Louisville Metro Government (Kentucky, USA). “Louisville Metro Health Equity Report.” 2017, <https://louisvilleky.gov/government/center-health-equity/health-equity-report>.

researchers looking for health disparities based upon race can and do sometimes conclude that poorer health outcomes are tied to certain (racially-genetically inferior, though that would not be stated as such) racial identities rather than looking into environmental factors and social causes. An important monograph by Obasogie studied is *Blinded by Sight: Seeing Race through the Eyes of the Blind*,³¹ which is found to be especially interesting when considered in tandem with philosopher-epistemologist Linda Martín Alcoff's *Visible Identities: Race, Gender, and the Self*.³² Conceptual relations perceived between these two works will be considered in the humanistic literature review. Most recently in 2018, Obasogie was coeditor, along with Marcy Darnovsky, of a volume entitled *Beyond Bioethics: Toward a New Biopolitics*,³³ which brings the ethical concerns of these discourses to the forefront, and as fully engaged with contemporary politics. The edited volume contains an introduction by Troy Duster (an early initiator and proponent of these discourses, and related discourses about biology and difference, in the social sciences)³⁴ and an afterward by Patricia J. Williams.

Dorothy Roberts, in *Fatal Invention: How Science, Politics, and Big Business Re-Create Race in the Twenty-First Century*,³⁵ published in 2011, provides an analysis of genetic science and some of the technological-medical-industrial revolutions it has

³¹ Obasogie, Osagie K. *Blinded by Sight: Seeing Race through the Eyes of the Blind*. Stanford Law Books, an imprint of Stanford University Press, 2014. See also related earlier article, Obasogie, Osagie K. "Do Blind People See Race? Social, Legal, and Theoretical Considerations." *Law & Society Review*, vol. 44, no. 3-4, 2010, pp. 585-616.

³² Alcoff, Linda Martín. *Visible Identities: Race, Gender, and the Self*. Oxford University Press, 2006.

³³ Obasogie, Osagie K., and Marcy Darnovsky, editors. *Beyond Bioethics: Toward a New Biopolitics*. University of California Press, 2018.

³⁴ See, for example, Duster, Troy, and Karen Garrett. *Cultural Perspectives on Biological Knowledge*. Praeger, 1984.

³⁵ Roberts, Dorothy E. *Fatal Invention: How Science, Politics, and Big Business Re-Create Race in the Twenty-First Century*. New Press, 2011.

inspired, in terms of public-lay perceptions and the intertwining (as Roberts explains it) histories of science and law with regards to race. (Roberts's analyses of legal aspects of this movement are interesting to consider in combination with Obasogie's.) Roberts structures the discourse of this monograph in part by following the history of African Ancestry, Inc., beginning with its founding by Rick Kittle. (African Ancestry, as described in Chapter One, specializes in mtDNA sequencing, also known as matrilineal, genetic testing for African Americans seeking to know their lineages' origins on the African continent.) Roberts also follows the much longer history of changing conceptualizations (biological and otherwise) of race and behaviors around race, especially in the United States, and especially as they interface with law.³⁶ An example of work that has a similar analytical approach, but with an emphasis on medical applications rather than legal and political frameworks, is *Making the Mexican Diabetic: Race, Science, and the Genetics of Inequality* by Michael Montoya, also published in 2011.³⁷

The sociological histories Roberts forms illustrate a legal construction of race as a mechanism of the maintenance of white supremacist social structures, accompanied by natural scientific practices that justified and encouraged, which has most recently found revitalized form in a new science of race grounded in genetics; that is, another return of scientific racism. Roberts's analyses are persuasive, and the conclusions and consequences of those analyses are powerful. Earlier works by Roberts (among many

³⁶ To appreciate some of the breadth of Roberts legal-social concerns, see, for example, Roberts, Dorothy E. "Constructing a Criminal Justice System Free of Racial Bias: An Abolitionist Framework Symposium on Pursuing Racial Fairness in Criminal Justice: Twenty Years after *McCleskey v. Kemp*." *Columbia Human Rights Law Review*, no. 1, 2007-08, pp. 261–86; and, "The Racial Geography of Child Welfare: Toward a New Research Paradigm." *Child Welfare*, vol. 87, no. 2, 2008, pp. 125–50.

³⁷ Montoya, Michael J. *Making the Mexican Diabetic: Race, Science, and the Genetics of Inequality*. University of California Press, 2011.

others) that are related include “The Genetic Tie”³⁸ in 1995, and *Black Body: Race, Reproduction, and the Meaning of Liberty* in 1999.³⁹ Recently, there is an article coauthored by Roberts and Oliver Rollins, “Why Sociology Matters to Race and Biosocial Science,”⁴⁰ which argues the necessity of many of the sociological studies and theories being addressed in this dissertation, among others, given the increase in interest and usage of models of science as biosocial. Roberts and Rollins describe both the innovations of sociologists in thinking about how the biological and the social are interrelated, and concerns about how some models reinforce racisms and subsequently perpetuate injustices.

This problematic of scientific racism is analyzed by Duana Fullwiley, but from a different and more scientific laboratory-oriented perspective, and with such elegant descriptors as the “molecularization of race”⁴¹ and “the enculturated gene.”⁴² Fullwiley expresses concern for the “biological reification” of health outcome inequalities as a consequence of this geneticizing of race (describing race and racial categories in genetic terms), that is, making health outcomes in fact more dependent on race rather than less so through mistaking the nature of race, or rather, having an incorrect conceptualization of what race is.

³⁸ Roberts, Dorothy E. “The Genetic Tie.” *The University of Chicago Law Review*, vol. 62, no. 1, 1995, pp. 209–73.

³⁹ Roberts, Dorothy E. *Killing the Black Body: Race, Reproduction, and the Meaning of Liberty*. First Vintage books edition, Vintage Books, 1999.

⁴⁰ Roberts, Dorothy E., and Oliver Rollins. “Why Sociology Matters to Race and Biosocial Science.” *Annual Review of Sociology*, vol. 46, no. 1, 2020, pp. 195–214.

⁴¹ Fullwiley, Duana. “The Molecularization of Race: Institutionalizing Human Difference in Pharmacogenetics Practice.” *Science as Culture*, vol. 16, no. 1, Mar. 2007, pp. 1–30.

⁴² Fullwiley, Duana. *The Enculturated Gene: Sickle Cell Health Politics and Biological Difference in West Africa*. 2017.

Though their contributions should not to be conflated—the social scientists’ work being reviewed now contain significantly varying descriptions and conceptualizations—there are several theoretical iterations of this sort in the literature which in combination might bring greater depth to a comprehension of this scientific-technological-industrial-personal-social movement: Abu El-Haj refers to this process similarly as “genetic reinscription”⁴³; Jeremy Freese and Sara Shostak as “geneticization”⁴⁴; Troy Duster as “molecular reinscription”⁴⁵; and, Alondra Nelson as the “geneticization of race.”⁴⁶ Each of these theoretical angles provides its own modal advantages, to be kept in mind for future analyses.

Fullwiley’s method (in the research reported in her 2007 article), is to focus analytical attention on seeking to understand the manner in which geneticists have utilized the language-concepts of their science to describe race. Fullwiley’s interviews, and subsequent analysis of those interviews, show that very often medical researchers’ language usage in laboratory setting reflects their cognitive (social) biases about race. Fullwiley presents further interrelated research and analyses in “Can DNA ‘Witness’ Race?: Forensic Uses of an Imperfect Ancestry Testing Technology” in 2011,⁴⁷ and “The ‘Contemporary Synthesis’: When Politically Inclusive Genomic Science Relies on

⁴³ Abu El-Haj, Nadia. “The Genetic Reinscription of Race.” *Annual Review of Anthropology*, vol. 36, 2007, pp. 283–300.

⁴⁴ Freese, Jeremy, and Sara Shostak. “Genetics and Social Inquiry.” *Annual Review of Sociology*, vol. 35, no. 1, Aug. 2009, pp. 107–28.

⁴⁵ Duster, Troy. “A Post-Genomic Surprise. The Molecular Reinscription of Race in Science, Law and Medicine.” *The British Journal of Sociology*, vol. 66, no. 1, 2015, pp. 1–27.

⁴⁶ Nelson, Alondra. *The Social Life of DNA: Race, Reparations, and Reconciliation after the Genome*. Beacon Press, 2016.

⁴⁷ Fullwiley, Duana. “Can DNA ‘Witness’ Race?: Forensic Uses of an Imperfect Ancestry Testing Technology.” *Race and the Genetic Revolution: Science, Myth, and Culture*, Columbia University Press, 2011.

Biological Notions of Race” in 2014.⁴⁸ Fullwiley’s attention, as related to this movement being researched herein, appears to move from the specificity of the laboratory to more encompassing concerns related to the relationships between scientific (specifically, genetics) practices and political power. Also helpful in understanding what the sociological literature has to offer in terms of studies of scientists regarding human difference, still focused on race but expanding outside the bounds of genetics into science more broadly is, *The Nature of Race: How Scientists Think and Teach about Human Difference*, by Ann Morning.⁴⁹ Joan H. Fujimura has also written critically over a significant period of time about scientific practices with regards to knowledge production, including, for example, in “Authorizing Knowledge in Science and Anthropology,” in 1998,⁵⁰ and “Staying the Course: On the Value of Social Studies of Science in Resistance to the ‘Post-Truth’ Movement,” in 2019.⁵¹ Perhaps especially helpful in the analytical applications of this research will be an article coauthored by Fujimura with Ramya Rajagopalan. “Different Differences: The Use of ‘Genetic Ancestry’ versus Race in Biomedical Human Genetic Research.”⁵²

Freese and Shostak provide a meta-discourse of the scope of social science literature on genetics in terms of two principal endeavors. Firstly, they say that social

⁴⁸ Fullwiley, Duana. “The ‘Contemporary Synthesis’: When Politically Inclusive Genomic Science Relies on Biological Notions of Race.” *Isis*, vol. 105, no. 4, Dec. 2014, pp. 803–14.

⁴⁹ Morning, Ann Juanita. *The Nature of Race: How Scientists Think and Teach about Human Difference*. University of California Press, 2011.

⁵⁰ Fujimura, Joan H. “Authorizing Knowledge in Science and Anthropology.” *American Anthropologist*, vol. 100, no. 2, 1998, pp. 347–60. See also by the same author, Fujimura, Joan H. “Standardizing Practices: A Socio-History of Experimental Systems in Classical Genetic and Virological Cancer Research, ca. 1920-1978.” *History and Philosophy of the Life Sciences*, vol. 18, no. 1, 1996, pp. 3–54.

⁵¹ Fujimura, Joan H. “Staying the Course: On the Value of Social Studies of Science in Resistance to the ‘Post-Truth’ Movement.” *Sociological Forum*, 2019.

⁵² Fujimura, Joan H., and Ramya Rajagopalan. “Different Differences: The Use of ‘Genetic Ancestry’ versus Race in Biomedical Human Genetic Research.” *Social Studies of Science*, vol. 41, no. 1, Feb. 2011, pp. 5–30.

scientists study genetics to understand the possible role and importance of the genome's influence on social outcomes and heritability. This variety of social scientific work (often anthropological or archaeological) is undertaken primarily in the study of large-scale social phenomena such as the movement and changing of societies over great stretches of time and space, and its aim is to improve “estimates of effects of environmental causes” of social phenomena,⁵³ rather than genetic causes. In sum, in this first variety of social scientific endeavor described by Freese and Shostak, the aim is to understand how it is that the knowledge gained from genetic science should properly affect, and not affect, social scientific theories about how humanity has changed over very long periods of time.

The second variety of social scientific endeavor described by Freese and Shostak aims to ascertain the social implications of the theory and practice of genetics. As mentioned previously, they discuss “geneticization” and its implications,⁵⁴ and also “medicalization,” which has a parallel definition but applied particularly to the making of medical categories from genetic data, as in pharmacogenomics. In this they focus on perspectives of the consumer-patient-public. Public opinion surveys about genetics are introduced,⁵⁵ and it is stated that a significant majority of respondents thought genetics to be important with regards to illness (90%), and “success in life” (two-thirds). Particularly fascinating is Freese and Shostak's discussion of “biosociality.”⁵⁶ It seems to me in retrospect an excellent predictor of what was to come, which was the formation of new collective group identities based on the mutual sharing of certain genetic traits. They

⁵³ Freese and Shostak, 2009, p. 109.

⁵⁴ Freese and Shostak, 2009, pp. 114-16.

⁵⁵ Freese and Shostak, 2009, pp. 117-18.

⁵⁶ Freese and Shostak, 2009, pp. 118-19.

were publishing in 2009; I think now about how there are so many of these (genetic) communities out there, aggregating memberships and communicating through social media.

Additional and more recent examples of studies from the social sciences which address public perceptions of genetic determinism and racial essentialism, include Jennifer Hochschild and Maya Sen, “Genetic Determinism, Technology Optimism, and Race: Views of the American Public,” published in 2015,⁵⁷ and Şule Yaylaci, Wendy D. Roth, and Kaitlyn Jaffe, “Measuring Racial Essentialism in the Genomic Era: The Genetic Essentialism Scale for Race (GESR),” published in 2019.⁵⁸ Considering some of the consequences of the widespread acceptance or estimation of the objectivity of genetic science, Ruha Benjamin studies and writes about formations of public policies crafted in reaction to such ideologies in “The Emperor’s New Genes: Science, Public Policy, and the Allure of Objectivity.”⁵⁹

Returning attention to the literature which addresses aspects of this movement from the perspectives of the provider-geneticist-specialist (those that take form in laboratory and/or commercial settings), rather than the consumer-patient-public, Duana Fullwiley’s extensive fieldwork in genetics research laboratories previously mentioned—learning about the people, technologies, and processes therein—resulted in conclusions about what sorts of logic were being used in the determination of racial categories, and

⁵⁷ Hochschild, Jennifer, and Maya Sen. “Genetic Determinism, Technology Optimism, and Race: Views of the American Public.” *The ANNALS of the American Academy of Political and Social Science*, vol. 661, no. 1, Sept. 2015, pp. 160–80.

⁵⁸ Yaylaci, Şule, et al. “Measuring Racial Essentialism in the Genomic Era: The Genetic Essentialism Scale for Race (GESR).” *Current Psychology*, June 2019.

⁵⁹ Benjamin, Ruha. “The Emperor’s New Genes: Science, Public Policy, and the Allure of Objectivity.” *The Annals of the American Academy of Political and Social Science*, vol. 661, 2015, pp. 130–42.

how people are distributed among those categories. What Fullwiley determined was that those researchers, at best, employed unclear (and previously unrecorded) socially biased definitions of race in the course of their research, and that this did necessarily affect the outcomes of their research. Fullwiley provides several examples of some apparently un- or semiconscious notions of biological race present in the ideology of some genetic researchers that point to their intellectual and emotional attachments to the ideas, whether explicitly stated or not. One interviewee, while explaining the difficulties of drawing geographic boundaries among racial groups, maintains that the groups determined by scientific method do correspond with “popular notions.” Another researcher, similarly, trying to explain why the debate is so complicated, resorts to utterances such as “I’m just of the belief,” and, finally, “sure of it.”⁶⁰

A similar sort of research into what’s going on in genetics laboratories, but utilizing a very different methodology, is presented in Catherine Lee’s “‘Race’ and ‘Ethnicity’ in Biomedical Research: How Do Scientists Construct and Explain Differences in Health?”⁶¹ In this article, Catherine Lee presents a survey of 204 biomedical research articles and concludes that while researchers utilize and rely on categories of race and ethnicity significantly in their research, they rarely define race nor ethnicity nor state how they draw boundaries among the various races and ethnicities that they distinguish. This appears to affirm and coincide with Fullwiley’s previously described conclusions about the researcher’s usage of racial (and ethnic) terminologies in uncertain and unstated ways.

⁶⁰ Fullwiley, 2007, pp. 1-30.

⁶¹ Lee, Catherine. “‘Race’ and ‘Ethnicity’ in Biomedical Research: How Do Scientists Construct and Explain Differences in Health?” *Social Science & Medicine*, vol. 68, no. 6, Mar. 2009, pp. 1183–90.

Examining this usage of racial categories in genetic research in yet another way, Sandra Soo-Jin Lee in “The Biobank as Political Artifact: The Struggle over Race in Categorizing Genetic Difference”⁶² studies the structures of the some major (huge-global) databases utilized by genetics researchers to store the information derived from genetic sequencing. Sandra Soo-Jin Lee’s focus is on, as the title indicates, studying these databases (biobanks) as political artifacts, objects created by humans that live-participate in large communities and that therefore contain political meaning. Lee concludes that the categorization schema employed in the databases studied arise from an intricate combination of scientific and sociohistorical factors, and that there are logical incoherencies in these combinations. Some incoherencies of this sort—of the mixed use of multiple logics of difference, biological and sociohistorical—were examined previously by Lee as part of an interdisciplinary group of concerned faculty from Stanford University, with a focus on the ethics of these practices and the development of better guidelines for “characterizing difference” in human genetics.⁶³

An overview of a good portion of these discourses is available in the helpful and concise volume edited by Sheldon Krimsky and Kathleen Sloan, *Race and the Genetic Revolution: Science, Myth, and Culture*,⁶⁴ which contains essays by a number of the scholars reviewed herein. Also, to note Krimsky’s significant and early contributions in particular, there is, for example, published in 1982, *Genetic Alchemy: The Social History*

⁶² Lee, Sandra Soo-Jin. “The Biobank as Political Artifact: The Struggle over Race in Categorizing Genetic Difference.” *The ANNALS of the American Academy of Political and Social Science*, vol. 661, no. 1, Sept. 2015, pp. 143–59.

⁶³ Lee, Sandra, et al. “The Ethics of Characterizing Difference: Guiding Principles on Using Racial Categories in Human Genetics.” *Genome Biology*, vol. 9, no. 7, 2008, p. 404.

⁶⁴ Krimsky, Sheldon., and Kathleen Sloan, editors. *Race and the Genetic Revolution: Science, Myth, and Culture*. Columbia University Press, 2011.

*of the Recombinant DNA Controversy*⁶⁵ and, in 1991, *Biotechnics & Society: The Rise of Industrial Genetics*.⁶⁶

Here I will interject a brief intermission into this literature review, to discuss something that comes to mind that is related, and that has influenced many others and my own thinking about genetics-related matters in the past couple years. Over the course of the past two years, almost exactly, as I have done research for this dissertation, and as I write this particular paragraph right now in February 2022, the COVID-19 pandemic has structured life for everyone in so many ways, and surely changed its structure deeply for many of us. A relatively superficial aspect of the major changes to my schedule in the first few months of (awareness of) the pandemic was that I would listen to the Kentucky governor's daily "Team Kentucky" announcements, in which he and his staff including top public health officials would provide guidance for individuals, for businesses, and so forth. In these video announcements they would also provide scientific data—lots of charts and graphs—as evidence to support these public health measures. Just after one of these announcements, I recorded my thoughts about how racial categories were being used in some of these charts and graphs. I was writing my comprehensive exam at the time, so my mind was very much on the subject matter of this dissertation (though not its exact focus, as it has taken and changed form over the course of research).

To quote my writing from April 9, 2020, "Right now, racial categories have begun to be employed to analyze COVID-19 infection, hospitalization, recuperation, and mortality rates. As I listen to the governor's daily announcement, it is evident he thinks

⁶⁵ Krimsky, Sheldon. *Genetic Alchemy: The Social History of the Recombinant DNA Controversy*. MIT Press, 1982.

⁶⁶ Krimsky, Sheldon. *Biotechnics & Society: The Rise of Industrial Genetics*. Praeger, 1991.

that racially defined statistics on this pandemic are significant, or at least he thinks that his constituents think so, but he does not state why. Nor, unsurprisingly, does he define what is meant by race in this instance, nor justify why the particular (Census-based) taxonomy of racial classification being used is suitable for this purpose. And, it is entirely unclear whether the racial statistics are thought important due to genetic differentiation among the defined races, varying socioeconomic circumstances among the defined races and subsequently access to good living conditions and healthcare, or some other biological or social factor or factors.”

My great concern in writing this then, which has already been written about again this review as it is shared similarly in the sociological literature, is that poorer health outcomes charted along racial lines (in that particular instance, with regards to COVID-19), especially in a culture such as the one that I live in, are very likely to be interpreted by many white people as due the physical-genetic inferiority of all other races as compared to white. That is, I know that the data won't be interpreted by many white people here (in Kentucky, as was the audience of these messages) to mean that there are great historical reasons that all non-white communities at large have access to lesser resources for a good, healthful life than white communities here, but rather because the members of those communities and those communities are inherently-biologically-genetically-essentially inferior. This is still so very much a part of the white culture here. Scientific racisms—long pronounced to be pseudosciences in so many academic and non-academic circles—still circulate in so much white parlance, often communicated ambiguously with a half-joking tone and a half-knowing look. Combine this with the practical concern that, so long as this remains so much an insistent aspect of white culture

here, there cannot be a sufficient scale of political will to change the necessary governmental and institutional (including industrial-corporate) systems in such a way that reparations might even be attempted to rectify the ongoing failures in these aspects of social justice.

Freese and Shostak's studies, in addition to including the previously described surveys on public opinions about (the power of) genetics, also describe problematics that have to do with how genetics is and might be utilized on a societal scale. Their concerns relate to those described earlier about the possibility of genetics science being utilized as a tool in those actions which comprise the greatest human atrocities. This is part of a greater discourse in the social scientific literature about genetics-based eugenics. It is known that eugenics, a system for the prevention of procreation and sometimes murder of individual humans on the basis of certain (supposedly) undesirable characteristics for the (supposed) greater good of a whole population, took place in many societal-scale forms during twentieth century. As these discourses point out, it is now worrisome whether this (newly racially and otherwise deterministic) science-technology of genetic ancestry testing is creating or will enable twenty-first century manifestations of eugenics as well.

The possibility of future genetics-based eugenics practices and also genocides is far from outside the public imagination. I would argue, based upon artistic creations, for example prominent movements in apocalyptic literature and film, that it is very much a part of what many people think and are concerned about. This is not the space to discuss that here, other than to say that I think that the fear is real for many; but that at the same time, there are probably many people who would simultaneously think it a stretch to say

that there is some connection between commonplace (for those with access) sorts of genetics testing, and eugenics.

Freese and Shostak argue otherwise. They analyze this in terms of the possibility that women might be forced to terminate pregnancies based on prenatal testing for genetic abnormalities that could (probabilistically) lead to significant health problems in the future. This sort of testing is commonplace for most pregnant persons in the United States today who have good health insurance coverage and the means to access and utilize it, but, what if the tests were mandated? Then, in turn, what if a legal authority or perhaps a change in health insurance guidelines, mandated or made it highly determined that, if the tests turn out a certain way, that the pregnancy be terminated (or not, as is another instance to consider)? Freese and Shostak conclude that the forced prohibition or limitation of the reproduction of certain populations, eugenics, is not an unrealistic problematic consequence of the congruence of these various technologies and ideas that are the “molecularization of race.” This is yet another theoretical conception of how scientific racism is or can be a part of genetics that will be helpful to recall during future analytical work.

Some other portions of this discourse (or set of discourses) in the social sciences about the problematics of genetics testing with regards to eugenics, both follow and long precede the analyses in the 2009 article by Freese and Shostak, “Genetics and Social Inquiry,” described herein. Some of the breadth of these discourses is displayed in the 2013 article by Jo C. Phelan, et al., “The Genomic Revolution and Beliefs about Essential

Racial Differences: A Backdoor to Eugenics?”⁶⁷ In this article Phelan alongside Bruce G. Link and Naomi M. Feldman reflect back on and analyze Troy Duster’s 1990 monograph, *Backdoor to Eugenics*, and discuss their research done in an effort to test Duster’s premises, which they affirm.⁶⁸

Issues regarding the broader epistemic and practical powers of scientific authorities are raised in the social scientific literature in “Race, Genes, Power” by Duana Fullwiley⁶⁹ and “Ambiguity and Scientific Authority: Population Classification in Genomic Science” by Aaron Panofsky and Catherine Bliss.⁷⁰ In the former, Fullwiley argues that race is a system of categorization that is “rarely neutral.” This is a broad-ranging article which brings together several longstanding discourses and incorporates examples beginning with the relations between the lynchings, public and publicized tortures and murders of Black persons in the United States not so long ago, contemporary violence, and the Black Lives Matter movements; and geographically ranging around the globe from the atomic bombings of Hiroshima and Nagasaki to contemporary living conditions of several North American indigenous populations, including the Havasupai and the Pima. Utilizing such examples, Fullwiley demonstrates the negative utility of race towards members of oppressed groups. (An argument related to this might be, even if genetics is an indicator of race, there is no such thing as a socially neutral conception of a race. All conceptions of race, whether they involve biology or not, also involve social

⁶⁷ Phelan, Jo C., et al. “The Genomic Revolution and Beliefs about Essential Racial Differences: A Backdoor to Eugenics?” *American Sociological Review*, vol. 78, no. 2, Apr. 2013, pp. 167–91.

⁶⁸ Duster, Troy. *Backdoor to Eugenics*. 1990. 2nd ed, Routledge, 2003.

⁶⁹ Fullwiley, Duana. “Race, Genes, Power.” *The British Journal of Sociology*, vol. 66, no. 1, 2015, pp. 36–45.

⁷⁰ Panofsky, Aaron, and Catherine Bliss. “Ambiguity and Scientific Authority: Population Classification in Genomic Science.” *American Sociological Review*, vol. 82, no. 1, Feb. 2017, pp. 59–87.

factors. This is not Fullwiley's argument, but rather one that I think can be drawn from it, if only to be utilized in conversation with stubborn believers in biological race, and as a part of a bigger discourse about the realities and functions of race in life.)

Now the survey will begin to proceed through a series of examples from the social scientific literature that demonstrate some of the breadth and depth of the concerns exhibited within it. Some of these concerns and problems directly interrelate with the preceding discussion of scientific racism in genetics, and some extend into other realms of problematics of human identity as related to genetics. The focus, per the form of this research project, is on epistemological and ethical problematics researched and analyzed. The examples provided from the literature included analyses of concerns related to the proclaimed broad health and social benefits of genetic testing, genetic-genealogical research and its consequences in family definition, broader historical research, law enforcement utilization of genetic databanks, data privacy, specific usages by those working both for and against the dismantling of unjust structures in society, and finally, what has been called the "marketization of identity politics" by Catherine Bliss.⁷¹

The proclaimed health and social benefits of genetic ancestry testing for consumers are numerous. In personalized medicine and pharmacogenomics, from its initiation as a medical and scientific practice, the assumption was that race is a pertinent factor in the administration of medical treatments. A foundational example provided in many instances in the literature (both from the social sciences and from philosophy of

⁷¹ Bliss, Catherine. "The Marketization of Identity Politics." *Sociology*, vol. 47, no. 5, Oct. 2013, pp. 1011–25.

science) is that of BiDil, which received the United States Food and Drug Administration's (US FDA) first approval for a race specific pharmaceutical application in 2005. BiDil is still marketed along these lines. The current headline phrasing is, "BiDil is the only heart failure medicine specifically indicated for self-identified African American patients."⁷² There are also untold number of other kinds of personalized' health services—both explicitly medical and otherwise—being offered on the basis of genetic testing services (including DTC services), such as nutritional advice and personal exercise training.⁷³

With regards to social benefits, genetic testing is also supposed to aid, and often does aid, in the location of biological family members. But I think it has yet to be seen, or may never be known, whether tales of celebration or tales of woe are more commonplace at the conclusion of such pursuits. Having followed many non-academic discourses on this subject over the last few years as well, I can attest to no great trend in one direction nor the other (that said, of course the most dramatic tales are told the most). Sandra Soo-Jin Lee discusses similar utilizing conceptions of play and its risks and benefits in "Race, Risk, and Recreation in Personal Genomics: The Limits of Play."⁷⁴

The identification of (presumed dangerous) persons suspected to have committed crimes is also often purported to be a social advantage of this sort of testing. Profiling based on DNA samples which estimate phenotype are being used in police investigations

⁷² BiDil (Isosorbide Dinitrate/Hydralazine HCl) | Heart Failure Medication. <https://www.bidil.com/>. Accessed 21 Feb. 2022.

⁷³ I presented research on this topic in a workshop session titled, "Questioning Personalized Medicine: The (Mis)use of Racial Classification in Pharmacogenomics" as part of the Discourse and Semiotics Workshop Series at the University of Louisville, October 2018.

⁷⁴ Lee, Sandra Soo-Jin. "Race, Risk, and Recreation in Personal Genomics: The Limits of Play." *Medical Anthropology Quarterly*, vol. 27, no. 4, 2013, pp. 550–69.

today, as has been examined by Dorothy Roberts. Famously, long cold police cases are being solved in part due to the enormous databases created by direct-to-consumer testing companies, and some of the star genetic genealogists who frequent them and ultimately influence criminal and judicial proceedings. In the critical examinations of Dorothy Roberts, the prognosis for this usage of genetic information is quite dire; its investigative (and predictive) usage is entrenched with racially biased ideologies and data sets. This is the same sort of issue that has come up in recent years on the teaching front in academia, with questions of a similar sort being raised about software used to proctor and monitor student exams in order to prevent cheating. This variety of software has repeatedly been called into questions, and in many cases universities and other institutions of higher learning have suspended its usage due to proven or suspected racial biases against Black and Brown students, and other students with relatively darker skin tones and also certain culturally influenced stylings and habits of movement.

Alondra Nelson in *The Social Life of DNA*, previously introduced in this review, examines the use of genetic testing, both for familial and racial identification purposes, as a part of large-scale efforts for social justice. She gives as examples Las Abuelas de Plazo de Mayo who were separated from their grandchildren during the so-called National Reorganization Process in Argentina between 1976 and 1983, a research study of an African burial ground in New York City in the 1990s, and recent and contemporary legal actions in the United States for reparations in restitution for the enslavement of African and African American persons.

These sorts of examples, provided by sociologists such as Nelson and other social theorists, I must admit, have provided such challenge to my initial inclinations of near

total skepticism and pessimism about this movement. Although there are so many living and grave concerns about the personal and social aspects of this movement made possible by science, technology, and industry, examples such as these show the great actual and possible positivity in it as well. Insofar as this is not the moment to discuss such consequences (these will come up again in Chapters Three and Four), I will be brief and only say that: While I at first came to this subject with such great and intense skepticism that I did not see much possible good in it, or at least so much potential harm that the good was overwhelmed, Alondra Nelson in particular provided me with great fodder for thinking about some of its positive impacts and potential as a powerful force of change towards social justice ends. I should also state here that this is not to say that the primary lessons I learned from Nelson weren't critical in nature, they were, but it is to affirm that this monograph was particularly inspirational to me in shaping my purposes and aims at the end of this research. The memorable and meaningful main title's "social life" conveys a lot. Nelson's work reckons with DNA as it usually is not—as an idea generated by social beings in a social society and therefore bursting with social content and meaning, and consequences. Earlier articles by Nelson leading up to the monograph, very relevant to this research also, include, "Bio Science: Genetic Genealogy Testing and the Pursuit of African Ancestry" in 2008,⁷⁵ and "GeneTiC AnCesTry TesTing As An eThniC opTion" in 2014.⁷⁶

⁷⁵ Nelson, Alondra. "Bio Science: Genetic Genealogy Testing and the Pursuit of African Ancestry." *Social Studies of Science*, vol. 38, no. 5, 2008, pp. 759–83.

⁷⁶ Nelson, Alondra. "GeneTiC AnCesTry TesTing As An eThniC opTion." *Contexts*, vol. 13, no. 4, 2014, pp. 19–20.

Regarding familial relations and genealogical research being aided by DTC genetic testing, Catherine Lee and Torsten H. Voigt in “DNA Testing for Family Reunification and the Limits of Biological Truth” conclude that genetic information is insufficient in the defining of familial bonds, and that one of the limits of biological truth is that, in this instance, it is bounded by the social.⁷⁷

A related arena of endeavor that is often touted to benefit from ancestry DNA testing is historical research that incorporate the genetic-genealogical information. For example, historical research in the United States related to the history of Black families and communities has been energized by genetic research. Surely among the most-well known examples of this have to do with the lineages of Sally Hemmings and Thomas Jefferson. This has spawned so many conversations both academic and far more widespread, many of great value.

Regarding law enforcement utilization of predictive technologies developed from genetic testing services focused on phenotype, Fullwiley in “Can DNA ‘Witness’ Race?: Forensic Uses of an Imperfect Ancestry Testing Technology,”⁷⁸ breaks down a variety of police investigation software applications that are used to create computer-generated images of suspects based on DNA evidence found at crime scenes, when there are no exact or near-familial matches in databases to which they have access. That is, if police have DNA evidence from a crime scene and they cannot determine exactly who it is through personal identification methods (sometimes called “DNA fingerprinting”), then

⁷⁷ Lee, Catherine, and Torsten H. Voigt. “DNA Testing for Family Reunification and the Limits of Biological Truth.” *Science, Technology, & Human Values*, July 2019, pp. 1–25.

⁷⁸ Fullwiley, Duana. “Can DNA ‘Witness’ Race?: Forensic Uses of an Imperfect Ancestry Testing Technology.” *Race and the Genetic Revolution: Science, Myth, and Culture*, Columbia University Press, 2011.

they can turn to this sort of software to generate a purportedly phenotypically correct image of that suspect, along with a list of features, at the top of which, coming only after “Gender,” is “Race.” As might be suspected, Fullwiley is highly critical of many of the social aspects of race incorporated into the generation of these phenotypical images and profiles.

Another aspect of this movement critiqued in the social scientific literature has to do with the privacy of this genetic data, as collected into the sorts of databases previously discussed and accessible by so many means and to so many parties. For instance, Elizabeth E. Joh’s concern with health and other personal data privacy issues as related to genetics is evident in a significant series of publications over a span of years. For example, in “Reclaiming ‘Abandoned’ DNA: The Fourth Amendment and Genetic Privacy,”⁷⁹ Joh discusses how the right to be protected from unlawful search and seizure is proving porous in legal decisions regarding consumers’ rights to keep private their own genetic information and material, especially for law enforcement purposes. This is discourse continued by Joh in, “Your ‘Abandoned’ DNA: Up for Grabs by the Police?”⁸⁰ “DNA Theft: Your Genetic Information at Risk,” and more recently in a 2019 *New York Times* op-ed, “Want to See My Genes? Get a Warrant.”⁸¹

Kim TallBear, in *Native American DNA: Tribal Belonging and the False Promise of Genetic Science*,⁸² explores the complex and treacherous interrelationships between

⁷⁹ Joh, Elizabeth E. “Reclaiming ‘Abandoned’ DNA: The Fourth Amendment and Genetic Privacy.” *Northwestern University Law Review*, vol. 100, no. 2, Jan. 2006, pp. 857–84.

⁸⁰ Joh, Elizabeth E. “Your ‘Abandoned’ DNA: Up for Grabs by the Police?” *Insights on Law & Society*, vol. 8, no. 1, Fall 2007, pp. 15–16.

⁸¹ Joh, Elizabeth E. “Want to See My Genes? Get a Warrant: [Op-Ed].” *New York Times, Late Edition (East Coast)*; New York, N.Y., 13 June 2019, p. A.27.

⁸² TallBear, Kim. *Native American DNA: Tribal Belonging and the False Promise of Genetic Science*. University of Minnesota Press, 2013.

Native American conceptions of identity and group membership, and genetic researchers' conceptions of Native American identity. One example of this that was discussed intensely over a few years, as US presidential electoral politics fluctuated wildly per usual in its focus, was that of Elizabeth Warren's usage of a genetic ancestry test in order to (fallaciously) demonstrate that she had Native American ancestry as she had claimed in the past due to familial history. Her reactions to the test results, and the reactions of Native American national and other social leaders in the United States to the results of her test, were numerous and did influence political discourses—albeit relatively briefly—on a national-international scale.⁸³

TallBear's illustrations and conceptualizations of DNA and identity in *Native American DNA*, and her other writings leading up to and around the time of that monograph's publication,⁸⁴ were highly influential (in a similar degree as Alondra Nelson's and Dorothy Roberts's, though in very different ways) in my evolving understanding of what all the idea of DNA (and identity, too) encompasses as I have gone through the process of research and study in the writing of this dissertation, as gained

⁸³ See, for example, Miller, Matt. "No, Elizabeth Warren Can't Take a DNA Test to Prove She's Cherokee." *Slate Magazine*, 29 June 2016, <https://slate.com/technology/2016/06/dna-testing-cannot-determine-ancestry-including-elizabeth-warrens.html>; Herndon, Astead W. "Elizabeth Warren Apologizes to Cherokee Nation for DNA Test." *The New York Times*, 1 Feb. 2019, <https://www.nytimes.com/2019/02/01/us/politics/elizabeth-warren-cherokee-dna.html>; Bois, Paul. "Woman Asks Elizabeth Warren For 'Honesty' About Her Native American Ancestry Claims | Daily Wire." *The Daily Wire*, 19 July 2019, <https://www.dailywire.com/news/woman-asks-elizabeth-warren-honesty-about-her-paul-bois>; Huber, Dave. "'Self-Indigenization' and the (Further) Contradictions of Identity Politics." *The College Fix*, 11 Apr. 2020, [thecollegefix.com, https://www.thecollegefix.com/self-indigenization-and-the-further-contradictions-of-identity-politics/](https://www.thecollegefix.com/self-indigenization-and-the-further-contradictions-of-identity-politics/); and, TallBear, Kim. "Kim TallBear on Twitter: 'After Too Many Media Inquiries, Here Is My Statement on the #ElizabethWarren DNA Testing Story.'" Twitter. [twitter.com, https://twitter.com/kimtallbear/status/1051906470923493377/photo/1](https://twitter.com/kimtallbear/status/1051906470923493377/photo/1). Accessed 18 Apr. 2020.

⁸⁴ See, for instance, TallBear, Kim. "Narratives of Race and Indigeneity in the Genographic Project." *The Journal of Law, Medicine & Ethics*, vol. 35, no. 3, Aug. 2007, pp. 412–24; TallBear, Kim. "Genomic Articulations of Indigeneity." *Social Studies of Science*, vol. 43, no. 4, Aug. 2013, pp. 509–33; and, TallBear, Kim. "Tell Me a Story: Genomics vs. Indigenous Origin Narratives." *GeneWatch*, vol. 26, no. 4, Aug. 2013, pp. 11–39.

through reading social scientific literature. Some of the particular illustrations and arguments from TallBear's "indigenous, feminist approach" will be utilized as a part of the discussion of political aspects and ramifications in Chapter Four. Also relevant is TallBear's joint work with Jenny Reardon, "'Your DNA Is Our History': Genomics, Anthropology, and the Construction of Whiteness as Property,"⁸⁵ as well as TallBear's contribution to a Routledge handbook, "The Emergence, Politics, and Marketplace of Native American DNA."⁸⁶ TallBear's most recent work is burning in my intellectual cue, but it is doubtful that I will be able to take in any meaningful portion of it in order to incorporate it before the end of this phase of my research on this subject (though I know it could be utilized and should be).⁸⁷ Framing their argument in terms of antireductionism, which is well in line with the approach and methodology of TallBear, Alyssa C. Bader and Ripan S. Malhi focus on a particular family in "Case Study on Ancestry Estimation in an Alaskan Native Family: Identity and Safeguards against Reductionism,"⁸⁸ to illustrate a number of localized and generalized concerns about the identification of self and others in the context of community.

Studying white nationalism, Aaron Panofsky and Joan Donovan, in "Genetic Ancestry Testing among White Nationalists: From Identity Repair to Citizen Science,"⁸⁹ study the reactions of white nationalists in an online forum when they receive what they

⁸⁵ Reardon, Jenny, and Kim TallBear. "'Your DNA Is Our History': Genomics, Anthropology, and the Construction of Whiteness as Property." *Current Anthropology*, vol. 53, no. S5, Apr. 2012, pp. S233–45.

⁸⁶ TallBear, Kim. "The Emergence, Politics, and Marketplace of Native American DNA." *Routledge Handbook of Science, Technology, and Society*, Routledge Handbooks Online, 2014.

⁸⁷ TallBear, Kim. "Feminist, Queer, and Indigenous Thinking as an Antidote to Masculinist Objectivity and Binary Thinking in Biological Anthropology." *American Anthropologist*, vol. 121, no. 2, 2019, pp. 494–96.

⁸⁸ Bader, Alyssa C., and Ripan S. Malhi. "Case Study on Ancestry Estimation in an Alaskan Native Family: Identity and Safeguards against Reductionism." *Human Biology*, vol. 87, no. 4, 2015, pp. 338–51.

⁸⁹ Panofsky, Aaron, and Joan Donovan. "Genetic Ancestry Testing among White Nationalists: From Identity Repair to Citizen Science." *Social Studies of Science*, vol. 49, no. 5, Oct. 2019, pp. 653–81.

conceive to be unsettling news in the result of a DNA ancestry test. Their analysis culls evidence from user posts on a white nationalist website. Their work concludes that often it is the emotional reactions of the test-takers which drive what they make of genetic ancestry testing, that is, whether they find it to be valid or not. If test-takers believed the results that they received confirmed that which they already thought to be the case (whiteness and in tandem supremacy), then test takers tended towards assessing the science-technology as valid. If test-takers believed that the results that they received contradicted what they already thought to be the case (whiteness and in tandem supremacy), then test takers tended towards assessing the science-technology as invalid.

Another fascinating study which provides an analysis of this movement at the level of discourse and incorporating contemporary political considerations about white nationalism-supremacy, is “Discord Over DNA: Ideological Responses to Scientific Communication about Genes and Race,”⁹⁰ by Alexandre Morin-Chassé, Elizabeth Suhay, and Toby E. Jayaratne. Other research in the last few years about the reactions of and impacts on consumer-test-takers with regards to racial and ethnic self-identification include that of Wendy D. Roth and Biorn Ivemark in “Genetic Options: The Impact of Genetic Ancestry Testing on Consumers’ Racial and Ethnic Identities,”⁹¹ and Janet K. Shim, Sonia Rab Alam, and Bradley E. Aouizerat in “Knowing Something versus Feeling Different: The Effects and Non-Effects of Genetic Ancestry on Racial Identity.”⁹²

⁹⁰ Morin-Chassé, Alexandre, et al. “Discord Over DNA: Ideological Responses to Scientific Communication about Genes and Race.” *The Journal of Race, Ethnicity, and Politics*, vol. 2, no. 2, 2017, pp. 260–99.

⁹¹ Roth, Wendy D., and Biorn Ivemark. “Genetic Options: The Impact of Genetic Ancestry Testing on Consumers’ Racial and Ethnic Identities.” *American Journal of Sociology*, vol. 124, no. 1, July 2018, pp. 150–84.

⁹² Shim, Janet K., et al. “Knowing Something versus Feeling Different: The Effects and Non-Effects of Genetic Ancestry on Racial Identity.” *New Genetics & Society*, vol. 37, no. 1, Mar. 2018, pp. 44–66.

The “marketization of identity” in DTC DNA ancestry testing is at odds with “existing sociocultural and humanist ways of ‘knowing’ and ‘doing’ racial identity in society.”⁹³ The exposure of concepts of group identity to the tremendous forces of financial and other economic markets is a significant concern for many. How might changes in social groupings over the shorter and the longer term be affected by the impact of data input from the genetic ancestry testing industry? In 2006, in the “The Science and Business of Genetic Ancestry Testing,”⁹⁴ Deborah A. Bolnick, et al. (i.e., Richard S. Cooper, Troy Duster, Duana Fullwiley, Jonathan Kahn, Jay S. Kaufman, Jonathan Marks, Ann Morning, Alondra Nelson, Pilar Ossorio, Kim TallBear, Jenny Reardon, and Susan M. Reverby) jointly present their concerns and analyses related to the marketization of identity, and there is additionally a 2008 collection edited by Barbara A. Koenig, Sandra Soo-Jin Lee, and Sarah S. Richardson, *Revisiting Race in a Genomic Age*,⁹⁵ on race in genetics that contains a number of sociological analyses on the business and marketing of DTC ancestry tests, particularly with regard to the marketization of racial identity.

Sociocultural and humanist ways of understanding race are destabilized and, at times, displaced by the forces of this marketization of identity or marketization of identity politics. In addition to the ongoing epistemic privilege of science generally as an arbiter of knowledge, DNA and genetic research in particular seem to hold a fascination in the

⁹³ Text from the third comprehensive exam prompt

⁹⁴ Bolnick, Deborah A., et al. “The Science and Business of Genetic Ancestry Testing.” *Science*, vol. 318, no. 5849, Oct. 2007, pp. 399–400.

⁹⁵ Koenig, Barbara A., et al. *Revisiting Race in a Genomic Age*. Rutgers University Press, 2008.

public imagination as evidenced by the numerous artifacts of culture with it as a theme. It is also used in medicine, in legal affairs, in the family, and so many other spheres, which have been outlined: crucial realms of life in which ones expects or at least hopes that the rules of evidence will be in order. I do not think that the rules of evidence are in order, and that they are well in conflict with “sociocultural and humanist ways of ‘knowing’ and ‘doing’ racial identity,” and other forms of human social identity, “in society.”

In “The Emergence, Politics, and Marketplace of Native American DNA,”⁹⁶ Kim TallBear discusses the extraordinary popularity of genetic narratives, such as that generated by Spencer Wells. These made-for-streaming popular documentaries make so many of the errors (which have been pointed out by humanists and social scientists alike), and in doing so heavily rely on samples of DNA from “pure” (Wells frequently uses terminologies of “purity” and similar) indigenous populations around the world. In sum, Wells does not hesitate to use concepts of ethnic or racial purity in the narratives of ancestry he creates nor in his explanations of them. And the episodic shows and films are popular. The forces of the marketplace are not correcting this error, and the marketization continues.

In the edited volume, *Beyond Bioethics: Toward a New Biopolitics*, published in 2018,⁹⁷ Osagie K. Obasogie and Marcy Darnovsky organize a series of contributions by a group of scholars from a variety of disciplines, including the humanities and the sciences, social and natural. It contains three parts, one of which is on emerging biotechnologies, in

⁹⁶ TallBear, Kim. “The Emergence, Politics, and Marketplace of Native American DNA.” *Routledge Handbook of Science, Technology, and Society*, Routledge Handbooks Online, 2014.

⁹⁷ Obasogie, Osagie K., and Marcy Darnovsky, editors. *Beyond Bioethics: Toward a New Biopolitics*. University of California Press, 2018.

which genomic technology in particular accounts for a few chapters. This volume is exciting in its interdisciplinarity, and it lends encouragement with regards to the possibility of containing or redirecting the “molecularization of race” so that it might not reinforce ideologies that are harmful to so many. As mentioned previously, I have become highly interested in Obasogie’s research and theoretical approaches, both the earlier work on how race is perceived by those who do not have vision, and the more recent work that is a part of discourses that encompass a greater variety of social and political critiques such as those contained in this collection.

Genetic testing whether for the purposes of ancestry exploration, genealogical research, familial reunion, criminal investigation, civil legal matters, pharmacogenomic research, or any other purpose, largely takes the same form, and can be construed (simply) in terms of four steps. Firstly, as described in greater detail in Chapter One, a sample is donated or procured from the body of the person being tested (in the form of tissue samples, blood samples, hair samples, saliva samples, in utero samples, and so forth, depending on the kind of test or research being undertaken). Secondly, DNA is extracted from the sample. Thirdly, the extracted DNA is tested for various polymorphisms (polymorphisms are genetic variations) according to the sort of research being undertaken (rarely is all the DNA sequenced). Fourthly, the data about polymorphisms present in the DNA extracted from the sample are compared to a database or databases of information about polymorphism frequencies in different populations in order to determine their relative frequencies. Different arrays of polymorphisms are used as a basis of comparison depending upon whether the purpose of

the test is to learn information about ancestry, disease probabilities, risks for certain medications, individual identification for criminal investigation purposes, and so forth.

In genetic ancestry testing these arrays of polymorphisms are often described as ancestry informative markers (AIMs). AIMs are used (as a concept) in mtDNA (maternal lineage), Y-DNA (paternal lineage), and all-chromosome DNA ancestry testing. AIMs are also associated with the varying and various types of haplogroups (described in Chapter One). All-chromosome AIMs testing is publicized by some companies, such as 23andMe, as being more accurate in its overall depiction of biogeographical ancestry, but in it still arises many problematics, though of different sorts than mtDNA and Y-chromosome based tests. In the social scientific literature, Mark Shriver and Rick A. Kittles, for example, in “Genetic Ancestry and the Search for Personalized Genetic Histories” explore these issues as early as 2004.⁹⁸ (This is the same Rick Kittles who was the founder of African Ancestry, Inc.) Also related is Sarah Tishkoff’s “Exploring Genomic Studies in Africa,” 2011.⁹⁹ Tishkoff’s research in particular will be of value in analysis in the next chapter that addresses some specific problematics of identifying African ancestries via genetic means.

These arrays of polymorphisms that are used as bases of comparison are determined by research undertaken on persons who are members of target populations who are known or presumed to be representative of those groupings (examples: ancestral,

⁹⁸ Shriver, Mark D., and Rick A. Kittles. “Genetic Ancestry and the Search for Personalized Genetic Histories.” *Nature Reviews Genetics*, vol. 5, no. 8, 8, Aug. 2004, pp. 611–18.

⁹⁹ Tishkoff, Sarah. “Exploring Genomic Studies in Africa.” *Genome Medicine*, vol. 3, no. 7, 2011, pp. 1–3. See also, Tishkoff, Sarah A., and Kenneth K. Kidd. “Implications of Biogeography of Human Populations for ‘race’ and Medicine.” *Nature Genetics*, vol. 36, no. 11, Nov. 2004, pp. S21–27.

medical, or criminal). For example, if a research study is focused on prostate cancer, then polymorphisms hypothesized as being related to prostate cancer would be tested for in research participants, then the research participants' polymorphisms would be compared to the corresponding genetic sequences in the target population, in this instance persons who have been diagnosed with prostate cancer in its various stages or predecessor conditions.

In parallel, if a genetic test is taken to determine an individual's ancestry, then polymorphisms hypothesized as being related to ancestry (AIMs) are tested, and individual test-takers AIMs are compared to the (huge databases of) AIMs of target populations, in this case an array of persons who are thought to have a defined diversity of geographic origins: some wholly African in origin, some wholly (indigenous) American in origin, some wholly Asian in origin, some wholly Irish in origin (the geographic scales vary widely), and so forth. One important note, geographic designators of identity are not the only types of identificatory descriptors utilized in genetic ancestry testing; this simplified example has been given here for clarity's sake, but it remains to be analyzed and reflected upon how complex the intersections are among the various forms of (social) identity used as descriptors in DNA ancestry testing.

Additionally, to complicate a study of how race is and has been used in genetic research, is the long list of terms denoting concepts that coincide exactly or partially with ideas of race, or are often mistakenly confused or conflated with ideas of race. This variety includes ethnicity or ethnic group, heritage, descent, population or subpopulation, continental group, geographic origin, and ancestry; also, phenotype groups (referring to physical appearance), haplotype groups (haplogroups), taxonomic classifications, and

(historically) subspecies. All of these terms have been used not just in scientific language broadly speaking, but in medical terminology in particular.

For many persons in everyday social contexts (and certainly in the social worlds that I largely live in), racial classification is an unproblematic practice. To say, “that person is Black” or “this person is white” (or alternatively, “that person is African-American” or “this person is Caucasian”) appears to many to be a simple descriptive practice. When we get a driver’s license renewed, apply to a university, go to the doctor, or undertake any number of normal life activities, we are often asked to complete a form or questionnaire which prompts us to indicate our race. The discrete checkboxes reinforce the idea that races are discrete categories of persons that are uncomplicated. Even the idea that a person might be “interracial” or “mixed” again indicates that races are separate categories of persons that can sometimes be combined and co-indicate ideologies of racial purity. There is an essentialism inherent in this sort of usage of the term “race,” which is deeply problematic, and this sort of racial essentialism is not escaped in the practice of genetic ancestry testing.

Before closing this review of literature from the social sciences pertinent to this research project—invariably incomplete—there should be some more mention of examples of the sort of social scientific work which seeks to better think (epistemologically and ethically) about human groups with regards to genetics. That is, knowing that there are deeply entrenched structures of injustice such as racism embedded within, these social scientists ask, if geneticists are often using ideas of human groupings wrongly (epistemologically and ethically) in their work, then what can genetics tell us about the biological variation among humans? Examples of this include, Janet K. Shim,

Katherine Weatherford Darling, Martine D. Lappe, L. Katherine Thomson, Sandra Soo-Jin Lee, Robert A. Hiatt, and Sara L. Ackerman in “Homogeneity and Heterogeneity as Situational Properties: Producing – and Moving beyond? – Race in Post-Genomic Science,”¹⁰⁰ and Fujimura in the especially terminologically-conceptually helpful article, “Clines Without Classes: How to Make Sense of Human Variation.”¹⁰¹

Concerns about how knowledges of human identities and interwoven moralities are changing in response to this science-technology-industry are very present in the social scientific literature. Topics addressed include (but are certainly not limited to): scientific racism, biological determinism, how to better think about human social groups with regards to genetics, the relationships between race and law, genetic database structures, personalized medicine and pharmacogenomics, eugenics, law enforcement policymaking and investigatory practices, privacy-related activities and concerns, familial and other genealogical-genetic research, the assignment of social benefits based on (genetic) group membership, the “marketization of identity politics,” white nationalism, empire, reparations, and purity.

Now the course of this literature review makes a turn towards the humanistic and the philosophical, still seeking epistemological and ethical concepts and theories that might be of use in future analyses and reflections.

¹⁰⁰ Shim, Janet K., et al. “Homogeneity and Heterogeneity as Situational Properties: Producing - and Moving beyond? - Race in Post-Genomic Science.” *Social Studies of Science*, vol. 44, no. 4, 2014, pp. 579–99.

¹⁰¹ Fujimura, Joan H., et al. “Clines Without Classes: How to Make Sense of Human Variation.” *Sociological Theory*, vol. 32, no. 3, 2014, pp. 208–27.

In 1903, W. E. B. Du Bois in *The Souls of Black Folk: Essays and Sketches*¹⁰² describes the experiences of people of African descent in the “American world” as lacking a “true self-consciousness.” Rather, the sensation of being Du Bois described was that of a “double-consciousness” wherein the black person has the sense of being able to perceive their own self doubly with the additional lens of white perceptions of the world. It is from this that I infer that, were Du Bois to be living to witness the explosion of genetic ancestry testing, he might question what sort of knowledge about “who we really are” might be gained from these sorts of tests. As he considered the issues contemporary to his time, such as the distribution of land and other resources to African Americans after the legal abolition of their unpaid and brutal forced labor, in terms of the dynamics of social and ideological power between white communities and their interests, and black communities and their interests, it is interesting to consider how Du Bois’s epistemology might be applied to the genetic ancestry testing movement. Following this line of thinking, the Du Boisian self would question the social constructs that underlie, permeate, and are advanced by the practice of genetic ancestry testing. It would question what racially related and other social hierarchies are involved, and how these are manifest in the experiences of black selves. It might also question the aims of genetic ancestry testing. Do they align with the goal of merging the ambivalent variety of experience of the self he terms (double-consciousness) into an uplifting, just experience of the self, “a better and truer self”? Or rather is the result a maintenance of or increase in the divisiveness or level of strife within the self, and unjust social hierarchies in the world of humanity?

¹⁰² Du Bois, W. E. B. *The Souls of Black Folk: Essays and Sketches*. Knopf, 1903.

Du Bois's understanding of the nature of race is at least two-pronged. First—and this is utterly unsurprising given his historical situation—it is conveyed repeatedly in his body of work that his understanding of the nature of race is that it is, in part, a biological or “blood”-based grouping of humans. His understanding is a naturalized and markedly essentialist one. However, and this is a significant exception—Du Bois's understanding of race is not entirely biological and essentialist, it also contains a social component. That second component is described in one instance as having “a common history, common laws and religion, similar habits of thought and a conscious striving together for certain ideals of life.” So, although Du Bois's understanding of race has biological and essentialist features, it is not utterly so. That which is social is also crucial.

In Kwame Anthony Appiah's reading of Du Bois, it is quite possible to separate out those components of Du Bois's scholarship that rely on a biological understanding of race without doing harm to his social theory; on the contrary, this approach of Appiah's is employed in order to bring out those aspects of Du Bois that can still be relevant to those of us today who have abandoned the idea that the concept of race may be correctly called biological. Mills likewise applies Du Boisian concepts in his understanding of racial dynamics today, focusing on Du Bois's descriptions of the black racialized experience and its relation to whiteness.

It is interesting, that despite Du Bois's consistent position on the nature of race as biological, that there are moments in which he appears to utilize an understanding of race that is much more familiar to us today. For example, in the following Du Bois displays an understanding of the nature of race that contains formative components of agency and choice, and political interest, in his understanding of race: “We believe it the duty of the

Americans of Negro descent, as a body, to maintain their race identity until this mission of the Negro people is accomplished, and the ideal of human brotherhood has become a practical possibility.” I infer from his utilization of the terms “duty” and “maintain” that there are at least aspects of participation-choice-agency-willingness involved in this conceptualization, that race is not entirely deterministic (determinism typically being associated with biological conceptions of race). I consider the following works by Du Bois central to my comprehension of his theoretical output, which address the radically changing circumstances of African and African diasporic persons over the course of the early to mid-twentieth century in North America, in Africa, and throughout the rest of the world: *Black Folk Then and Now: An Essay in the History and Sociology of the Negro Race* published in 1939,¹⁰³ and *Africa in Battle against Colonialism, Racialism, Imperialism* published in 1960.¹⁰⁴

Kwame Anthony Appiah, publishing in 1992, more than a decade before the announced completion of the Human Genome Project (HGP) in 2003, began to consider (as I see it, quite precociously) some of the then-present and potential repercussions of human genome sequencing. As Appiah wrote about it then, rather than being feared as a mechanism of the reproduction of essentialist racialism with its incumbent racism, the then-hoped-for result of human genome sequencing was liberation from the tyranny of hierarchical racial essences.

¹⁰³ Du Bois, W. E. B. *Black Folk Then and Now: An Essay in the History and Sociology of the Negro Race*. Oxford University Press, 1939.

¹⁰⁴ Du Bois, W. E. B. *Africa in Battle against Colonialism, Racialism, Imperialism*. Afro-American Heritage Association, 1960.

At that time, though the HGP was not yet complete, there was enough evidence coming from laboratories researching human genetic variation to say that there was only a tiny fraction of variation in genomic composition among all humans, and that there is more variation within those groups called races (as variously delineated) than there were among them. In the chapter “Illusions of Race” in *In My Father’s House: Africa in the Philosophy of Culture*,¹⁰⁵ Appiah works from these data and related to establish the illusoriness of race as a biological or genetic essence.

Appiah also utilizes in his argumentation the history of the concept of race, using as evidence changing concepts of race over time and place, and particularly the continuously fluctuating and inconsistent manners of naming, ranking, describing the attributes of, and drawing boundaries among racial groups. To provide clear and easily referenced examples of these constant changes, Appiah, along with many others, have pointed to the categorization schema utilized in government census data, in particular United States federal censuses.¹⁰⁶ Appiah describes how the essentialist and hierarchical, biologically innate, understanding of race (scientific racism) gained prominence over time, arising in large part out of nineteenth century Western scientific and philosophical ideologies.

In applying Appiah’s theoretical understanding of race in terms of genetics (even as presented solely in *In My Father’s House*, though I will utilize many of Appiah’s theories and concepts from other writings as well) to direct-to-consumer ancestry testing,

¹⁰⁵ Appiah, Kwame Anthony. *In My Father’s House: Africa in the Philosophy of Culture*. Oxford University Press, 1992.

¹⁰⁶ Bennett, Claudette. “Racial Categories Used in the Decennial Censuses, 1790 to the Present.” *Government Information Quarterly*, vol. 17, no. 2, Apr. 2000, p. 161.

it is clear that analyzing the ways that the boundaries are drawn between ancestral-geographic (as they are typically termed), that is, often racialized and ethnicized groups, is adamantly required. To consider one practical example, the results provided by different DTC ancestry testing companies to consumers varies significantly in the ways that they present the differentiations among human groups and label them (the details of some of these methodologies of grouping will be analyzed in the next chapter as they come up in individual case analyses). That is, one consumer who takes several different tests can get significantly different results, in part because of the variations in the ways that those groupings are defined by the different testing companies. Indeed, one consumer may get differing results from the same sample-test over time due to the ever-changing algorithms utilized by testing services. All of this would point to the functionality of the application of Appiah's approach to genetic ancestry testing. For now, what might be quickly noted is that what those groups are termed collectively also varies: e.g., 23andMe uses "ancestry" but also highlights "geographic regions"; Ancestry currently favors "ethnicity" and (unsurprisingly) also "ancestry"; African Ancestry, though they obviously headline "ancestry" in their corporate name, currently emphasizes "roots," "identity," and "legacy" in its marketing, and other terminologies present in the marketing of their relatively more customized service include those of "tribe" and "clan." (Also noted, almost all services surveyed, even beyond these three, use the individual-personal "You" and the possessive "Your" a lot, and prominently so. Of course, this is a long-time trend in marketing generally.)

Returning to Appiah's anti-essentialism with regards to race, his methodology is to approach race in terms of its phenomenological properties (related to human

experiences of race), and, rather than seeking to derive an essential or biological definition from the phenomena perceived, aiming to understand its social construction.¹⁰⁷ Fulfilling this methodology, Appiah argues that “race is a sociohistorical notion.”¹⁰⁸ Applying this specifically to DTC ancestry testing in its current forms today, in order to understand how the concept of race is functioning, it would be necessary to think of this sociohistoricity for persons in a variety of roles, from scientific researchers, to industry leaders, to marketers and other employees and contractors, to test-takers, and so forth, and to analyze how the concept of race does or might vary among people in those roles vis-à-vis their being in those roles. The sociohistorical literature reviewed previously provides much information (and analytical tools also) to inform and deepen these sorts of analyses.

In *The Ethics of Identity*¹⁰⁹ in 2005 and continuing in *The Lies That Bind: Rethinking Identity, Creed, Country, Color, Class, Culture*¹¹⁰ in 2018, Appiah develops many of these themes that were present in earlier works but is focused more intently on ideas-concepts of identity, and not just in terms of race as is evidenced in the subtitle of the latter of those two monographs (so memorable in its alliteration). To outline those forms of identity as Appiah describes them: “creed,” religious life is characterized by social practices and beliefs rather than (or more than) sacred scriptures; “country,” as it arose from 19th century nationalism with its emphasis on the values of personal autonomy, liberty, and independence, which were subsequently naturalized as innate

¹⁰⁷ Appiah, 1992, p. 38.

¹⁰⁸ Appiah, 1992, p. 29.

¹⁰⁹ Appiah, Kwame Anthony. *The Ethics of Identity*. Princeton University Press, 2005.

¹¹⁰ Appiah, Kwame Anthony. *The Lies That Bind: Rethinking Identity, Creed, Country, Color, Class, Culture*. First edition., Liveright Publishing Corporation, a division of W.W. Norton & Company, 2018.

values; “color,” race, as it also arose from the 19th century, but also from the rising epistemic authority of the biology of race; “class,” determined to be incoherently and inconsistently defined, and therefore conceptualizations sometimes more harmful than helpful, as often claimed to be intended; and “culture,” Appiah’s category of greatest scope, encompassing other aspects of personal and collective human identity, and exploring ideas about the attribution of meaning to origin stories, and especially their relation to who is determined to be an inheritor of the Western tradition, or not. Several, if not all, of these types of identity as described by Appiah can be utilized in the study of genetic ancestry testing—most clearly country and color, but also creed in terms of certain geographic ancestral groups that (as defined by testing companies) are named after designations for religious-ethnic groups (prominent example: “Jewish genetic ancestry”).

Another selection from Appiah’s body of work that is relevant in considering questions of the social nature or construction of race is *Lines of Descent: W. E. B. Du Bois and the Emergence of Identity*, published in 2014,¹¹¹ wherein Appiah utilizes many of the epistemological and ethical frameworks developed in previous works around definitions-conceptualizations of identity and the nature-idea of race, examining them in the historical and philosophical context of the works and influence of W. E. B. Du Bois. Also interesting is Appiah’s early article from 1990, “‘But Would That Still Be Me?’: Notes on Gender, ‘Race,’ Ethnicity, as Sources of ‘Identity,’”¹¹² which puts into a more

¹¹¹ Appiah, Kwame Anthony. *Lines of Descent W. E. B. Du Bois and the Emergence of Identity*. Harvard University Press, 2014.

¹¹² Appiah, Kwame Anthony. “‘But Would That Still Be Me?’: Notes on Gender, ‘Race,’ Ethnicity, as Sources of ‘Identity.’” *Journal of Philosophy*, vol. 87, no. 10, 1990, pp. 493–99.

extended perspective the evolution of Appiah's thought in these realms. His early optimism that genetics might serve as an anti-racist educational tool appears to have been tempered.

In 1998, in *Blackness Visible: Essays on Philosophy and Race*,¹¹³ Charles W. Mills explores related theories and concepts especially in two essays, "Alternative Epistemologies" and "'But What Are You *Really*?': The Metaphysics of Race." The first of these two essays will be reviewed with a focus on Mills's epistemology, and second with a focus on his understanding of the nature of race. Then there will be consideration of how these understandings in turn might be applied to genetic ancestry testing, and what sort of knowledge, according to Mills's epistemology, might be gained, not gained, or 'incorrectly' gained by it, especially with regards to the nature-concept of race. Then, I will reflect on how Mills's epistemology and understanding of the nature-concept of race as it might be applied to our understanding of how the systems of racialisms, including racisms, is indeed reproduced by genetic ancestry testing, drawing an example from Mills's application of Marxist theory.

In "Alternative Epistemologies," Mills addresses three primary categories of epistemology that might be termed "alternative" ("alternative," that is, to a Western traditional understanding of epistemology that is historically-purportedly universal and value-neutral with regards to social positioning): a) feminist epistemology (including standpoint theory); b) a critique "parallel" to feminist critiques which have been put forward by "black philosophers, who have argued that philosophy has not been immune to the racism that has pervaded so much of Western thought about non-European

¹¹³ Mills, Charles W. *Blackness Visible: Essays on Philosophy and Race*. Cornell University Press, 1998.

peoples”;¹¹⁴ and c) Marxist theory. Included in each of these discourses are versions of standpoint theory, arguing and advocating that members of subordinated groups have (and should have) a privileged epistemic position with regards to their understanding of the social structures of oppressions based on social group identities.

Mills argues against a postmodern understanding of knowledge, arguing instead for a “situated objectivism,” that is unifying in the midst of pluralism, yet retains the capacity to make normative claims. That is, according to Mills, social context does matter in considerations of race, but relativism is to be avoided both for epistemological and for ethical reasons. It is interesting to consider this in light of genetic ancestry testing. It seems possible that a situated objectivism about the ways in which race (as a phenomenological object) is manifest in genetic ancestry testing could be developed.

In *Blackness Visible*, Mills states that the task of constructing a black epistemology is work that has yet to be completed. What arises immediately to mind upon re-reading this is the sociological work of Patricia Hill Collins in *Black Feminist Thought: Knowledge, Consciousness, and the Politics of Empowerment* in 1990,¹¹⁵ and subsequently Kristie Dotson’s 2015 article about the development of a black feminist epistemology, work Dotson characterizes as having been “inherited” from Hill Collins.¹¹⁶ Dotson’s outline for a black feminist epistemology interestingly, and very helpfully in the analyses being undertaken in this research, incorporates both those things which would

¹¹⁴ Mills, 1998, p. 21.

¹¹⁵ Hill Collins, Patricia. *Black Feminist Thought: Knowledge, Consciousness, and the Politics of Empowerment*. 1990. 2nd ed., Routledge, 2009.

¹¹⁶ Dotson, Kristie. “Inheriting Patricia Hill Collins’s Black Feminist Epistemology.” *Ethnic and Racial Studies*, vol. 38, no. 13, 2015, pp. 2322–28. See also the earlier article, Dotson, Kristie. “Black Feminist Me: Answering the Question ‘Who Do I Think I Am.’” *Diogenes*, vol. 59, no. 3–4, 2012, pp. 82–95.

surely be construed by any epistemologist to be a proper subject of study, such as valid criteria for determining and confirming what is called knowledge, but Dotson also integrates into the definition-conceptualization of knowledge considerations of community and morality, which have historically not been included, or have certainly not been fundamental, and have even been explicitly excluded from Western philosophical theories of knowledge. I have in my reading queue Patricia Hill Collins's much more recent 2019, *Intersectionality as Critical Social Theory*.¹¹⁷ I greatly appreciate how between Hill Collins and Dotson, and among others participating in these discourses,¹¹⁸ there is such a dynamic interdisciplinarity of subjects and methodologies—and one of the sort being put together in this review, humanistic (specifically, philosophical) and social scientific (specifically, sociological)—and look forward to continuing to follow them.

In “‘But What Are You *Really*?’: The Metaphysics of Race,” Mills addresses the metaphysical problematics that arise when we think about the ways in which race is real as it is lived—how it is an ontologically valid category (and therefore racial identity a valid concern)—despite its lack of an essential biological (or in the case of this research, specifically genetic) reality. Regarding what is sometimes called “color blindness” or “not seeing race,” Mills states, “That race *should* be irrelevant is certainly an attractive ideal, but when it has *not* been irrelevant, it is absurd to proceed as if it had been.”¹¹⁹ Mills proceeds to discuss “horizontal” and “vertical” conceptualizations of race, pointing out that ideas about race always involve hierarchies, even when disguised.¹²⁰

¹¹⁷ Hill Collins, Patricia. *Intersectionality as Critical Social Theory*. Duke University Press, 2019.

¹¹⁸ See, for example, Story, Kaila Adia. *Patricia Hill Collins: Reconceiving Motherhood*. Demeter Press, 2014.

¹¹⁹ Mills, 1998, p. 41.

¹²⁰ Mills, 1998, p. 42.

For Mills, understanding the ontology of race and the epistemology of race are innately interrelated. The ontic character of race, the attribute of its reality, consists in that it is known and experienced and how it is known and experienced. Accordingly, Mills concludes that understanding the ontology and epistemology of race will lead to a greater understanding of social dynamics, and vice versa. This is my hope and thought also (along with, I imagine, most all other persons who do this variety of theoretical work). Here I think of the social scientific literature about how racial concepts are utilized in DTC DNA ancestry testing as has been reviewed, and how it might inform us about the (social) realities of race, and from this, what knowledges and moralities we might derive as, in part, constituting it.

In listing the criteria for racial identity, Mills includes: “ancestry” as culturally relative and historically-entrenched (United States cultural-historical example: “one-drop rule”); “self-awareness of ancestry,” which is both an ontological and epistemological question as Mills frames it; and, “public awareness of ancestry,” which is tied to the visible (or otherwise perceivable through the senses) phenotypical traits of people in combination with how those traits are interpreted by individuals in their given sociohistorical contexts.¹²¹ It is interesting to ponder how this “visibility” is expanded and given greater complexity with the availability and easy-shareability of genetic ancestry test results.

In Mills’s most widely known monograph and theory of the same name, *The Racial Contract*,¹²² published in 1997, Mills establishes theoretical premises for many of

¹²¹ Mills, 1998, pp. 50-54.

¹²² Mills, Charles W. *The Racial Contract*. Cornell University Press, 1997.

the arguments in the essays in the *Blackness Visible* collection. In *The Racial Contract*, arguments are presented that well establish that (at least) some of the central moral and political philosophies in Western intellectual discourses (for example, Thomas Hobbes, John Locke, Jean-Jacques Rousseau, and Immanuel Kant) are mistaken in that they present race and ethnicity as though they were neutral categorizations, wherein in the reality is that there is a “racial contract” in which white and non-white are not neutral categories, but exercises of privilege and instruments of domination.

In short form, Mills’s theory is that persons who are not of white, European descent were-are not party to the social contract so heavily theorized by Enlightenment thinkers; non-white persons were-are excluded as persons. An application of Mills’s method of theorization, as utilized in developing racial contract theory, might be useful in societal-scale analyses of genetic ancestry testing (that is, in thinking about how it is both an exercise of privilege, and how it is or might be utilized as an instrument of domination), especially with regards to the pseudosynonyms and surrogates for racial categories that are so often employed, including in more seemingly socially neutral language such as “geographic ancestry.”

More recently in 2017, in *Black Rights / White Wrongs: The Critique of Racial Liberalism*,¹²³ Mills provides an analysis of the much more contemporary John Rawls’s “ideal theory” as theory and as ideology. Mills provides a theory-vision for a new “black radical liberalism” that would rethink and resituate Rawls’s theory (along with that of Kant, Karl Marx, Du Bois, among others), and would incorporate black radical thought

¹²³ Mills, Charles W. *Black Rights/White Wrongs: The Critique of Racial Liberalism*. Oxford University Press, 2017.

such as black nationalism in the United States, and African and African diasporic Marxist traditions. Application of this approach might be illuminating, for example, with regards to understanding some of the ways that the racial ideologies that underpin much of DNA ancestry testing have long-reaching roots in the history of Western thought, and how these ideologies have been critiqued from radical, oppositional perspectives both internal and external to the so-called West or Global North. Another monographic writing of Rawls applicable to the task at hand is *Radical Theory, Caribbean Reality: Race, Class and Social Domination*, published in 2010.¹²⁴

In order to show how it is that the theorizations presented by Linda Martín Alcoff might be used in the development of the epistemologies of genetic ancestry testing, I will situate Alcoff's epistemology as Alcoff did, in the context of feminist theory. In the collection *Feminist Epistemologies*, published in 1993,¹²⁵ for which Alcoff served as an editor along with Elizabeth Potter, Alcoff and Potter outline, in their coauthored introduction to the volume, "When Feminisms Intersect Epistemology,"¹²⁶ the landscape of feminist epistemologies. Broadly (though not universally) construed, feminist epistemologies bring into question what Alcoff and Potter term "epistemology 'proper,'"¹²⁷ which aims for a universal account of knowledge, ignoring the greater context of society and the situatedness of knowers in that matrix of economic, political, and other social factors. This given, Alcoff and Potter question whether or not such

¹²⁴ Mills, Charles W. *Radical Theory, Caribbean Reality: Race, Class and Social Domination*. University of the West Indies Press, 2010.

¹²⁵ Alcoff, Linda Martín, and Elizabeth Potter, editors. *Feminist Epistemologies*. Routledge, 1993.

¹²⁶ Alcoff, Linda Martín, and Elizabeth Potter. "Introduction: When Feminisms Intersect Epistemology." *Feminist Epistemologies*. Linda Martín Alcoff and Elizabeth Potter, editors. Routledge, 1993.

¹²⁷ Alcoff and Potter, 1993, p. 1.

‘proper’ epistemologies might be adequately-appropriately-affirmatively applied to subaltern knowers. Their answer is definitively no. There can be no perspectiveless knowledge; no knowledge without the “specificity of the knowing subject,”¹²⁸ referring to Lorraine Code’s work on subjectivity.¹²⁹ Even thinking thus far into this theorization, there are signs that DTC genetic ancestry testing may not bear the weight of these requirements; though its practice specifies knowing subjects, do its practitioners not also frequently (or always) claim a perspectiveless knowledge, which, according to this understanding, is not possible?

Alcoff and Potter delineate a number of important theoretical realms within feminist epistemology, including: standpoint epistemology as further iterated in a chapter by Sandra Harding,¹³⁰ epistemic privilege as explained by Bat-Ami Bar On,¹³¹ and the calls for the latitude to make (more) normative claims within standpoint epistemology as described by Helen E. Longino.¹³² Lastly, it is important to note that Alcoff and Potter here and elsewhere always state that feminist work is always political work—“unabashedly political,”¹³³ whether philosophical or otherwise—and that it is thusly judged on the basis of its political outcomes.¹³⁴ It should be emphasized that this is part of the reason that there remains substantial, but decreasing, dis-ease among philosophers

¹²⁸ Alcoff and Potter, 1993, p. 4.

¹²⁹ Code, Elaine. “Taking Subjectivity into Account.” *Feminist Epistemologies*, edited by Linda Martín Alcoff and Elizabeth Potter, Routledge, 1993, pp. 15–48.

¹³⁰ Harding, Sandra. “Rethinking Standpoint Epistemology: ‘What Is Strong Objectivity?’” *Feminist Epistemologies*, edited by Linda Martín Alcoff and Elizabeth Potter, Routledge, 1993, pp. 49–82.

¹³¹ Bar On, Bat-Ami. “Marginality and Epistemic Privilege.” *Feminist Epistemologies*, edited by Linda Martín Alcoff and Elizabeth Potter, Routledge, 1993, pp. 83–100.

¹³² Longino, Helen. “Subjects, Power and Knowledge: Description and Prescription in Feminist Philosophies of Science.” *Feminist Epistemologies*, edited by Linda Martín Alcoff and Elizabeth Potter, Routledge, 1993, pp. 101–20.

¹³³ Alcoff and Potter, 1993, p. 13.

¹³⁴ Alcoff and Potter, 1993, p. 14.

as a whole and feminist philosophers, so-called “proper” or “traditional” epistemologies and feminist epistemologies, while acknowledging the universal-practical divide in orientations and objectives which persists throughout the discipline-practice of philosophy is also a major, and perhaps more enveloping, factor. Along with these there is *The “Racial” Economy of Science: Toward a Democratic Future*,¹³⁵ a volume of interdisciplinary scholarship edited by Sandra Harding which I have referenced frequently in thinking about what science is over the years, and *Science as Social Knowledge: Values and Objectivity in Scientific Inquiry*¹³⁶ by Helen E. Longino, also formative in my thinking and described briefly in the previous chapter. Also related to this discourse, and focused particularly on conceptions of difference, are Iris Marion Young’s *Justice and the Politics of Difference*¹³⁷ and Sander L. Gilman’s *Difference and Pathology: Stereotypes of Sexuality, Race, and Madness*.¹³⁸

In 2006, in *Visible Identities: Race, Gender, and the Self*,¹³⁹ focusing on race and gender as forms of social identification, Alcoff argues that the visibility of these forms of human identity is a crucial component of how they are perceived and understood, despite ambiguities, and that this is furthermore confirmed by the existences of those perceived ambiguities. For example, Alcoff points to the frustration elicited in some when they are uncertain about knowledge of the gender or race of another person. The frustration that arises points not to the lack of definition of those varieties of human categorization in the

¹³⁵ Harding, Sandra G. *The “Racial” Economy of Science: Toward a Democratic Future*. Indiana University Press, 1993.

¹³⁶ Longino, Helen E. *Science as Social Knowledge: Values and Objectivity in Scientific Inquiry*. Princeton University Press, 1990.

¹³⁷ Young, Iris Marion. *Justice and the Politics of Difference*. Princeton University Press, 1990.

¹³⁸ Gilman, Sander L. *Difference and Pathology: Stereotypes of Sexuality, Race, and Madness*. Cornell University Press, 1985.

¹³⁹ Alcoff, Linda Martín. *Visible Identities: Race, Gender, and the Self*. Oxford University Press, 2006.

minds of those who are frustrated (perhaps utterly dualistic in the case of gender), but rather a very distinct and clear definition of those varieties of human categorization, those sorts of personal identities, that are being challenged.

This raises the question of whether or not these sorts of visual ambiguities with regards to race might be ‘resolved’ by the results of a DNA ancestry test, or a genetic test of any type for that matter. If knowledges of race and gender are, at least in almost all circumstances, based upon visible, or presumed to be visible—as in on the telephone, or as to those with limited or no vision, as researched by Obasogie—evidence, how might that be overwritten or otherwise altered in this new era of increasingly available genetic testing? What sorts of new visibility does DNA present? What do they mean?

Here it should be stated firmly—in the midst of a discussion about race and gender—that an aspect of the methodology in this research project is to intentionally avoid the conflation of different varieties of human identities; that is, to not draw parallels nor congruities when to do so would be epistemologically or ethically invalid. At the same time, the aim is also not to ignore investigating that which appears to be the same or similar; always seeking at once great human universals and great human particulars, and better and more meaningful understandings of their interrelationships and interdependencies.

Reflecting on the manners in which genetic ancestry testing as a scientific-technological-industrial-personal-social movement might reinforce potentially oppressive racial ideologies, and according to Alcoff’s epistemology, it might not avert “the look of

the Other,”¹⁴⁰ but rather in many instances appears to draw it especially and specifically towards others as Others, and in an essentialistic way.

In 2016, in *The Future of Whiteness*,¹⁴¹ Alcoff extends the arguments made in *Visible Identities*, and applies them particularly to whiteness. Considering a “color blind” world, or rather, and bluntly, addressing those liberals who might think that the best thing to do in the name of racism is to disavow their own whiteness, Alcoff appeals to understanding whiteness as real and unending, an integral part of human historical consciousness, and concludes that rather than seeking to end it the aim should be to analyze it and its problematics in order to achieve better understandings which could lead to cultural-political reformation.

Two other collections relevant to this research in which Alcoff has participated as coeditor are *Identities: Race, Class, Gender, and Nationality*,¹⁴² with Eduardo Mendieta, published in 2003, and *Identity Politics Reconsidered*,¹⁴³ with Michael Hames-García, Satya P. Mohanty, and Paula M. L. Moya, published in 2006.

In summary, Alcoff’s epistemology may be interpreted in application to DTC genetic ancestry testing in terms of the following: that it is not skeptical of a general or universal account; that it does not account sufficiently for social contexts and definitely does not account for the relative social status of knowers; that it is Western-ethnocentric and it does not recognize subaltern (for example, postcolonial) knowledges about

¹⁴⁰ Alcoff, 2006, p. 67.

¹⁴¹ Alcoff, Linda Martín. *The Future of Whiteness*. Polity Press, 2016.

¹⁴² Alcoff, Linda Martín, and Eduardo Mendieta, editors. *Identities: Race, Class, Gender, and Nationality*. Blackwell Publishing, 2003.

¹⁴³ Alcoff, Linda Martín, et al., editors. *Identity Politics Reconsidered*. 1st ed., Palgrave Macmillan, 2006.

identity; and, that it claims to be perspectiveless by virtue of its epistemic authority as science.

Before parting ways with a focus on Alcoff in this literature review, I would be remiss to not make note of the powerful effect that one of Alcoff's particular earlier writings, "The Problem of Speaking for Others,"¹⁴⁴ from 1991, has had on my thoughts and communications since early on in my philosophical studies of the many and intertwining social identities of human beings. The clear title of this piece says much, and its contents always make me think two, or three, or more times about anything that I might attempt to pronounce on behalf of another person, or group of persons, and especially on behalf of a group of which I am not or might not be appropriately a member or a representative. That being so, I also do not want to hesitate to do my best to speak for others when it is morally urgent and necessary to do so.

On the one hand, there are so many who continue to ignorantly or stubbornly, and often hatefully, hang onto disproven and immoral conceptions of race. Sometimes this is the case, in part, because thinking in this way actually benefits them (for example, socioeconomically), and sometimes it is also the case, in part, because they believe thinking in this way is beneficial to them when it is not in so many ways. Essentialistic racialism-racism persists in society; this is so manifest from my sociocultural-geographic point of view.

On the other hand, "'Race is a social construct,' is a common refrain among some contemporary scholars whose work focuses on the dynamics of experience around the

¹⁴⁴ Alcoff, Linda Martín. "The Problem of Speaking for Others." *Cultural Critique*, no. 20, 1991, pp. 5–32.

idea of identity and, by implication, difference between people by race.”¹⁴⁵ There is significant variety among these humanistic critiques and the presentations of the theories therein, however several features stand out as typical among the many. It is these scholarly and theoretical discourses about what is often called the social construction of race that will be surveyed here, setting aside for the moment the more colloquial (and essentialist) usages of race that still need to be combatted through education and ongoing conversations.

According to Bernard Boxill in *Race and Racism*,¹⁴⁶ if race is to be understood as a social construct, this stands in opposition to understandings of races as natural kinds or biological things.¹⁴⁷ It is an anti-essentialist stance, with a methodology that aims towards understanding race in terms of its role in the lives of individuals and society. It examines race in terms of its sociohistorical progression and takes it to be dynamic rather than static. Moreover, social constructs of identity can be intentional (e.g., national) or unintentional (e.g., some types of cooperative teams).¹⁴⁸ The “progress” of race is not entirely within the hands of the individual or small group, but it is in part, just as it is not entirely within the currents of history. Boxill demonstrates that nations, and therefore national identities can be intentionally or unintentionally formed. That is, some nations appearing to arise from anciently longstanding cultural affiliations; other appearing to be manufactured from the labor of humans organizing for a certain organization of governance and societal structure. I often read this in its theoretical relationship with

¹⁴⁵ Text from the first comprehensive exam prompt

¹⁴⁶ Boxill, Bernard. *Race and Racism*. Oxford University Press, 2001.

¹⁴⁷ Boxill, 2001, p. 29.

¹⁴⁸ Boxill, 2001, pp. 29-30.

Benedict Anderson's theory of "imagined communities,"¹⁴⁹ which is coming up next in this review.

"Despite these scholarly arguments, and also in the face of popular discourses on 'being color blind' or 'not seeing color,' [it is not correct] to infer that humans are 'nothing at all' in respect to the 'object' or 'thing' at the center of this discourse," that is, that race is not a thing. Race is a thing. It is a sociohistorical object. Boxill laid out the historical theory that the invention of the non-Western races was the result of the European elites' invention of the "idea of biological race."¹⁵⁰ According to the "radical constructionist account" of Paul C. Taylor, "Western races are social constructs..., things that we humans create in the transactions that define social life."¹⁵¹ They are metaphysically or ontologically real, but not biologically (and thus not genetically) real. These sociohistorically formed races, and hierarchical structures of white supremacy that accompany them, are invented anew continuously in our social exchanges. An example of this is what Taylor calls "race-talk,"¹⁵² social constructionist accounts of the nature of race and knowledge about race must take into account the ways that racial ideologies manifest in everyday life, such as language. Motivated not only by theoretical problems to solve, but also by a morality oriented towards social justice, those who theorize race as a social construct are often, ultimately, seeking explanatory power that will aid in the procuring greater access to resources and opportunities for members of oppressed populations.

¹⁴⁹ Anderson, Benedict Richard O'Gorman. *Imagined Communities: Reflections on the Origin and Spread of Nationalism*. 1983. Revised edition, Verso, 2006.

¹⁵⁰ Boxill, 2001, p. 34.

¹⁵¹ Taylor, Paul C. *Race: A Philosophical Introduction*. Polity Press, 2004, p. 86.

¹⁵² Taylor, 2004, p. 85.

It is important to note here, lest there be the impression that there is nothing but slight variations in agreement among philosophers, or those working in the humanities more broadly, about how to critique race, here I will reference one volume which does an excellent job of providing breadth and depth to a presentation of some of the differences within this discourse about race, both of the fine and course variety. This volume is *What Is Race?: Four Philosophical Views*,¹⁵³ and it features contributions from Joshua Glasgow, Sally Haslanger, Chike Jeffers, and Quayshawn Spencer. Although the details of the differences in these four approaches will not be further explicated here, it is certain in the mind of this writer that the differences in their approaches will certainly come up in later analyses and reflections, whether in this dissertation or in the future. The theorization of Quayshawn Spencer in particular, and having to do with a certain approach to the philosophy of biology, will present an interesting challenge and I think will be enlightening and helpful; but how so, I am not certain. Another philosopher not yet mentioned, and whose work I find to be in relation, is Naomi Zack, from whom “Geography and Ideas of Race,”¹⁵⁴ and “The Ethics and Mores of Race: Equality after the History of Philosophy,”¹⁵⁵ might be especially helpful.

Though most of what has been mentioned so far with regards to social construction theory has defined what race is *not*, examples what race *is* or includes or can be according to this variety of theoretical model have not been so prominent, including intentional, resistant, optimistic affiliations, Du Bois’s shared “impulses and ideals,”

¹⁵³ Glasgow, Joshua, et al. *What Is Race?: Four Philosophical Views*. Oxford University Press, 2019.

¹⁵⁴ Zack, Naomi. “Geography and Ideas of Race.” *Science and Other Cultures: Issues in Philosophies of Science and Technology*, Routledge, 2003, pp. 201–20.

¹⁵⁵ Zack, Naomi. *The Ethics and Mores of Race: Equality after the History of Philosophy*, Rowman & Littlefield, 2011.

examples of which might include, for example among African and African diasporic communities: Pan-Africanism (in its variety of forms), *négritude*, black nationalism, and black power movements.

The urgency and ongoing call for continuance of this discourse is propelled forward by the ongoing pervasiveness and depth of racism in a variety of forms many places throughout the world. Here the distinction (as utilized by Mills, Appiah, and others), or perhaps semi-distinction, between the terms “racism” and “racialism” is useful. Racialism is the theory or belief that human *can* be divided into categorically meaningful races that are derived from inherited biological traits, or essences. Racism is the individual and systemic marginalizations and oppressions of members of other racialized groups by virtue of their being members of (a) particular group(s) and includes a hierarchical structure that delineates the relative superiority and inferiority of the various races. Although these may appear to be ‘neat,’ distinct categories—and they are useful—it is also important to bear witness to the evidence that racialism seems to always manifest simultaneously with racism in some form. That is, when races are distinguished, they are ranked. Nonetheless, the lack of (biologically deterministic) racialism does not end racism, as it is, like race, a deeply rooted social thing.

Discourses about the social construction of race bear markers of parallels to “Benedict Anderson’s social view of the twentieth century,”¹⁵⁶ as developed in *Imagined Communities: Reflections on the Origin and Spread of Nationalism*,¹⁵⁷ published in 1983. Theories of the social construction of race, though varied, share a number of traits in

¹⁵⁶ Text from the second comprehensive exam prompt

¹⁵⁷ Anderson, Benedict Richard O’Gorman. *Imagined Communities: Reflections on the Origin and Spread of Nationalism*. 1983. Revised edition, Verso, 2006.

common with one another, including the questioning of naturalized or biologized (or geneticized) conceptions of race. Similarly, in *Imagined Communities*, Anderson aims to shatter the (naturalized) preconceptions of the reader about what nations and nationalism are.

Although nations are known to have origins (for instance, they often if not always have heroic origin myths of some kind), rather than being conceptualized as having some sort of originating starting point or gradual formation, they are often-typically described and understood by nationalistic persons and groups as extending eternally towards the past, without boundaries in time, and often as having undergone little significant change. Anderson explores this paradoxical aspect of nationalism, and part of the analysis involves the conceptualization that ideas about nationality have become naturalized. This, I would argue, bears resemblance to the conceptualizations put forth by theorists of the social construction of race, which conceptualize race as having sociological origins that have become epistemologically and ethically naturalized over time, resulting in the conception that race is an utterly natural, inherent for of human identity.

Imagined Communities provides an epic (and in that sense both impressive and inspiring but inevitably erring in some of its details) account of the historical origins of nationalism, both globally or universally construed, and particularly with regards to the emergence of European nation-states. In it, Anderson argues that nations are socially constructed, that is, sociohistorical things; that a nation is "an imagined political community." As such, national identities or nationalities may also be counted as political things or more broadly as social things.

Applying Anderson's conceptualizations of nations and nationalities, I think it can be argued, that, in the context of direct-to-consumer DNA testing, there is grossly insufficient explanation to consumer-test-takers as to the meaning of those ancestral-geographic groupings that carry names synonymous with national identities (and languages, also). At a minimum, present-day and historical national boundaries are being conflated with racial and ethnic categories, which often already infused with misleading biological definition, and subsequently genetic ancestral categories. I would argue furthermore that Anderson's historical account and analyses show that indeed even seemingly-superficially equivalent sorts of categories such as French and German today display characteristics that prove them to be of different kinds. I anticipate that both Anderson's theory of nationalism, and many of the particular examples he uses to advance it, will be useful in demonstrating, at the least, many of the ambiguities involved in the pseudonational (and linguistic) categories applied to people, as genetic, as a part of direct-to-consumer DNA ancestry testing.

In this realm of consideration several other humanistic theories come to mind as they also, in their own distinctive manners, aim to de-mythologize race, nations, and other social groupings of people that have become over time epistemologically and ethically naturalized in so many different cultures and so many different ways. These are: V. Y. Mudimbe's *The Invention of Africa*¹⁵⁸ and also *The Idea of Africa*;¹⁵⁹ Appiah's discussion of Africa as a colonial invention, the African world as a myth, and the ongoing postcolonial aspects of the structures of African societies; Edward Said's famous 1978

¹⁵⁸ Mudimbe, V. Y. *The Invention of Africa: Gnosis, Philosophy, and the Order of Knowledge*. Indiana University Press, 1988.

¹⁵⁹ Mudimbe, V. Y. *The Idea of Africa*. Indiana University Press, 1994.

description of the Western formation-formulation of the “Orient” and “Orientalism;”¹⁶⁰ and also Anderson’s later work in *Culture and Imperialism* in 1993,¹⁶¹ which makes similar arguments and derives similar concepts as are found in *Imagined Communities*, but aims to be more encompassing in terms of non-European contexts and sociohistories, including a focus on the effects of European imperialisms and colonialisms outside of Europe.

Anderson and Said, writing in English, and Mudimbe, writing in French and English, are also united with intellectuals Aimé Césaire and Frantz Fanon, both writing in French, in reflecting on and reacting to manifestations and the repercussions of colonialisms and nationalisms, which are sociohistorical designations associated with certain sorts of human actions and subsequently forms of human group identity. French state-national-imperial colonialism in particular, among the European colonialisms, is strongly associated with nationalism in its policy of what was called “assimilation.” In comparison to the general British colonial approach of not allowing persons and groups of persons indigenous to colonized territories to become British citizens, the French policy of assimilation purportedly aimed at the ideal of transforming persons and groups of persons in French colonized territories into French citizens, so long as they abided by French law and custom including language and education, and, at least in the ideal, strove to be French in every way. Reading Césaire, Fanon, Said, Mudimbe, and Anderson among many others—as well as watching films and taking in other representative artforms—has been hugely helpful in broadening and deepening my understanding of

¹⁶⁰ Said, Edward W. *Orientalism*. First edition., Pantheon Books, 1978.

¹⁶¹ Said, Edward W. *Culture and Imperialism*. First edition., Knopf, 1993.

what is meant by colonialism and postcolonialism, both in contemplating the ways in which it appears similar whenever-wherever it may be manifest, and in at the same time attempting to understand and appreciate the ways in which it is differentiated sociohistorically within these broad designations, always varying in its manifestations according to circumstances and varieties in will. In terms of attempting to grasp the work of Césaire not just as a social theorist but as the poet that he was, I have studied a beautiful side-by-side bilingual edition of the *1939 Notebook of A Return to the Native Land*,¹⁶² which was helpful in trying to grasp some of the poetics of Césaire’s work in its original language, though my French is limited. Also, very helpful in its integrative approach to these artistic-philosophical-political movements, is *The Black Surrealists*¹⁶³ by Jean-Claude Michel.

Anderson’s view of the twentieth century is also united with Césaire, Fanon, Said, and Mudimbe, in that the social constructivist approach of each (as they might be described; though the methodology and theory of each is so different) aims to elucidate how societal constructions and related human forms of self-identity and identification-by-others are dependent oftentimes on misleading narratives of many different kinds. “My family has always been French,” and “My family is all white,” are both conceivable utterances for those who are believers in such (when interpreted too simply without sociohistorical contextualization) misleading narratives. A question that remains with me is this: The desire to build something anew from the rubble left behind by conceptual deconstruction bursts from the page in Césaire, Fanon, Said, and Mudimbe. I do not

¹⁶² Césaire, Aimé. *The Original 1939 Notebook of A Return to the Native Land: Bilingual Edition*. 1939. Wesleyan University, 2013.

¹⁶³ Michel, Jean-Claude. *The Black Surrealists*. P. Lang, 2000.

detect the same level of passion for creation in my reading of Anderson, but I expect that Anderson too seeks to build also, but perhaps not so emphatically and only after very, very thorough deconstruction.

In *Peau noire, masques blancs*,¹⁶⁴ which has been translated into English as *Black Skin, White Masks*,¹⁶⁵ Frantz Fanon, writing in 1952, offers a psychological and philosophical account of the colonial, colonized and racialized (and also gendered and sexualized, although that must be set aside for just a brief moment), experiences founded in life in North Africa, particularly Algeria and Tunisia, and in France, during and prior to the period wherein anticolonial political independence movements and related wars were occurring throughout the African continent. As a psychologist by training and practice, and a political activist and instigator, Fanon's passionate accounts of experience, his own and that of his patients, and others, are existential in character, and the analyses presented in his writings are in conversation with those of Jean-Paul Sartre and other leading contemporary Francophone philosophical thinkers in Africa and in Europe.

As Appiah points out in the forward to a 2008 English translation of *Black Skin, White Masks*, although we might find some of Fanon's psychological theories questionable or unscientific today (and, I would say also, some of his ideas about gender and gender relations), there is insight to be found in Fanon's "development of a political philosophy for decolonization."¹⁶⁶

¹⁶⁴ Fanon, Frantz. *Peau noire, masques blancs*. 1952. Seuil, 1998.

¹⁶⁵ Fanon, Frantz. *Black Skin, White Masks*. Translated by Richard Philcox, First edition, Grove Press, 1952.

¹⁶⁶ Fanon, 2008 (1967), vii.

In the development of a philosophy for decolonization, Fanon provides several definitions of race, which can, in today's terminology, be quite directly applied to discourses about human social identities. For example, "What is called the black soul is a construction by the white folk." This quote from Fanon appears to, in a manner, run parallel with Anderson's conception of the formation of national identities by those holding social positions with greater access to resources and opportunities relative to those who ultimately become the subjects of nationalism. Fanon continues this discourse in *L'an V de la révolution Algérienne*¹⁶⁷ (*A Dying Colonialism*¹⁶⁸) in 1959, and in *Les damnés de la terre*¹⁶⁹ (*The Wretched of the Earth*¹⁷⁰) in 1961. *Pour la révolution africaine: écrits politiques*¹⁷¹ (*Toward the African Revolution: Political Essays*¹⁷²) was collected and published posthumously in 1964. All of these works should inform analyses of genetic ancestry testing, especially with regards to racialism, nationalism, and colonialism.

Although Aimé Césaire is not writing poetry in *Discours sur le colonialisme*¹⁷³ (*Discourse on Colonialism*¹⁷⁴), the impact of its prose is not without the passionate and unapologetic qualities of his poetry. In it, Césaire shouts for decolonization, stating forcefully that Europe cannot "justify itself" with regards to the irrational and disorganized systems of colonialism and capitalism. Whereas Europeans have labeled

¹⁶⁷ Fanon, Frantz. *L'an V de la révolution algérienne*. La Découverte, 1959.

¹⁶⁸ Fanon, Frantz. *A Dying Colonialism*. 1st Evergreen edition, Grove Press, 1967.

¹⁶⁹ Fanon, Frantz. *Les damnés de la terre*. La Découverte & Syros, 1961.

¹⁷⁰ Fanon, Frantz. *The Wretched of the Earth*. Grove/Atlantic, Inc., 2007.

¹⁷¹ Fanon, Frantz. *Pour la révolution africaine: écrits politiques*. 1964. Nouv. éd, La Découverte, 2006.

¹⁷² Fanon, Frantz. *Toward the African Revolution: Political Essays*. 1st Evergreen black cat edition, Grove Press, 1969.

¹⁷³ Césaire, Aimé. *Discours sur le colonialisme*. 1955. Sixth edition, Présence Africaine, 1973.

¹⁷⁴ Césaire, Aimé. *Discourse on Colonialism*. 1955. Translated by Joan Pinkham, Monthly Review Press, 2000.

those who live in “the colonies” as “barbarians,” Césaire declares that it is the Europeans have succumbed to barbarity. As such, and in response to such force, to decolonize must be to brutalize. The oppressive must be thrown off.

It is interesting that despite being considered one of the originators of the philosophical and political ideology called *négritude*, not all of Césaire’s writings appear to contain the essentialism that has often been critiqued as being a feature of *négritude*. Césaire’s conception seems far too dynamic for that. *Négritude*, the word being French in origin, may be thought of as a social movement and a correspondent ideology (or ideologies) that affirms the positive values of Black consciousness, which was originally developed in the 1930s and 1940s by intellectuals of African descent living and working in France. *Négritude* can be thought of as a resistance to colonialism by intellectuals of Africa (particularly so-called Francophone Africa, those regions claimed and exploited by France as colonies, wherein French became a dominant language) and the African diaspora, but also, as is emphasized by Reiland Rabaka in *The Negritude Movement*,¹⁷⁵ it might be understood as part of an ongoing process of both creativity and resistance beginning (at least) with the work of W.E.B. Du Bois, and continuing through the writings of Frantz Fanon and beyond.¹⁷⁶ In other words, *négritude* is a reaction in the sense that it certainly responds to the colonial and post-colonial situations, however it is also an action of its own accord in the sense that it flowed from previous intellectual and artistic traditions of Africa and the African Diaspora.

¹⁷⁵ Rabaka, Reiland. *The Negritude Movement: W.E.B. Du Bois, Leon Damas, Aime Césaire, Leopold Senghor, Frantz Fanon, and the Evolution of an Insurgent Idea*. Lexington Books, 2015.

¹⁷⁶ Rabaka, 2015, pp. 33-36.

Donna V. Jones in *The Racial Discourses of Life Philosophy: Négritude, Vitalism, and Modernity*,¹⁷⁷ analyzes Césaire's ambivalence toward fully embracing an essentialist conception of African identity as follows: "Yet *Notebook* reveals against manifest authorial intention some ambivalence about simply being fundamentally black, for Césaire rejects so many black identities, one persona after another, masks that his own Antillean displacement and Nietzschean radicalism disallows him unlike Senghor, from ever wearing comfortably."¹⁷⁸

Returning to Fanon, in *Fanon's Dialectic of Experience*,¹⁷⁹ Ato Sekyi-Otu argues that trends in the interpretation of the writings of Fanon have tended to be problematically decontextualizing in such a way as to disregard the histories and discourses in which Fanon's work is embedded. Rather than emphasizing Fanon as psychologist, philosopher, or more broadly, social theorist, Sekyi-Otu makes persuasive arguments for reading Fanon within a dialectical context,¹⁸⁰ a humanistic context, dramatically conversant with the political context of the histories of African revolutions for independence, particularly the battle for independence in Algeria, by which Fanon's works were informed and in which Fanon was deeply, personally involved in intellect and in body.¹⁸¹ Moreover, Sekyi-Otu addresses implicitly postmodern or globalist readings of Fanon, and issues regarding problematic translations of Fanon, which Sekyi-Otu argues may be proven to be badly misleading.

¹⁷⁷ Jones, Donna V. *The Racial Discourses of Life Philosophy. Négritude, Vitalism, and Modernity*. Columbia University Press, 2010.

¹⁷⁸ Jones, 2010, p. 164.

¹⁷⁹ Sekyi-Otu, Ato. *Fanon's Dialectic of Experience*. Harvard University Press, 1996.

¹⁸⁰ Sekyi-Otu, 1996, p. 5.

¹⁸¹ Sekyi-Otu, 1996, pp. 2-3.

In order to defend these theses, Sekyi-Otu establishes a methodology for “rereading Fanon,” which Sekyi-Otu describes as a “post-independence hermeneutics.”¹⁸² Throughout this focused and intense monograph there is an “anti-psychologistic”¹⁸³ interpretive stance that takes Fanon not as psychologist nor as philosopher proclaiming exclusively or principally theoretical ideas,¹⁸⁴ but rather Fanon as a contributor-participant in a complex and endlessly-dynamic political dialectic in which efficacy and engagement are of central importance (as is clearly the case with Césaire and Mudimbe also, though their writings are not the subject of Sekyi-Otu’s re-interpretation). Sekyi-Otu engages contentiously and repeatedly with the writings of Homi Bhabha that emphasize the (of course, present) psychological orientation of Fanon’s work, but also what Sekyi-Otu views as Bhabha’s (errant) ripping away of both universal ethical proclamations and political situatedness from Fanon.¹⁸⁵ According to the interpretive framework that Sekyi-Otu is presenting, Fanon’s theorization is not quite as postmodern-postcolonial as Bhabha interpreted it to be. In contrast, Sekyi-Otu emphatically points out the ways in which Fanon is deeply and perhaps most primarily a “humanist,” interested in “human things,”¹⁸⁶ and squarely aimed at liberatory ends for (post)colonized persons and communities.

The central chapters of *Fanon’s Dialectic of Experience* continue this “rereading of Fanon,” and furthermore detail some of the consequences of this mode of

¹⁸² Sekyi-Otu, 1996, p. 10.

¹⁸³ Sekyi-Otu, 1996, p. 7.

¹⁸⁴ Sekyi-Otu, 1996, p. 43.

¹⁸⁵ This is perhaps most evident on pp. 44-45, however this idea is found throughout Sekyi-Otu's monograph.

¹⁸⁶ Sekyi-Otu, 1996, p. 46.

interpretation. In “Immediate Knowledge,”¹⁸⁷ Sekyi-Otu delves into the problematics of reading Fanon (solely) within the dialectical materialist tradition following Karl Marx and Friedrich Engels, and argues that what Fanon accomplishes is an “evident parody” of this manner of thinking; rather than confirming the theories of Marx and Engels, according to this method of rereading, Fanon demonstrates history to be antidialectical.¹⁸⁸ In “Immediate Knowledge,”¹⁸⁹ Sekyi-Otu addresses (among other themes) the metaphysical repercussions of this interpretive methodology dealing particularly with the ways in which concerns and conceptualizations of race interplay in dynamic ways as reactions to the (post)colonial context. “Bewildering Enlightenment,”¹⁹⁰ deals similarly with the issues of nationalism that in great measure follow from discussions of race within the African postcolonial context. In this chapter Sekyi-Otu interestingly and repeatedly utilizes G. W. F. Hegel as an interlocuter, taking into account (and defending) this manner of utilizing Hegel in such a way despite “the monumental racism and sexism of his [Hegel’s] metaphysics and philosophy of history.”¹⁹¹ Lastly, at the end of the chapter entitled “Political Judgment,”¹⁹² Sekyi-Otu, very interestingly for this reader at least, cuts across the dialectic in which he himself is participating, and addresses the ways in which all of the aforementioned discourse does not fully take into account the problematic situations of women in (it appears to him) all cultural milieus.

¹⁸⁷ Sekyi-Otu, 1996, pp. 10-46.

¹⁸⁸ Sekyi-Otu, 1996, p. 49.

¹⁸⁹ Sekyi-Otu, 1996, pp. 47-100.

¹⁹⁰ Sekyi-Otu, 1996, pp. 101-156.

¹⁹¹ Sekyi-Otu, 1996, pp. 111-112.

¹⁹² Sekyi-Otu, 1996, pp. 157-235.

The epilogue of *Fanon's Dialectic of Experience* summarizes and synthesizes the numerous strands of interpretation and investigation that have been presented,¹⁹³ and concludes on a note that, according to Sekyi-Otu (and I agree) is quite fitting for a book on (re)reading Fanon—namely, the recollection of Fanon as a political, humanist, and particularly-situated creator of utterances which are both reflective of and reactive to the endeavor of African political independence. Sekyi-Otu argues, “as the African world searches for new ways to recover the promise of freedom and community squandered in three blighted decades of postcolonial independence,”¹⁹⁴ it is fruitful to continue to look to Fanon, and to “reread” him, understanding the promise that he saw and garnering inspiration from his writings.

I have provided this quite detailed review of Sekyi-Otu's (re)interpretation of Fanon because it has been deeply and multiply influential in my understanding of Fanon's contributions to the discourse in which I am now participating. Fanon is one of the intellectuals whom I encountered early on in this journey thinking about humanity and its many forms of identity-identification, and, having been familiar with several of Fanon's works for some time, I have come to more than one way of thinking about how Fanon's psychological-philosophical-social-political theory might inform better comprehension of human social identities. And although I can't say that Sekyi-Otu's (re)interpretation of Fanon has completely reformed how I understand Fanon's work, it has profoundly influenced it, and in turn influenced my thinking about what identity is in its relationship to individual persons and in its relationship to communities of persons.

¹⁹³ Sekyi-Otu, 1996, p. 237.

¹⁹⁴ Sekyi-Otu, 1996, p. 240.

It should also be noted here that an important aspect of my especial interest in the work of Fanon has to do with its relation to existential discourses. Ultimately what I find when I think about Fanon is that he is deeply concerned with the experience of human existence, and this founding is redoubled by Sekyi-Otu's (re)interpretive theory which is accordingly titled with "experience" highlighted and grammatically indicated as the primary object of study. When I read and think about all of this it inevitably is taken in combination with my longtime reading of Jean-Paul Sartre's, *L'Être et le néant: Essai d'ontologie phénoménologique*¹⁹⁵ (*Being and Nothingness: A Phenomenological Essay on Ontology*),¹⁹⁶ as well as my more recent encounter during my doctoral studies with "Orphée Noir"¹⁹⁷ ("Black Orpheus"¹⁹⁸). "Orphée Noir" is the preface to *Anthologie de la nouvelle poésie nègre et malgache (Anthology of Negro and Malagasy Poetry in French)*, edited by Léopold Sédar Senghor.

Jean-Paul Sartre's articulations of the (existential) dynamics of experience are not easy for me to summarize or interpret though I have read and considered them much and over a long period of time. Nonetheless, here I will attempt to briefly outline Sartre's conception of the relationship between experience and existence, as I understand it presently, and insofar as it seems necessary to relay this aspect of my thinking as it will surely be applied in future analyses.

Consciousness is an activity of revealing. Consciousness is always intentional. The conscious being experiences being-for-itself in its own "oblique" reflection, which is

¹⁹⁵ Sartre, Jean-Paul. *L'être et le néant: essai d'ontologie phénoménologique*. Librairie Gallimard, 1943.

¹⁹⁶ Sartre, Jean-Paul. *Being and Nothingness: An Essay on Phenomenological Ontology*. 1943. Philosophical Library, 1956.

¹⁹⁷ Sartre, Jean-Paul. "Orphée Noir." *Présence Africaine*, no. 6, 1949, pp. 9–14.

¹⁹⁸ Sartre, Jean-Paul. "Black Orpheus." Translated by Samuel W. Allen, 1963.

a negation of the world. We experience consciousness as embodied. We have consciousness of our being, consciousness of our body, as the nexus of our experience (location of consciousness) in the world. In order to understand the world and being-in-itself (nonconscious being) that is present in it, we take a phenomenological accounting of our experiences. We are careful to avoid essentializing as we confront being directly in our existence-experience. Reality is our experience, not our experience of it.

Sartre composed "Orphée Noir" in 1948 as the preface to *Anthologie de la nouvelle poésie nègre et malgache*, edited by Léopold Sédar Senghor. Notable in this short work with regards to his conception of the relation between race and identity is his discussion of the "gaze." "Today, these black men have fixed their gaze upon us and our gaze is thrown back in our eyes."¹⁹⁹ The "us" here are white European intellectual men feeling confronted by the philosophies and arts of the (men of the) *négritude* movement and other African and African diasporic intellectual discourses. The gaze is an action of objectification and alienation, instigated by the white intellectuals, and reflected back towards them by the force of the Black intellectuals' resistant, reciprocal gaze.

Sartre also writes of the poetry in the volume, "If, however, these poems give us shame, it is not with that conscious purpose: they have not been written for us. All those, colonist and accomplice, who open this book, will have the sensation of reading as though over another's shoulder, words that were not intended for them. It is for black men that these black poets address themselves; it is for them that they speak of black men."²⁰⁰ The dynamics of racial experience Sartre is describing is what might today be

¹⁹⁹ Sartre, 1963 (1949), translated by Allen, p. 7.

²⁰⁰ Sartre, 1963 (1949), translated by Allen, p. 11.

described as the solidarities of anti-racist thought and action among Black postcolonial poets and other intellectuals in these movements and with their audiences.

Last, it must be noted that Sartre's "Black Orpheus" is an anti-capitalist piece as well. Sartre concludes in it that, although Black workers share many causes for grievance with some classes of white workers, and that all workers must ultimately unite, that the Black man must, due to his experience of this world, first and foremost identify himself as Black as that is the source of his pain whether directly through the oppressive mechanisms of racism, or secondarily economic circumstances which more often than not are an ongoing legacy of that racism.

Sociohistorically, in the context of the French colonial period, the social interrelations between a member of the French intelligentsia (e.g., Sartre), and agents of anticolonialism against the French empire (e.g., Fanon) is a tangled web to unweave enough to comprehend in its constituent parts. Most broadly construed, I envision it as a part of the transition from colonial to postcolonial, and correspondingly from modern to postmodern (Appiah writes about this). Philosophically, all three have a phenomenologically oriented ontology. Reality is understood as it is experienced; no essences (or other information or guidelines that we need to derive categories) are hidden from our perception.

To return to discourses more contemporary, here I will again note how Kimberlé Crenshaw's theorization of intersectionality has invariably influenced my work, and I especially appreciate how its prominence has brought it into usages outside of academic discourses. I also think of bell hooks and Angela Y. Davis in whom I earlier encountered varieties of thinking that forced me to reconceptualize my ideas about womanhood and

feminism in the face of the overt and subtle racisms of what I had been taught prior. I am thinking especially here, and as may be applied in this variety of analyses, Davis's *Women, Race & Class*,²⁰¹ and bell hooks *Ain't I a Woman: Black Women and Feminism*.²⁰² More recent in the oeuvre of hooks and highly relevant is *Belonging: A Culture of Place*²⁰³ and *Appalachian Elegy: Poetry and Place*.²⁰⁴ For Crenshaw I refer to the earlier *Critical Race Theory: The Key Writings That Formed the Movement*,²⁰⁵ and the more recent compilation *On Intersectionality: Essential Writings*.²⁰⁶

Before concluding this review of the literature, though it is of course inherently incomplete (and is revealing to me of the situatedness-limitations of my knowledge-scope), a few theories having to do with interpretation and language will be inserted, as they invariably also inform my thinking and are apt to application in this project. One of these is Stuart Hall in *Representation: Cultural Representations and Signifying Practices*.²⁰⁷ It is also interesting to note how Hall's work interrelates with that of bell hooks, including their work done together as evident in "Dialogue between bell hooks and Stuart Hall."²⁰⁸ I have also read and taught with great interest the works of bell hooks on representation, particularly of film and of other cultural artifacts of widespread

²⁰¹ Davis, Angela Y. *Women, Race & Class*. First Vintage Books Edition, Vintage Books, 1983.

²⁰² hooks, bell. *Ain't I a Woman: Black Women and Feminism*. South End Press, 1981.

²⁰³ hooks, bell. *Belonging: A Culture of Place*. Routledge, 2009.

²⁰⁴ hooks, bell. *Appalachian Elegy: Poetry and Place*. University Press of Kentucky, 2012.

²⁰⁵ Crenshaw, Kimberlé. *Critical Race Theory: The Key Writings That Formed the Movement*. The New Press, 1995. See also by Crenshaw, "The Court's Denial of Racial Societal Debt." *Human Rights*, vol. 40, no. 1, 2013, pp. 12–16.

²⁰⁶ Crenshaw, Kimberlé. *On Intersectionality: Essential Writings*. The New Press, 2014. See also by Crenshaw, "The Identity Factor in Multiculturalism." *Liberal Education*, vol. 81, no. 4, 1995, pp. 6–11.

²⁰⁷ Hall, Stuart. *Representation: Cultural Representations and Signifying Practices*. Sage in association with the Open University, 1997.

²⁰⁸ hooks, bell, and Stuart Hall. "Dialogue between bell hooks and Stuart Hall." *Uncut Funk: A Contemplative Dialogue*, Routledge, 2017.

interests, as for example may be found in *Reel to Real: Race, Class and Sex at the Movies*²⁰⁹ and *Black Looks: Race and Representation*.²¹⁰ And, although I did not originally read the work of Alcoff with the focus of representation in mind but rather identity, in *Visible Identities*, and insofar as Alcoff is working with what may be seen and is therefore presented and represented, this theorization seems quite relevant in thinking about representation, also.

With regards to language and its interpretations, Pierre Bourdieu's conceptualizations in *Language and Symbolic Power*²¹¹ have been a longtime influence, as well as the ordinary language theory of J. L. Austin, to which I was first introduced through *How to Do Things with Words*.²¹² More recently, and with greater concentration on how human identities are always intersectional, I have been informed by the introductory-survey text *Language and Gender*²¹³ by Penelope Eckert and Sally McConnell-Ginet, and the focused studies of Miyako Inoue about a number of aspects of human identity which have been, historically and contemporarily, utilized as formative factors in Japanese languages, including gender and social class, in *Vicarious Language: Gender and Linguistic Modernity in Japan*.²¹⁴ It should be noted here that again disciplinary lines have been crossed, somewhat unintentionally, in my research; while

²⁰⁹ hooks, bell. *Reel to Real: Race, Class and Sex at the Movies*. 1996. Routledge, 2009.

²¹⁰ hooks, bell. *Black Looks: Race and Representation*. Routledge, 2015.

²¹¹ Bourdieu, Pierre. *Language and Symbolic Power*. Harvard University Press, 1991. See also by Bourdieu, "Structures, Habitus, Power: Basis for a Theory for Symbolic Power." *Culture/Power/History: A Reader in Contemporary Social Theory*, edited by Nicholas B. Dirks et al., Princeton University Press, 1994, pp. 155–99.

²¹² Austin, J. L. (John Langshaw). *How to Do Things with Words*. Harvard University Press, 1962.

²¹³ Eckert, Penelope, and Sally McConnell-Ginet. *Language and Gender*. 2nd ed., Cambridge University Press, 2013.

²¹⁴ Inoue, Miyako. *Vicarious Language: Gender and Linguistic Modernity in Japan*. University of California Press, 2006.

Bourdieu's and Austin's works are often taught as philosophical texts, the scholarship of Inoue, Eckert, and McConnell-Ginet falls primarily within the discourses of sociolinguistics (though all are interdisciplinary, too). Overriding this is the fact that my studies are confined largely to the English language, with readings in other languages being very limited, especially with regards to texts written in languages that originated outside of western Eurasia, which I usually encounter in translation only. Again, this is showing of my cultural-geographic perspective-standpoint, which I aim to keep in awareness as I study, reflect, and communicate, both to learn from and to revise as is possible.

It has been the case in this literature review that I have been unable to cover all that might be covered because completing such a task is inherently impossible, but also due to my own limitations of capacity and those of the time and space available. With regards to social scientific literature having to do with the science of genetics, and especially that which has DNA ancestry testing as its particular subject, I continue to aim at comprehending the breadth and depth of these scholarly discourses and to stay as current and as informed as I can. This literature from the social sciences is diverse, complex, and so significant in the work that I aim to do. However, this social scientific literature may also be understood to be somewhat, or rather much more, contained than the literature from the humanities that I attempt to take into account in my analyses and communications. This of course is due in part to the far more honed-particular topical focus of that which I am seeking knowledge about in the literature from the social sciences. It is also to do with the fact that, seeking a degree in the humanities and having

studied it for many more years, there is so much more that I have to draw on from that intellectual-artistic-experiential realm, and following that state of being a more comprehensive but admittedly vaguer definition of what all might be entailed. What comparative humanistic theory does not have something to do with who human beings are in relation to one another, that is, something to do with their social identities?

With that left as an interminable and wonderful problematic to address, and from which to learn during analytical practice, now is a good time to move onwards, to apply what has been gained in this review of literature—both from the humanities and from the social sciences—in the analyses of individual-personal narratives-cases drawn from real life experiences of DNA ancestry testing.

CHAPTER THREE

HUMANISTIC ANALYSES: EPISTEMOLOGIES AND ETHICS OF GENETIC ANCESTRY TESTING

This dissertation began with a series of brief narratives, stories told about human life, each having something to do with human experiences of DNA ancestry testing. Each also had something to do with human identity.

Since that introduction, it has been established that genetic ancestry testing should be construed as a recent and ongoing movement in humanity, of substantial proportions and with significant consequences of many kinds, and with immense potentialities that are yet unknown. Following this, and in order to comprehend such a movement as best as possible, it must be considered not only in its scientific, technological, and industrial aspects (which have their own intertwining significances), but also in its aspects that are both individual-personal and communal-social.

The literature of the social sciences informs, both pragmatically and theoretically, about many aspects of this contemporary movement in humanity, spawned from the advent of the science of genetics. These social scientific discourses are diverse, have been ongoing since at least the 1970s, and continue to provide crucial and fascinating insights into this scientific-technological-industrial-personal-social movement. The literature of the humanities provides an ancient and bottomless well of ideas by and about humans in their conceptions of themselves and in relation to others, as individual persons and as members of groups-communities. Herein this is termed “identity,” construing this

concept or set of concepts broadly and from a humanistic perspective (as described in the Introduction), but also keeping in mind simultaneously that this term is being used contemporarily in hot political discourses as a part of what is sometimes described as “identity politics.” The focus in this chapter is philosophical, with epistemological and ethical questions and problematics foremost in mind; important current political debates and considerations will be reintroduced into this dissertation in Chapter Four.

In this analytical chapter, Chapter Three, the *modes* gained—conceptualizations and theories outlined in the literature reviews in Chapter Two—will be applied in case-by-case analyses of these human stories that have been told. These narratives, among so many others,²¹⁵ have inspired me in my research, driven it forward, and, in accordance with the methodology and intended outcomes of this research, have kept me and it better grounded in human experiences, at least as they are reported or narrated, and insofar as I, from my own perspective-standpoint, may understand them. Though the formal goals of this research project are greater conceptual and theoretical clarity, the human-ness of the work and its potential pragmatic helpfulness towards good ends, are constantly in mind.

Four narratives have been selected for detailed case analysis, the variety of which enable the employment of a number of different analytical modes, and therefore a number of different kinds of possible conceptual insights into these human narratives and the interesting philosophical problematics that can be detected within them. Each of these narratives is focused on an individual person and their reported experiences of genetic ancestry testing.

²¹⁵ See Appendix II for a list containing a sampling of just a few of the many sources of human discourse and narrative encountered during the research process.

In short form, the aim is to accomplish an interdisciplinary, humanistic, comparative inquiry into the epistemologies and ethics of genetic ancestry testing through the analysis of narratives-cases, each drawn from real life experiences of DNA ancestry testing. How might we interpret the significances of these stories that we tell each other about our genetic compositions and our human ancestries?

In order to analyze each narrative, first it is described, then it is surveyed in order to determine those varieties-types-kinds and conceptions of human identity that are most superficial or obvious in it, for example, those which are explicitly stated. Varieties of human identity will be engaged with constantly both in their concepts-senses as means of self-identification, and in their concepts-senses as means of identification-by-others.

After examining those concepts of human identity which are (at least to this analyzer) most obvious in it, each case analysis will work towards those identities-identifiers-identifications which require more refined or distinct analytical modes—theories and/or terminologies—for greater comprehension. Questions being considered in these analyses include: What ideas about human groups are being employed? What types and schemata of categorization are being used for those groupings? What epistemologies and ethics are being utilized in the delineations of the groups-categories? When considering individual-personal senses-concepts of social identity, what are thought-felt-experienced-reported to be unifying factors? What is the sense of belonging? Or lack thereof? What varieties of othering or exclusion are occurring? To get to the core of what is being examined in these analyses, what sorts of knowledges and ethics did this DNA

testing experience obscure? What sorts of knowledges and ethics did it, or might it, enable?

Appreciating the breadth and complexity of these questions—and what I argue is their sweeping collective significance, both conceptual and practical—for each narrative-case, rather than attempting to answer this long list of questions in what would inevitably be a superficial manner, more narrowly defined questions are developed and explicitly stated. These targeted questions are formed in response to what I consider to be some fundamental problematics having to do with identity which might be brought out in each particular case through its humanistic analysis, and also are very much inspired by, inherited from, and respondent to the theoretical modes, and the scholars who created those modes, which are to be applied in each case.

There is an attempt in each narrative case analysis to remain focused so that each may, at least in a sense, stand on its own informatively and argumentatively, and so that each might be communicated independently. However, those goals and purposes stated, it is certain that insofar as the theoretical trajectory of this research project points overall towards a more integrative understanding of this important movement in humanity, the analyses are and should be understood and interpreted as interrelated.

The overall methodological approach of this research project, as has been described previously, is one that aims towards the simultaneous appreciation of that which is individual-personal and that which is communal-social—that which is particular and that which is universal in humanity—never forgetting one in the midst of the other. In this particular chapter, the narratives chosen, and the analytical methodologies employed, are intended to facilitate and to stimulate the exploration of many of the

epistemological and ethical questions and problematics that have been noted in previous chapters. It is hoped and expected that some answers and solutions will be determined along the way—undoubtedly partial and perhaps tentative—but it is equally hoped and expected that more questions and problematics will arise. The conclusions, as bolstered by this analytical approach and methodology, aspire to be both critical and constructive.

These individual-personal narratives are, as has been demonstrated herein and in many other texts and many other creative works, elements of greater human societal discourses about the science-technology-industry of genetics and about the relationships among individual human persons and among groups-communities of humans. All are woven together with one another. Here the method is to inspect closely just a handful or so of these strands and the ways in which they are woven, as a means to better understanding the greater tapestry of human discourses, knowledges, and moralities. In attempting to isolate each strand-case there is a reaching for a deeper, more detailed understanding of its particular intricacies, the singular-personal manifestation of humanity in it, but also of how it is formed-connected with the rest, through concepts of identity. As in the meditation in Chapter One on what is DNA, the conclusions and comprehension towards which this inquiry aims are both microscopic and macroscopic.

Analysis of Narrative Case I: Jasmine

This epistemological and ethical inquiry into human identity begins by returning to the following passage from the Introduction:

DNA ancestry reveal videos posted online by untold numbers of individuals contain heart-wrenching jump cuts resulting from the abrupt turning off of the camera to make urgent phone calls. In one video, the young, Black test taker had just opened an envelope

to a report that showed no African ancestry. Another video comes to a similarly abrupt—but more felicitous—end, when the report received contains long-sought information about African matrilineal origins. Though for very different reasons, in these instances, just two among so many, the individuals in question upon receiving their test results appeared to feel the intense need to call immediately upon persons very dear to them in order to emotionally process and better apprehend the information just received.

This analysis will focus on the genetic ancestry testing narrative of Jasmine, the first individual described in the passage. Jasmine was participating in the making of what is often referred to as an “ancestry reveal video.” In the video narrative being analyzed here, presumably, and believably, when Jasmine started recording, she did not know the contents of the report sent to her by African Ancestry. Her deep surprise, shock even, upon reading it was relayed intensely to this viewer.

In the video, Jasmine begins by saying hello and introducing herself in the concise but friendly manner common for the communications medium, YouTube. While many ancestry reveal videos contain screenshots and screenshares of genetic ancestry reports received via email or accessed by test-takers through corporate websites or other proprietary software applications, Jasmine chose the drama of opening a paper envelope. As implied in the narrative as written herein, when Jasmine opened the envelope and started reading the report, her demeanor changed almost immediately from happily and curiously excited towards the pensive or even confused, with anger or sadness seemingly present as well. Before pausing the recording to call her mother (causing that dramatic jump cut in the video), Jasmine did share with her audience, very briskly and with apparent agitation, the gist of the report’s contents. As Jasmine put it, the report stated that she had “no African ancestry.”

Jasmine identified herself in the video as a Black woman, and as an African American. Jasmine did not state that she expected the report to contain information about her African genetic lineage; this was a (culturally contextualized) given that did not

require explicit statement. To be more precise about the envelope's contents, Jasmine told her audience, upon that initial reading, that the report said her lineage was "all European." She said that there was no mention of Africa at all. This is what drove her to the phone, to call Mom. Jasmine was turning to a trusted, caring, source of information outside of the report to make sense of what was in that envelope.

Leaping forward to summarize succinctly Jasmine's epistemological experience as portrayed over the duration of the video, there were at least two varieties-sources of knowledge that Jasmine utilized to make sense of this test result. Jasmine's primary question: How is it that an African American person might take a genetic ancestry test and end up with a result that indicates no African ancestry?

The first variety of knowledge that Jasmine sought (immediately and passionately) was knowledge from her mother, about family history. The second variety of knowledge that Jasmine sought was a better understanding of how genetic ancestry testing works, and in particular about the type of test that she took. Jasmine sourced information to boost this second variety of knowledge by conducting a variety of online searches. The exact sources of these online educational references were not disclosed, but Jasmine described their general contents, and what she had learned from them, in her video narrative.

This second variety of knowledge Jasmine sought out, scientific knowledge about how this particular type of genetic ancestry testing works, will be addressed first, as it is applicable in so many cases similar to Jasmine's. It also can be explained relatively

easily, and some of its problematics addressed relatively simply. As Jasmine said to her viewers at the end of the video, “This should have been explained upfront.”

The type of genetic ancestry test taken by Jasmine was an mtDNA test. African Ancestry currently markets this variety of test under the name “MatriClan Test Kit.”²¹⁶ Many other companies offer this variety of testing as well. As described in greater detail in Chapter Two, mtDNA tests enable what is often referred to as “matrilineal genetic testing,” because the genetic material sequenced in this type of test—which is located outside the nucleus as part of the mitochondria—is inherited from the ovum only, from the biological-genetic mother. During reproduction it is not combined with genetic materials from the spermatozoon, from the biological-genetic father, as is the case with the genetic material inside the nucleus (which make up the more famous 23 chromosomes of humans). Therefore, mtDNA does not change from generation to generation unless there is a mutation. Your mtDNA (excepting any possible mutations) is identical to that of the ovum from which you were, in part, generated.

Due to these features, it is possible for mtDNA to be traced generationally (and grouped) in a simpler and more straightforward manner than DNA inside the nucleus, over both the short and the long term. Genetic scientists group living and deceased humans into populations called mtDNA haplogroups (also known as “maternal haplogroups”) based on the similarities and differences among the sequences of the nucleotides in their mtDNA. (The differences in these haplogroups are generated as

²¹⁶ African Ancestry. “MatriClan Test Kit.” African Ancestry, <https://africanancestry.com/pages/matriclan-test-kit>. Accessed 10 Mar. 2022.

mutations occur in the nucleotide sequences and accumulate over time.) mtDNA haplogroups are denoted scientifically by alphanumeric codes, as described in Chapter One, however these codes are not usually what is emphasized to consumer test-takers. Rather than being presented with mtDNA haplogroup codes in their test results reports, most test-takers are predominately presented with, and are generally seeking, data in a form that corresponds to terrestrial geographic areas and human cultural or ethnic groups. When Jasmine at first concluded that the report meant that her ancestry, according to this test, was “all European,” it is because the mtDNA haplogroup into which her (mtDNA) genetic material was categorized is correlated with some population (maternal lineage) of humans associated with the geopolitical area known today as Europe. There was, consequently, no mention of Africa in the report.

What Jasmine did not, at first, know, was what a tiny fraction of her many lineages the test was taking into account. Given how mtDNA ancestry tests work, the final outcome, the assignment to a maternal haplogroup, is reflective solely of one’s singular maternal line; that is, the genetic material being examined is tracing what one received from one’s biological-genetic mother, which was received from her biological-genetic mother, which was received from her biological-genetic mother, and so forth, back to ancient and even prehistoric times.

To bring the analogy closer to home in time, consider the portion of your ancestry contained in your mtDNA when accounting for just five generations. One generation back (as pertains to your ancestry from your genetic parents’ generation), your mtDNA is inherited from just one-half of your ancestral tree. Two generations, one-fourth. Three generations, one-eighth. Four generations, one-sixteenth. Five generations, one-thirty-

second. In other words, if you consider your human ancestry back just five generations, your mtDNA is traceable to just one particular great, great, great grandmother, and none of your 31 other ancestors.

Now expand this exponential calculation backwards over hundreds, thousands, and tens of thousands of years. Any new knowledge that Jasmine, or any mtDNA ancestry test-taker, might gain through this type of test pertains only to this singular, maternal, line of descent, no matter over what period of time. All other ancestral lines, both maternal and paternal, are not included. This is what Jasmine thought could have been explained better during the experience of registering for and taking the test, and definitely before reading the results. And Jasmine is not alone.

It should be interjected here that African Ancestry does at present explain how the two types of tests that they offer work (both the matrilineal and the patrilineal genetic ancestry tests), and I would assume that they did offer such explanations, in some manner and to some degree, at the time that Jasmine took the test. That being the case, their explanatory statements, along with that of other companies that offer similar services, could use significant improvement, and should be placed more prominently in marketing materials and in all ancestry reports. One thing that has pointed me towards this position is that, although I cannot speak statistically to the commonality of this sort of experience, I have come across so many of these human narratives, via video and audio and written materials, about mtDNA tests, where the test-taker featured, at least initially, was very confused and frustrated by unexpected results. This is also the case with Y-DNA tests, also known as paternal genetic lineage tests, which operate differently in terms of what genetic materials are sequenced, but the results of which contain in parallel information

about a singular line of genetic heritage. Phrases like, “DNA Surprise,” “Ancestry Shocker,” and “WTF” are not uncommon in titles. Sometimes the test-taker’s emotional upset, or even state of emotion that should be described with words that indicate much greater intensity and significance, does not subside by the end of the video, article, or other text. Thankfully, in Jasmine’s case, and due to her prompt questioning and seeking of knowledge, it did.

Viewer-listeners of the video were able to see and hear Jasmine as she described this freshly learned information, that this variety of genetic ancestry test takes into account only one singular and particular line in the immense tree that represents her ancestry. This knowledge appeared to make Jasmine feel at least partially relieved of her previous anxiety or concern; she now knew that the test results should not be interpreted as signifying that she has “no African ancestry,” but rather that this test traced only one singular line of (all maternal) ancestry, and that that one particular, singular line of ancestry was associated with Europe rather than Africa.

Jasmine gained this scientific knowledge and communicated it in what appeared to be a matter of minutes. Jasmine’s understandable frustration was that the information required to prompt this new scientific knowledge was not made available in a more upfront manner, that it was not communicated by the genetic ancestry testing service with clarity and greater emphasis. It appears that some good measure of Jasmine’s surprise and upset could have been prevented with relative ease—perhaps a well-designed graphic of a genetic family tree, with that one line of descent highlighted in bold, featured prominently on all test-related materials.

With this new scientific-theoretical understanding in place, Jasmine now has a revised way to interpret the data that she received from African Ancestry. Rather than understanding the assignment of an mtDNA haplogroup as representative of her genetic-genealogical ancestral identity as a whole, Jasmine now relays to the viewer that the nature of the information provided in the report is far more limited in its scope.

Jasmine's revised interpretation of the report is now this: At some point along the line in her maternal genetic lineage as it points towards the past, one comes to a single woman who is (at least according to this categorization method and schema) European in origin. At what point along the line this occurs cannot be known with the given information. The moment could be in the far distant past, very close to the present, or anywhere in between.

Having examined the epistemological change that we can perceive in Jasmine's understanding of her test results that have to do with scientific knowledge, we come to the second variety of knowledge gained over the course of this narrative, which was indicated previously: familial knowledge. This beckons our analysis back to that moment-aspect of time-life not captured in the video, Jasmine's phone call to her mother, and also to the possible connection between that familial-historical knowledge changed-gained and the scientific knowledge changed-gained.

After the jump cut, when Jasmine un-paused the video recording, she told her viewers-listeners what she had learned during that phone call. According to her mother, it was known, through family history, that either her great, great, great grandmother, or her great, great, great, great grandmother was white. This white (singularly) matrilineal

ancestor was said to have lived in America. No more detail about the family history that might have been relayed by her mother was shared by Jasmine in the video.

Jasmine concluded from this conversation that this ancestor of whom her mother was speaking was probably the source of the European matrilineal heritage that showed up in the (mtDNA) genetic test that Jasmine had taken. Is the result of Jasmine's (probabilistic) inference true? Very possibly, it is true. It is also possibly the case that this lineage of mtDNA labeled "European" initiates from a different woman who lived at some other point along the timeline of Jasmine's matrilineal lineage. Regardless, it is notable that the receipt of this familial-historical information too appeared to result in a significant change in thinking for Jasmine.

Now, what is epistemologically interesting here is that, while it might appear superficially to be the case that all that has been discussed so far (aside from the familial knowledge gained) are scientific facts of the empirically-verifiable variety—or, as one might say, what Jasmine learned about her test results might be summed up with a science lesson (or, as noted, a good graphic might do the job)—this is not the case. Upon closer examination, or, more specifically, upon taking the social-ness of this type of (scientific) knowledge into account—seriously and with care—we perceive that the boundaries between the group assignments being made are not so clear or simple, or, more specifically, are structured by lattices of (social) ideas about race and geographic-political origin.

To examine more closely the concepts of (kinds-aspects of) human (social) identity that are present in this narrative, it is helpful to list those identities-identifiers that

are stated explicitly by Jasmine: Black woman, African American, African, European, mother, grandmother (great grandmother, etc.), white woman, and American. This list includes identities-identifiers that might be tagged correctly as concepts that connote race, sex, gender, ethnicity, nationality, native and/or ancestral geographic origin, and familial relation, among other varieties of identity, and it is inclusive of concepts of human identity both as means of self-identification (in this case, by Jasmine, and also her mother as reported by Jasmine) and as means of identification-by-others (in this case, by African Ancestry, and more broadly in this social-political-cultural-scientific context). Indeed, there is mostly agreement among these perspectives on group identities (self-ascribed and other-ascribed), but where there is a perceived lack of agreement, that is where discomfort and questions arise, sometimes even great personal emotional turmoil and social crisis. That is the moment that it typically becomes clear why these problematics are so important in individual persons' lives—and why they are important to analyze and discuss, rather than being taken at (what appears to be) face-value.

It should also be emphasized (emphatically) that all of this is not to say that these concepts, these types of identities-identifiers, are discrete and clearly delineable from one another in human life as it is lived-experienced, whether their definitions-conceptualizations are agreed upon or not. On the contrary (and even when definitions are agreed upon), they are intricately interrelated. These concepts we analytically distinguish from one another, and name, and call “identities” or “forms of identity” or “types of identity,” are not manifest in lived experience as separate varieties of experience. It would be a mistake to conflate these concepts with lived experiences, and specifically those aspects of these concepts which might be (mistakenly) interpreted to

indicate that they are anything but simultaneously manifest in human life and interdependent in their existences. It is not as though any person experiences, for relevant example, their race or racial identity and gender or gender identity separately. It is an abstraction, and perhaps a creation or construction as well, to separate them.

 Holding, and hoping, that this process of conceptual abstraction-delineation of forms of identity is not (always) futile or harmful (that is, that there are some instances in which reflecting on these varieties of identity in isolation from one another is indeed useful, if only for practical reasons, and towards reasoned moral ends), our focus in this analysis will remain focused primarily on how and what concepts of race are manifest in this narrative.

 To continue with this focus, in addition to considering that which is explicitly stated, it is also useful to consider what is assumed or implied, but not stated explicitly, in the video. In this manner it is possible to examine the social-political-cultural context-groundwork of the narrative by way of making note of what is absent—what is assumed to be believed-known by all parties, or at least among audiences likely to be watching the video. As previously noted, Jasmine did not feel compelled to explain to her YouTube audience why she as a Black woman and an African American would be upset upon reading a scientific report that did not acknowledge her African ancestry.

 There is a clear and presupposed, shared assumption among Jasmine and her audience that the terms “Black” and “African” are related. There is likewise a (culturally-educationally) shared assumption that the terms “white” and “European” are related. And, in this epistemological context of genetic ancestry, there is even an interchangeability

in the usage of these racial and geographic-political identifiers. As pairs of terms, they are used oppositely, though not in a completely oppositional manner. In this narrative, Black is interchangeable with “of African descent,” and white is interchangeable with “of European descent,” and Black does mean, in some way, not white, but the inclusion of one (or some) line(s) of white or European ancestry does not negate one’s present-day Black or African descendant identity.

Therefore, in this narrative, it might be said that total (or 100%) African descent is not required insofar as the concept of Black and African American as a racial identity-identifiers are concerned. Furthermore, I do not think that it is a stretch to presume that Jasmine did not assume total or 100% African ancestry would be the result in her report. But Jasmine did, according to her statement, expect Africa to be referred to in some way. Perhaps what she expected was a list of percentages, as is found in reports resultant from other types of direct-to-consumer genetic ancestry testing (and as will be analyzed in other individual-personal narrative cases), with the continent of Africa or some subdivisions of it making up, at least, some significant part of that list.

As for how the concept of white as a racial identity-identifier might be construed from this narrative, it is evident that the rules are not similarly structured (pointing again towards the non-genetic reality of race). This is to be expected given the sociohistorical origins of these racial identities, of these (colonial and capitalistic) ideas about races among humans, of Black and of white. To examine more closely how they are functioning in this particular case with regards to whiteness (I utilize this term in the manner of Linda Martín Alcoff,²¹⁷ whose work was a part of the literature review and

²¹⁷ Alcoff, Linda Martín. *The Future of Whiteness*. Polity Press, 2016.

will arise again in this chapter's analyses), it is necessary to consider Jasmine's genetic-genealogical ancestral origin story as it is being reported in this narrative.

Considering again that long singular line of Jasmine's mtDNA ancestry as it might be traced backwards in time—highlighted boldly against the backdrop of the uncountable other branches that comprise Jasmine's ancestral tree—it was envisioned that, at some point along that exclusively matrilineal branch, one encounters a European or white woman. (According to what we know of Jasmine's mtDNA test results, it is not known whether that point is close in time or very distant. According to the additional familial knowledge gained by Jasmine through conversation with her mother, that point is likely just a few generations back, within the reach of her family's oral history. Neither of these varieties of knowledge, scientific nor familial, exclude the possibility of white or European ancestors in other branches of the tree.)

Focusing in on that point which represents this white woman in the (singularly-exclusively) matrilineal branch, we see that this is an inflection point in terms of (social) racial identifiers; here they do not, as in other places along the line, remain steady between succeeding generations. Looking at this point (q), which represents a person whom Jasmine's mother described as a "white woman" (and whom the report indicated was "European," if these sources of data are correctly correlative), we might follow the highlighted line backward in time to a point which represents this white woman's mother (p). This woman must also be (according to this schema and understanding) a white woman. Now, returning to the initial point of focus (q) and traveling forward in time (towards the lifetime of Jasmine) we see a point that represents q 's daughter, r . This

woman is (according to this schema and understanding) a Black woman. In one generation the racial identity-identifier-identification changes from one to the other, in this instance from (simply) “white” to (simply) “black,” this in this insidiously hierarchical system of racialization.

What is this schema and understanding? In short form—and from a matrilineal perspective—it is that Black mothers always beget Black children regardless of the racial identity of the father, whereas white mothers only beget white children if the father is also white, and consequently, and with regards to Black racial identity, white mothers beget Black children if the father is Black. If one were standing at too far of a distance from humanity, not taking into account the sociohistoricity of the question, it might seem that it is the case that Black racial identification is the societally dominant, more socially powerful, form of human racial identity in the hierarchy of racial identifiers. That perhaps, parallel to the case in patriarchal-patrilineal cultures, wherein a child’s familial identity-identifier is typically received from the father rather than the mother, that the racial identity-identifier of a child is received from a Black parent rather than the white parent in a display or signifier of superiority and power. But this analogy, of course, is fully flawed and misleading in its explanation of how race and racism operates, and demonstrates one of the myriad ways in which types of human identity (in this instance, race and sex-gender) cannot be assumed to operate in parallel fashion.

This asymmetrical, socially hierarchical, defining of Black and white racial identities may and has been explained many times in terms of the “one-drop rule” and definitions of whiteness as purity. (How “purity” is enrolled over and over again in

discussions-actions having to do with race, and also other forms of identity as manifest in the practice of DNA ancestry testing, cannot be understated.) It is also a dualistic or perhaps rather a polarized system, insofar as, although races other than these two are acknowledged in their existences, these are the two ends of the pole, with whiteness always pointing itself upward, and (purportedly) clearly defined lines in-between.

It is at this point in the analysis that looking towards particular philosophical theories about the nature of Black and white racial identities, and other intersecting forms of human identity, both racial and otherwise, is most helpful in advancing comprehension. This will be accomplished by first relaying an analysis of the “one drop rule” as provided by Charles W. Mills, and as will be demonstrated is most relevant in this case analysis. Also incorporated is some of the social scientific work of Duana Fullwiley about the contentious correlations among genetic scientific approaches and social understandings of human identities, especially Fullwiley’s conception of “the enculturated gene.” Then, with an anti-essentialist (and therefore anti-genetically-essentialist) stance in place, there is the beginning of a seeking of a new foundation for, or ways of, understanding the realities of race as they are manifest in this scientific-technological-industrial-personal-social movement.

The “one-drop rule” as an academic discourse that attempts to encapsulate the hierarchical, racist, asymmetry in concepts of Black and white, points towards the sociohistoricity of race, and thus can enable the understanding of race as something other than an essence, which in the context of this genetically-inspired analysis might be equated with an empirically verified-verifiable genetic fact about human beings.

In “‘But What Are You Really?’: The Metaphysics of Race,”²¹⁸ Charles W. Mills, while developing an anti-essentialist ontology of race, mentions these discourses about the “one-drop rule,” emphasizing how it is a rule that is not only culturally relative on the basis of it varying in different places and at different times, but also in that it is unmistakably and almost uniquely particular to the United States of America, that place that is sometimes called just “America.” Mills writes, “Indeed, as commentators often point out, the U.S. one-drop rule for determining membership in the ‘black’ race—that is, any ‘black’ blood makes you black—is practically unique even in *this* world. Many of those categorized as blacks in the United States would be categorized as browns/mulattoes or even whites in the Caribbean and Latin America.”²¹⁹

It might also be pointed out that even variation within the “one-drop rule,” (and even within the geopolitical boundaries of the United States), both in different places and at different times, also points towards the correctness of an anti-essentialist mode for understanding race. The “one-drop rule” was never held so steadfast and all-important as its name appears to signify, or as its white supremacist proponents evangelized.

In this passage and the surrounding text, Mills, in order to make his anti-essentialist argument, brings out a variety of ways in which the one-drop rule might be and has been understood, showing how it is an essentialist sort of understanding about human beings and their identities that ultimately defines race-races in terms of (a hierarchy of) natural essences, and furthermore, how that sort of understanding is (in

²¹⁸ Mills, Charles W. “‘But What Are You Really?’: The Metaphysics of Race.” *Blackness Visible: Essays on Philosophy and Race*, Cornell University Press, 1998, pp. 41–66.

²¹⁹ Mills, 1998, pp. 46-47.

contrast to its often natural-empirical appearance and presentation) sociohistorically formed. It is not natural; it has been naturalized.

In addition to giving particular contrasting historical examples, such as the ones cited here having to do with the Caribbean and Latin America, Mills asks his readers to reflect creatively upon how science fiction writers sometimes engage with this topic—for example, creating scenarios in which this human racial hierarchy poled by Black and white (or rather, by White and black) is inverted or otherwise upset—in order to prompt their readers-listeners-viewers-experiencers into considering these issues in a new way, comfortably and entertainingly (and often beautifully) encapsulated by the realm of fiction.

If we follow this ontology, and associated epistemology, as it is relayed and analyzed by Mills, it is possible to perceive how closely (at least) these two key aspects of the idea-concept of race are interrelated. Mills establishes not only that (a) race is a social idea having origins in time-space that can be described historically, and that (b) the concept of race is essentialist, but also that (a + b) these two aspects of the concept of race are inextricably tied to one another. A primary characteristic of that connection is that racialism-racism, as historically formed, is part of a realism of the sort that “is associated with a belief in natural kinds with defining essences.”²²⁰ In this sort of essentialist-realist mode of belief-understanding, it is difficult if not impossible to perceive how it is that things are changing over time (that is, in part, their sociohistoricity), and thus how it is that things that seem to have always been so may not have always been so (and may not even have been for all that long). These

²²⁰ Mills, 1998, p. 46.

contemplations will be resumed in the Conclusion where the analyses undertaken in this chapter will be considered integratively in their philosophical implications.

Therefore, race is demonstrated—in this U. S. sociohistorical context, and according to an analysis of the one-drop rule—to have been essentialist in its origin and its ongoing, but varying descriptions. Simultaneously, however, it has been shown that race cannot (logically) and should not (ethically) be described in this way, not only due to essentialist racialism and racism so often operating in tandem, but also because this description is internally non-sensical. Race cannot be an essence, a “natural kind” of the sort sought in natural scientific research and critiqued in philosophy of science, if so, it would not be so easy to show how it varies over place and time according to culture. Following, to think of race in terms of purity is also lacking logic; as there are no static, delineable “kinds” of any sort (natural, sociohistorical, or otherwise) against which such purity might be measured. Race is rather a sociohistorical, contingent, idea about humans, by humans. Much more about this might be said, and some will be, in survey form, before concluding this analysis. To say that race is sociohistorical is indeed just a beginning—to determine more precisely what it is and has been is a far more multifaceted endeavor.

Returning our attention again to Jasmine’s case, it is perhaps now even clearer how it is that the narrative is dependent on what might be called “one-drop thinking” and concepts of purity in human group categorization. (I term it here “one-drop thinking” rather than the “one-drop rule” to emphasize it as an epistemological state characterized by fixation on purity rather than an inflexible regulation.) This is evident when the

narrative is examined in terms of the epistemological changes in both the scientific and familial realms described previously.

What is occurring in the scientific realm can be analyzed utilizing some of the modes gained from the survey of the social scientific literature in the previous chapter (Chapter Two). Since it is the case in the narrative, according to the ancestry DNA test taken, that Jasmine’s mtDNA lineage is “European” in origin, we might ask—knowing the great conceptual distance-difference between what is mtDNA (a molecular structure) and what is European (a contemporary geopolitical designation, considered as a form of human identity in this analysis), how might this relation be well-described and comprehended?

It was noted in the literature review that Duana Fullwiley especially seems to have a real way with words when it comes to describing this relation. Two of these elegant descriptive phrases include “the molecularization of race”²²¹ and “the enculturated gene.”²²² While the anthropological studies Fullwiley is relaying in the course of turning these phrases is focused on the biological reification of race in the context of specifically medical research and practice, it might be more broadly applied to genetics, and then reconsidered within the context of this humanistic analysis of DNA ancestry testing.

The phrase “the enculturated gene” is especially useful in a broad variety of analyses insofar as it does not have to do with race in particular. In thinking about

²²¹ Fullwiley, Duana. “The Molecularization of Race: Institutionalizing Human Difference in Pharmacogenetics Practice.” *Science as Culture*, vol. 16, no. 1, Mar. 2007, pp. 1–30.

²²² Fullwiley, Duana. *The Enculturated Gene: Sickle Cell Health Politics and Biological Difference in West Africa*. 2017.

Jasmine's (single-line) maternal lineage as European, a question is, do we perceive this sort of enculturation taking place? I argue yes. European as a descriptor of a human, one that is taken to be of such importance and significance that it is called an "identity" (that is, an aspect-concept of who we are in relation to one another as human persons) is surely bound up in ideas that proceed from the geographic, to the cultural and political.

To begin with the apparently simpler, the geographic, among the continents, as typically counted in English as being seven in number, Europe and Asia are curiously differently defined in terms of their boundaries as compared with the other five. Africa, Australia, North America, South America, and Antarctica—as large swaths of earth surrounded by water, not including those smaller bodies of land around them, such as islands, that are often marked as parts of continents on geopolitical maps—have boundaries that might be discerned by just about anyone looking at a globe un-labelled by political borders. But how might a politically uninformed spectator looking at that same un-labelled globe count the continents? Would they see this range of land—called with separation indicated "Europe and Asia," sometimes together as "Eurasia"—as one or as two (or perhaps more)? I would think as one, considering the all-surrounding water as defines the other continents, but if somehow as two, then where would the line betwixt be drawn?

The uncertainty and political character of the Asia-Europe boundary became very apparent in public debate in the United States in recent months with regards to the war that is currently ongoing in Ukraine. Early on in news and government reports, and other widely distributed and received sources, there was—as was critically pointed out at the time by some commentators—a strong emphasis on communicating to the reader-viewer-

listener-audience that Ukraine is, in fact (as it was stated), a European nation or country. Critics (of whom I am aware) who noted the emphatic way that this conceptualization-identification was propagated over and over again did so in order to point out imbalances in the ways that war and human suffering are reported on a global scale. These critics point towards the ways that conflicts-wars-violence in other regions of the world (as it turns out, any place other than Europe, due in large part to the history of European imperialisms and colonialisms) habitually receive less attention and are generally described as less atrocious than similar or even lesser-scale actions of violence taking place in Europe.

But why did the propagandists and their repeaters have to work so hard to emphasize to U.S. audiences that Ukraine is “in” Europe (and furthermore that it is an independent nation-state within Europe that is European in its cultural character)? It is because they were fighting a steeply uphill battle. Although one strong element, also noted by commentators, is the racial whiteness of the majority the Ukrainian citizenry-population-people, also surely at the core of this is an idealized American political imagination which continues to be (re)generated in significant part with the concept of American and European identities standing allied in almost direct opposition to the concept of Soviet identity. Embedded in this “Western”/USSR dualistic schema of identification are elements-stereotypes ranging the gamut of culture and politics, including, perhaps most centrally, an economic division between the proponents of capitalism and the proponents of socialism. (Here I do not mean to imply that these two economic frameworks are in practice/historically diametrically opposed, but rather that they are perceived or put forward in this way within the context of this post-/neo- “Cold

War” ideology. Difference is exaggerated and given the appearance of the absolute, even naturalized at times.) This leads to significant epistemological resistance among many Americans (U.S.) to the idea that a former Soviet state has its location Europe.

All of this is such recent history, not even a century long, and yet, it too, I would argue, is embedded in the categorization schema of Jasmine’s ancestry DNA test. Although part of this analysis has been to show the manner in which this test does not demonstrate that Jasmine’s identity is “European,” insofar as it might be demonstrative of European identity (in a limited capacity, along that single maternal line), what does that mean given the previous line of questioning about the problematics of defining Europe both geographically and culturally-politically-historically? Furthermore, this is just a few example problematics among many associated with the boundaries of large geopolitical zones and their various subdivisions. Also to mind comes Edward Said’s understanding-theory of “Orientalism,” and V. Y. Mudimbe on “the invention of Africa” and “the idea of Africa.” When combined (and I’m thinking of Benedict Anderson’s “imagined communities” in combination with this as well) the Eurocentric conceptualization and compartmentalization of the world is evident, from a number of geopolitical and more broadly cultural perspectives. (These theories will arise again in the next narrative case analysis.) The question remains, is this Eurocentricism of geopolitical boundaries an important aspect of what is going on in this scientific-technological-industrial-personal-social movement? So far, the evidence indicates that it is.

The gene, in Fullwiley’s terminology, turns out to be very much enculturated in Jasmine’s case, and enculturated specifically with a Eurocentric ideology. In this narrative, the genetic test results have been demonstrated to be embedded with ideas of

racialism-racism (in the forms of “one-drop thinking” and purism), and ultimately a geographic ideology that appears unconcerned with distinguishing among the boundaries of political power and the physical features of the planet (and, consequently, its people). Nothing even remotely resembling “decolonization” as conceived by Frantz Fanon is to be found, and perhaps its opposite is in action.

Although I have utilized Fullwiley’s conception of “the enculturated gene” in order to prompt and deepen a discussion about geopolitical (in this case, pseudo-continental) identity as it shows up in Jasmine’s case, this conception is also applicable to race, though differently, and that is in fact its originating conceptual realm in Fullwiley’s earlier work wherein she refers to the “molecularization of race.” To incorporate a personal-historical aside that relates, I am certain that whenever it was that I learned of a disease called “sickle cell,” that I simultaneously learned that it was a “black disease.” Fullwiley’s study, encapsulated in her monograph, *The Enculturated Gene: Sickle Cell Health Politics and Biological Difference in West Africa*, demonstrates not only how errant this simple originating idea is from a global perspective, but also, through the creation of an ethnography focused on how this disease manifests in human life in Dakar, Senegal, shows how even within this relatively broad category of disease called “sickle cell” that there has been measurable bias in its study to the great detriment of those suffering from the disease in some places more than other. In other words, Fullwiley shows the manner in which there is both epistemological and ethical effect to how genes are thought about, studied, and applied in actual medical practice.

Fullwiley is theorizing on the molecular and social levels (and examining the possible interconnections between these two levels), and, as that is what is required in these analyses as well, applying her theory as a model or mode for understanding DNA ancestry testing has been very useful. In her work, Fullwiley identified ways that sickle cell disease, defined genetically as certain sequences of DNA, interrelated (and interrelates) multitudinously with the complex sociopolitical environment of Dakar and in West Africa more broadly. In parallel, what we are continuing to inquire into here is how it is that the identifying polymorphisms in Jasmine's mtDNA became associated with identification as European, and also as white. What does this mean about our knowledges of racial identity? What does this mean about our knowledges of geopolitical identities (often conflated with geographic ancestry in the context of this movement)?

Some important questions and answers have been highlighted in this analysis, utilizing especially the theorizations of Charles W. Mills and of Duana Fullwiley, but that is not to say that there is not so much more analytical work that might be done. Reflecting back upon the many potential sources of models or modes of understanding the intricacies of these forms-aspects of human identity as outlined in the literature reviews, there are so many possibilities, I believe, for continued fruitful work.

How might, for example, and continuing with Mills, we think about "the racial contract" as operational in this narrative? There are those persons and groups who in the position to affect how these lines (boundaries between human groups) are drawn and those person and groups who are not, and to varying degrees and in varying ways. Test-takers and test-makers are not equal in their contributions to these determinations; they

are not all party to the contract. At the same time, these tests are purportedly universal in the sense that they is called and advertised as scientific; the contract purports universality. This tune rings familiar.

Another great chasm left by this (so far thoroughly anti-essentialist) analysis is: if race is not an essence, then, what is it? We know that it is a mistake to say that it is nothing. While it is (at the moment) beyond the scope of this case analysis to consider the breadth of answers to this question that have been proposed over time, this absence might at least be partially remediated by the giving of a few examples.

It has been demonstrated that, in the instance of Jasmine's genetic ancestry test, essentialist ideas of several varieties are at play. It has likewise been demonstrated that these essentialist ideas are scientifically errant and stand, in part, on a capitalistic and white supremacist foundation of disregard for human life as anything other than a resource. But there are other aspects of the concept of race that are present as well when we look beyond the test results and pay attention to Jasmine's shaping of her narrative.

When Jasmine speaks of herself as a Black woman, it is an affirmation conveyed with a sense of purpose. When Jasmine begins to ask questions about the results of her test, and also about her racial identity, it is with epistemological agency and moral purpose; she is seeking knowledge about something which she values. I think now of, for example, the discourses of *négritude*, Afrocentricity, Pan-Africanism, Black Power, each reaching in different ways to define Black, African, and African diasporic identities in affirmative, constructive ways rather than solely deconstructively or as problems.

To focus, briefly, on *négritude*—both as concept and as social movement, as theory and the simultaneous application of it—it was widely-considered to have

originated with Aimé Césaire of Martinique, and further developed by Léopold Sédar Senghor of Senegal, Léon Damas of French Guiana, along with many other intellectuals of varying disciplinary and creative backgrounds and interests. Ali A. Mazrui describes négritude as “a celebration of African identity and uniqueness,” emphasizing the process of identity formation and preservation inherent in the concept, and also the exciting and celebratory aspects of the movement.²²³ Mazrui also writes that although Césaire is credited with coining the term, it is in Senghor that he finds its greatest proponent, especially in the artistic-aesthetic realm. Hannington Ochwada discusses the ontology of Senghor’s négritude, describing it as having a binary constitution composed of both the “old” Africa and the “new,” modern Africa in the process of being formed.²²⁴ This very much aligns with the affirmative aspects of négritude previously mentioned.

Broadly speaking (and as noted previously in the literature review), négritude may be defined as an ideology or set of ideologies that affirms the positive value of Black consciousness and Black identity. It can be thought of as a manifestation of resistance to colonialism by intellectuals of Africa and the African diaspora, but négritude also, as is emphasized by Reiland Rabaka in *The Negritude Movement*, might be understood as part of an ongoing process of both creativity and resistance beginning (at least) with the work

²²³ Mazrui, Ali A. “Pan-Africanism and the Intellectuals: Rise, Decline and Revival.” *African Intellectuals: Rethinking Politics, Language, Gender and Development*, edited by Thandika Mkandawire, Zed Books, 2005, p. 57.

²²⁴ Ochwada, Hannington. “Historians, Nationalism and Pan-Africanism: Myths and Realities.” *African Intellectuals: Rethinking Politics, Language, Gender and Development*, edited by Thandika Mkandawire, Zed Books, 2005, p. 197.

of W.E.B. Du Bois, and continuing through the writings of Frantz Fanon and beyond.²²⁵ In other words, *négritude* is a reaction in the sense that it certainly responds to the colonial and post-colonial state of affairs, however it is also an (proactive) action of its own accord in the sense that it flowed from previous intellectual and artistic traditions of Africa and the African diaspora, and I might also add the never simple ongoingness of human-beings-in-the-world making and creating things. (Also notable is that the word itself is, according to many scholars, a manifestation of resistance since it involves the embrace of a term or group of terms that had historically been used in an alienating and derogatory manner.²²⁶)

Furthermore, continuing to probe some of those various complexities in this case that might not be in agreement with, or might even resist, the dominant narrative of race as defined along the lines of essentialist conceptualizations and “one-drop thinking” (as I am arguing is often displayed in and encouraged by genetic ancestry test reports), and based upon what Jasmine provided in the video, we do not know what Jasmine might reply if asked, for example, about the racial identities of those women whose lives made up those generations in-between Jasmine and the white matrilineal ancestor that her mother told her about. What, for example, might she reply if asked about the racial identity of the woman who was the daughter of that “white woman”? Would Jasmine

²²⁵ Rabaka, Reiland. *The Negritude Movement: W.E.B. Du Bois, Leon Damas, Aime Cesaire, Leopold Senghor, Frantz Fanon, and the Evolution of an Insurgent Idea*. Lexington Books, 2015, pp. 33-36.

²²⁶ For example, Prof. Souleymane Bachir Diagne noted this when he gave a lecture at the University of Louisville on March 2, 2017.

identify that ancestor as Black, as biracial, multiracial, of mixed ethnicity or race, or using some other terminology of identity or combination of identities-identifiers? We do not know. Considering these possible replies, however, also shows further room for analysis of what race is or might be (not just what it is not) in this and in similar narrative cases, and how it is never simple. (The list of ways in which ethnicity and race cannot be described in genetic terms continues to grow and multiply.)

This all is to emphasize that, according to many humanistic and social scientific ways of thinking, to analyze race in a dismantling way is not enough, and that furthermore, it is an incorrect mode when employed in isolation, in both epistemological and ethical terms. To reiterate a quote from Charles W. Mills included in the literature review, “That race should be irrelevant is certainly an attractive ideal, but when it has not been irrelevant, it is absurd to proceed as if it had been.”²²⁷ The primary aim may be to dismantle white supremacist (colonial, patriarchal) social structures, but at the same time racial identification is an aspect of human life-identity that for many persons and communities, and with intention and good will, extends far beyond the concepts and actions of inhumanity and exploitation with which it began in a historical sense. This is also so true of many other aspects-forms of human identity and ways of being-in-the-world, and that especially cannot be forgotten in its necessity as a component for social change. Again, I think this all supports the claim that humanistic approaches are highly valuable, even necessary, in analyses done to better our understanding of experiences of

²²⁷ Mills, Charles W. *Blackness Visible: Essays on Philosophy and Race*. Cornell University Press, 1998, p. 41.

DNA ancestry testing, and more comprehensively this scientific-technological-industrial-social movement.

Analysis of Narrative Case II: Aurelie

The second personal narrative case to be analyzed herein is that of genetic ancestry test-taker Aurelie, one of 67 total participants in a professionally produced series of minidocumentaries by momondo. Individual videos featuring the narratives of six out of the 67 participants are posted on momondo's YouTube channel.²²⁸ (It might also be noted that these videos are posted again on Ancestry's corporate channel,²²⁹ dated individually approximately two weeks after the videos on momondo's channel.) The video focused on Aurelie's "journey" is one of these six. It is titled, "The DNA Journey feat. Aurelie."²³⁰

There is an introductory video²³¹ made for the series which introduces it to the audience in a highly provocative way, emphasizing the emotional reactions of the participants. Shallow focus brings attention to faces and small gestures and other movements. In the midst of a montage featuring close-ups of test-taker's emotional reactions—some with mouths open and stunned eyes, some with tears—the first words the viewer is presented with are, "Would you dare to question who you really are?"

²²⁸ momondo. "momondo – The DNA Journey (Playlist)." 25 October 2017, https://www.youtube.com/playlist?list=PLyon3Rc2gtzci-FrBfPLcHRS_hfHY9peQ.

²²⁹ Ancestry. "Momondo: The DNA Journey | Ancestry." 14 June 2016, https://www.youtube.com/watch?v=Fw7FhU-G1_Q.

²³⁰ momondo - Let's Open Our World. "Momondo – The DNA Journey feat. Aurelie." 2 June 2016, <https://www.youtube.com/watch?v=mer2HG9dSdU>.

²³¹ momondo - Let's Open Our World. "Momondo – The DNA Journey." 2 June 2016, <https://www.youtube.com/watch?v=tyaEQEmt5ls>.

Each of the videos focused on individual test-takers is about three minutes in length, and begins with the same motto, written starkly in white, all-capital letters centered on an entirely black background, “To celebrate diversity in the world // We set out to find it in our DNA.” Already we find in these brief, bold statements that connections are to be drawn between the socially macroscopic and the individually microscopic.

Here I think of how often it is that the terminology of “diversity” is included in discourses about “identity” to indicate a combination or amalgamation of different types-aspects of human identity, including race, ethnicity, nationality, religion, gender, sexuality... the list is long and important. We continue to ask the question, can (all that, or even some good measure of it) be found in the patterns of sequences of nucleotides?

Immediately following the motto, the image and sound cuts to Aurelie singing, in French, “La Marseillaise,” the national anthem of France. She sings with gusto and a broad smile that spreads to her eyes, raising a fist to accentuate the highest note in the melodic line.

The stage is set for drama. The majority of the video footage seems to be shot in one large room, designed with warm, comforting tones of wooden beige and golden brown. It looks like a room designed for small conferences or large meetings, and it is set up in two different configurations over the course of the video. The music underscoring the action is slow-moving, minor, and features at the high end of the tonal spectrum echoing human-ish sounds that might be singing, but we cannot be sure. I can’t help but

think of the soundtrack to *Aguirre, der Zorn Gottes*²³²—not quite so dark, but curious, heavy, and expectant.

In the first portion of the video, Aurelie is seated at a table with two interviewers facing towards her. The scene almost looks like a job interview. In this portion of the video, Aurelie is asked direct questions about her knowledge of her ancestry, and also about what she expects will be the results of her genetic ancestry test. This portion was (we are informed) recorded in a separate session weeks before the second portion, and before Aurelie receives the results of her genetic ancestry test.

In the second portion of the video, there are many more people present in the room. The long, rectangular table where the interviewers-hosts sit is still present, but Aurelie is not seated with them. Instead, we might notice in the far background that Aurelie is seated in the midst of a group of people (consisting of herself and the other program participants), lined up in three tiered rows of theatrical-style seating along the back wall. This is the “reveal” portion of the video, wherein the participants find out the results of the test taken and are guided through discussing those results by the interviewers.

As, it appears, with many of the test-takers, Aurelie lives in England. Over the course of the initial interview (that which took place prior to Aurelie receiving the test results), Aurelie gives (with specific prompting) a number of indicators about how she

²³² Herzog, Werner, director. *Aguirre, Der Zorn Gottes*, trans. *Aguirre, the Wrath of God*, 1972. Anchor Bay Entertainment, 2000. WorldCat Discovery Service, <https://www.imdb.com/title/tt0068182/>.

perceives her own identity and that of others in her family. (It will be kept in mind that this three-minute video was undoubtedly brought into its final form through a process of careful editing, and that therefore we do not know what else might have been said by Aurelie, the interviewers, or others present, nor the precise sequence of the statements and other actions, before, during, and after the recording of the video.)

Aurelie states, “I live in London now, but my family is all from France.” To give visual evidence of the second portion of this statement, the video shows Aurelie holding up a vintage photograph featuring two elegantly dressed people seated at a dining table, “Those are my grandparents on my mum’s side, quite awhile ago. Very French.”

The interviewers do not probe this reply (so far as we can tell in this concise video), for example, by asking Aurelie what all comes to mind when she thinks about what is “being French,” (note: one of Aurelie’s preferred modes of expressing this relation is with forms of “to be”), or what is “French-ness,” or what is “French identity.” It is possible that Aurelie might have replied anything from language to dress, to other mores and customs, and with a variety of emphases. The narrative presented in the video guides us directly to “nationality.” One of the interviewers inquire, “If you could be any other *nationality* except French, what in your imagination would you like to be?” (Here and in other quotes from the video, italic emphases are added for conceptual clarity and are not indicative of a speakers’ emphatic vocal tone.)

Aurelie replies, “I don’t know, I quite like Italians, because, you know, they’re super fiery and crazy and loud... I’d also quite like *to be* British, being, you know, obviously, in London and I really have a great love and respect for that *culture*, so that would be interesting.” She says this all with a dynamic smile and small, but passionate

body gestures; Aurelie comes across as a person who'd be fun to be around, and she seems very engaged as a participant in this process.

After this initial dialog focused on ancestry as it is understood by Aurelie pre-testing, the video quickly moves into the core action. The interviewers ask, "Aurelie, how do you feel about going on a journey based on your own DNA?"

With just the slightest bit of perceivable, but curious, hesitancy, Aurelie answers, "Um, yeah, I feel very intrigued I think."

Aurelie spits. The interviewers announce to Aurelie and the listening-viewing audience, "The *story of you* is in that tube."

When Aurelie is asked to say what she expects will be the results of the test, she seems to answer without hesitation and with certainty. "I think it's going to be quite a boring story... It's going to be, oh yeah, you're French, and wait, your grandparents are French, and wait, your great, great, great grandparents are French."

Another white-on-black intertitle appears on the screen. It reads, "2 weeks later." The group of participants files into the tiered rows of seating, set quite far back from the interview table. Some adults have children seated with them.

"Aurelie. Sit down." Aurelie is commanded rather sternly, or at least bluntly, by one of the interviewers. The smirky tone of the command does remind one of "reality TV"-style game show hosts working to keep the drama going. Aurelie comes to the table, again smiling as before. After initial brief, pleasant greetings, Aurelie sits down to join them, and the conversation among the interviewers and Aurelie begins. The interviewers

ask Aurelie if she is nervous, and if she still wants to find out “what’s in that envelope.” Aurelie replies in the affirmative to both questions. “100%” she says.

Aurelie is then handed the envelope containing the test results and asked to read aloud. “Oh my god, wow, shit, I didn’t expect that” is the first utterance we hear. Some of the participants in the audience chuckle softly. Aurelie appears filled with emotions and whirling thoughts, at least one aspect of which is incredulity.

“I’m 32% British!?” she exclaims in a questioning tone rising up at the end. Much bigger laughs arise from the audience (sounding generally kind).

A close-up of the printed report fills the screen. The percentages, labeled with the title “Ethnicity estimate,” are listed as follows: “Great Britain – 32%, Italy-Greece – 31%, Ireland – 17%, Spain-Portugal – 14%, Germany – 3%, Eastern Europe – 1%, Finland-Russia – 1%, Scandinavia – 1%.”

As Aurelie reads the list, she says, “This is not me, you guys,” still smiling with a little lilt, but with increasing apparent anxiety. Her smile which previously seems so genuinely reflective of her personal feelings, now seems to be covering something up.

The big moment for Aurelie comes, “Hold on where’s French?!”

“There isn’t any French,” one of the interviewers answers.

In response Aurelie remains silent for a moment, looking back and forth quizzically at the two interviewers.

After another cut, the video changes its tone. It feels, in that moment, that there is a significant moment of time—of Aurelie’s experience—missing from the video. The

raw, ambivalent emotion previously witnessed has calmed into some decision. Aurelie has, at least, had a moment to reflect.

“I’m really happy actually,” says Aurelie.

I was surprised at this response the first time I saw the video.

Before the final sales pitch (there is one coming), the video gives time to Aurelie to express some of her reasoning, that is, to explain some of why it is that she decides she is happy with the results of her test, despite her initial disbelief, and despite the test result’s (apparent) utter contradiction to what she expected.

Aurelie mentions the following three points: (1) that she lives in London; (2) that she “never really *felt at home in my own country*, in France”; and (3) she also refers back to the previous conversation that took place two weeks prior in which she said, “I’d love *to be Italian*.” This segment is closed with Aurelie saying, “It’s almost like my genes know better than I do.”

Due to the editing of the video, it is difficult to ascertain some certain details of this narrative which relays Aurelie’s experience of taking a genetic ancestry test (and doing so under these particular, and rather unusual, public circumstances). We might have to fill-in certain gaps, and we could make errors in those addenda. At the same time, it is evident that important epistemological changes are taking place in Aurelie’s thinking with regards to her identity, and it should be possible to analyze them in some good measure.

It was noted previously that the interviewer's questions are framed in terms of "nationality." Aurelie tends to reply with forms of "to be," and uses "country" and "culture" to refer to aspects of identity as well. There is also the mention of feelings about "home," indicating the crucialness of belonging in Aurelie's sense-understanding of identity. The genetic test report itself is labeled using the word "ethnicity." In this analysis, the primary focuses will be on nation and country as aspects of human identity.

Reflecting on the three-points given by Aurelie and taken in combination with what we know to be the listed test results, an apparent aspect of Aurelie's epistemological (and emotional) transition has to do with being pleased with the idea of "being British," or to be more precise, with having her ethnicity estimate show a high percentage listed by the geopolitical term "Great Britain." As we know, she lives in London, England, a part (the emanating core) of Great Britain, and early in the video expressed an appreciation for what she termed "British culture." So, in short form, Aurelie seems to like the idea of having a genetic makeup that corresponds to a culture that she appreciates, and also likes the idea of living in a place where all those things appear to adhere together (genetics, place, culture). Aurelie wants to feel that she belongs, and perhaps her words also indicate that this belonging is something she feels she has been lacking in her life in some way. We might note again that all of this is replied (from what we hear in the video) to conversational prompting that uses the terminology of "nationality" and a genetic report that is headed by the term "ethnicity." In the video, Aurelie herself does not use the term "nation," nor "nationality," nor "ethnicity."

To turn our consideration to the exclusionary, rather than that which has to do with belonging, another apparent aspect of this transition has to do with being okay with

“not being French.” There is a strong sense in which this is discordant with Aurelie’s statements and positive emotional projection at the outset of the video. How might a person who appears so certain of their own identity (and their ancestors’ identity, e.g. “her great, great, great grandparents are French”), and its homogeneity, all of the sudden seem fine with that homogeneity being upset and its center vanished? Not feeling at home in a place I would think is a key. Why Aurelie did not feel “at home” in France—why she did not feel included—though she calls it her “own country,” we do not know. There is surely so much more to this story of human life that we cannot learn from the video alone.

But there is another, absolutely crucial aspect of Aurelie’s (supposed) lack of “being French” in this narrative, which—to be direct—I was shocked was not included by the producers of this video. It is a major component of what drives me to write about it.

There was no possibility that Aurelie’s test results would include “French” or, rather, “France” (since the test results list the names of nation-states and combinations of nation-states, rather than nationalities or other national[istic] identifiers). This has nothing to do with Aurelie individually. France was not one of the possible “ethnicity” outcomes of this test. Why the producers of the series did not mention this to Aurelie (or include it in the video if she was indeed informed of this at the time), especially when she directly asked, “Where’s French?” is a big question. It is my estimation that her question implies heavily that Aurelie assumed “France” was a possible outcome of the test, and furthermore, in an epistemological sense, that “France” is correctly a source-origin of something that might be called “ancestry” or “ethnicity.”

I do not mean to imply in any way here that I think Aurelie was wrong to have this assumption about a test that proclaims to provide information about “ancestry” and “ethnicity.” On the contrary, in the end it is my aim to demonstrate ways in which this genetic ancestry test and similar fail to take into account the complexities of such sociocultural knowledges and epistemologies, such as, for example, the understandings of “French” and “British” that Aurelie projects. In some cases, I argue these acts of inclusion and exclusion constitute forms of epistemic oppression²³³ and other injustices and encouragements of injustice.

This gap in the informational (or metainformational) output of genetic ancestry testing—that is, in this instance, that “France” or “French” is not a possible outcome—is at the heart of this case analysis. Why is this so? More broadly (and this cannot be fully tackled herein), what are all the different reasons we might perceive behind the inclusion or exclusion of certain ancestries-ethnicities in these sorts of tests?

It is at this point in the analysis that it is sensible, and, for this analyzer, necessary, to refer to and apply theory in order to address this problematic. Indeed, it is my good fortune in having been acquainted with these theories that set off such (epistemological and ethical) alarm bells when I first encountered this narrative. This acquaintance led me to think that this list labeled “ethnicity estimate” with which Aurelie was being presented looked a lot more like a list of contemporary nation-states than a list of ethnicities or other human cultural-ancestral groupings or communities. I noted too that it seemed to be

²³³ Dotson, Kristie. “Conceptualizing Epistemic Oppression.” *Social Epistemology*, vol. 28, no. 2, 2014, pp. 115–38.

the interviewers who persistently interjected the language of “nationality,” and that Aurelie herself preferred to define identity in terms of “country” and forms of “to be.”

In order to flesh out these differences and to consider the significance of (at least in this case) the apparent conflation of “ethnicity” and “nationality” in DNA ancestry testing, and also in response to Aurelie’s and many other persons’ preferential usage of the language-concepts of “country,” I will apply the work of Benedict Anderson and Kwame Anthony Appiah as seems so immediately relevant in this case. Also incorporated briefly in this analysis are the conceptualizations of Edward Said and V. Y. Mudimbe. From the sociological literature the research and theory of Alondra Nelson will be utilized as they are related. A number of these theories-concepts-modes which were discussed in some depth in the literature review will not be reiterated here, but rather applied to the narrative. Of course, the works of so many others can and might be applied to this or similar cases as a part of future research.

To begin, nationality in the way that it is being spoken of here is surely *not* citizenship. If one were, for instance, standing in a government embassy and asked, “What’s your nationality?” the appropriate reply in most moments would be to state the nation-state(s) of one’s citizenship(s). Here that is clearly not the case. (And, incidentally, we do not know Aurelie’s national citizenship or citizenships from what is presented in the video.)

What is being sought and spoke about in this scientific-technological-industrial-personal-social movement (so often) appears to be something that cannot be changed about a person, something that cannot be altered through will nor through any actions, as

citizenship can be in certain circumstances. It appears to be innate, part of “being” as Aurelie might term it. Whether it is (always) essential or essentialist in the philosophical sense is a good and driving question in this research. It also appears (somewhat paradoxically) to be a very complex thing, having many different components or aspects and emphases for different persons and among social groups of persons. It is here that the concept-term “ethnicity” arises in the mind. I will admit that, even after being a student of human identity in a scholarly sense for quite some time, I thought often that I really didn’t know what was meant by the term “ethnicity.” I likewise know that I have avoided using the term in many moments, perceiving it as always tinged by its usages and that of related terms—especially “ethnic”—which appear to be so deeply Western or Global North or Euroamerican-centric, always othering and exoticizing, and often condescending. Ethnicity seemed like such a catch-all concept with such little specificity and vague meaning, and following it seemed not to be of much analytical value when employed in generalized-universalized ways. I still think this is true, to a degree, but I also think that I have come to a better understanding of some of its epistemological structures or characteristics, if not a good summary of its contents, through seeing so many of its innumerable employments in genetic ancestry testing. In short, this research project forced me to stop avoiding it. One conclusion that I have drawn is that I’m not certain there is any way that “ethnicity” can be interpreted correctly as being employed as anything other than an essentialist concept in the context of DNA ancestry testing. If I ever find a counterexample to this conclusion, I will share it.

So then, what sort of information is being sought and received, if it is not something like citizenship (some changeable attribute), when we see these lists of descriptors that so closely resemble the names of (political) nation-states (and more encompassing geopolitical regions)? What all do the terms-concepts of nation or country refer to or encompass in a broader sociocultural sense? In this case, why does France not make the count as an “ethnicity” in the test? Why is French not an “ethnic option”²³⁴?

In *Imagined Communities: Reflections on the Origin and Spread of Nationalism*,²³⁵ as discussed somewhat extensively in the review of humanistic literature,²³⁶ Benedict Anderson makes it multiply and abundantly clear that nations as they exist today cannot be conceptually extracted from the tenants of nationalisms and also, and specifically, European colonialisms. In short, a nation is a socially-constructed, sociohistorical thing—in Anderson’s phrasing, “an imagined political community,” that has become over time (so often and for so many persons and communities) naturalized, both epistemologically and ethically (and in other ways, too). That is, nations in many senses make the appearance of being so eternal, so important, so central to human life, that they are perceived to be essential in and of themselves, and essential in and of those persons who are deemed to be of the correspondent nationalities. The nation becomes a defining part or aspect or characteristic of the person; nationality becomes inherent and essential. This naturalization of nationality into ethnicity (also naturalized) is so evident

²³⁴ See Nelson, Alondra. “GeneTiC AnCesTry TesTing As An ETHniC OpTion.” *Contexts*, vol. 13, no. 4, 2014, pp. 19–20. This brief article is only tangentially related to the analysis at hand, but I employ Nelson’s language here. The interesting tangent is related to the interrelations and transformations of concepts of ethnicity into concepts of race.

²³⁵ Anderson, Benedict Richard O’Gorman. *Imagined Communities: Reflections on the Origin and Spread of Nationalism*. 1983. Revised edition, Verso, 2006.

²³⁶ See pp. 77-79.

in DNA ancestry testing, both in its scientific-technological foundations, and as found in the discourses and narratives which constantly arise from it. As we know and can demonstrate in many ways that (complex, social) ideas about nationality (and therefore, as informed by Anderson, nationalism and colonialism) are a part of the scientific basis of DNA ancestry testing (the constitution of the lists of “ethnicities” in both Jasmine’s and Aurelie’s cases make good examples), we might also ask, does it or how might it act as an encourager of what, in the end, are nationalistic and colonial ideas about ethnicity? If that encouragement is taking place, how so, how dangerous, and how might it be remedied?

It is impossible for me at this juncture not to mention also and again the works of Edward W. Said and V. Y. Mudimbe (utilized in the first narrative case analysis). Though their theoretical offerings as I have referred to them in this chapter and in the literature review do not focus primarily on nations, but rather even larger geopolitical entities (the “Orient” and “Africa, respectively), they too are so helpful and relevant in understanding the complexities of the development-naturalization of geopolitical assignments into human identity. In *Orientalism*,²³⁷ Said demonstrates the Western formulation of the “Orient” and “Orientalism,” and is critical of it both in its aspects as an element of widespread European cultural practices through history and in its formation as an academic study which in many ways only encouraged misunderstanding, marginalization, and ultimately, the continuation of colonial or colonial-like beliefs and

²³⁷ Said, Edward W. *Orientalism*. First edition., Pantheon Books, 1978.

practices. In *The Invention of Africa*²³⁸ and *The Idea of Africa*,²³⁹ Mudimbe explains Africa not as a geographic, terrestrial continent bounded by water, but as a social thing, as an idea, and again, as an invention of a European colonial mindset that set Africa in a constantly opposite, and inferior, position. Mudimbe shows how “Africa” came to be colonially defined in Western discourses.

So if these modes of theorization are correct, if nations (and many other geopolitical groupings) are not only social things or constructions or ideas, but social things very often created by and supportive of some of the most powerful and devastating historically-sized forces (human movements) on the planet (nationalism, colonialism, racism, to name some which have been discussed), then why (doubly) do they seem so embedded in genetic ancestry testing, the aim of which is presumably to sort out empirically natural-biological-genetic kinds? And what actual harms might be coming of this? (I’m thinking here of, for example, personal and political strife and violence, but also direct applications of this science in pharmacogenomics.)

To return to Aurelie’s question, “Hold on where’s French?!”—and to answer it directly—we will bring together in this analysis Anderson’s historiography of nations-nationalities-nationalisms (holding in mind also the conceptualizations of Said, Mudimbe, and Nelson) with the world map provided by AncestryDNA as of today. Through this application of theory, we will consider what is included on the map and what is not, where named areas are centered and where boundaries are drawn, and how

²³⁸ Mudimbe, V. Y. *The Invention of Africa: Gnosis, Philosophy, and the Order of Knowledge*. Indiana University Press, 1988.

²³⁹ Mudimbe, V. Y. *The Idea of Africa*. Indiana University Press, 1994.

those areas which are included are labeled. In the process, the structures of human political-cultural-social power will be the focus, and it will be demonstrated how some stretches of Earth are given preferential treatment in a variety of ways (they belong), while others are included only in a cursory way, or are left out entirely (excluded from belonging in this genetic world).

Now, first, to set the context, it must be noted that today (in 2022) this minidocumentary series (posted to YouTube in 2016) is now six years old. This is important because AncestryDNA “ethnicity” maps have changed significantly (and in a variety of important ways) over time. While it would be interesting, and I think fruitful, to examine the version of the map being used at the time that Aurelie’s test was processed, I choose here to focus on the present-day (2022) map. This is for several reasons. Firstly, so that this dissertation research project (overall) engages, as much as is possible, with DNA ancestry testing as it exists now. Secondly, because it is very helpful in this analysis to note how these sorts of genetic ancestry maps are changing over time, and examining a present-day map makes this almost inevitable. Thirdly, and lastly, for the purposes of my ongoing and future research (on more recent cases and those that are yet to come), working with what is now rather than what has already past just makes practical sense. That said, I may at some point in the course of future research return to look at that 2016 map.

Looking today at the interactive world map labeled “latest ethnicity update” on the AncestryDNA website,²⁴⁰ we see the land zones of Earth represented on a medium-

²⁴⁰ AncestryDNA. “Ethnicity Estimate | Next-Generation AncestryDNA®.” *AncestryDNA*, <https://www.ancestry.com/c/dna/ancestry-dna-ethnicity-estimate-update>. Accessed 26 April 2022.

grey background. There are some relatively few stretches of land that are colored a solid darker gray, but most of the land (and some of the water) is highlighted in bright, jewel-toned hues ranging the spectrum of the rainbow. Some areas of the globe have many more subdivisions of these colors than others. Notably without this semi-translucent, colorful highlighting—the darker gray exposed—are (according to their contemporary national identifiers) southern portions of China, all of Argentina, all of Chad, all of Tanzania, all of Madagascar, all of Greenland, to name just some of those most visible at this global scale and upon an initial inspection.

The default presentation of this map includes the entire surface of the globe. At right we see the top-level regions provided by AncestryDNA listed, along with the number of (sub)regions within each: “Africa – 113 Regions, America – 136 Regions, Asia – 64 Regions, Europe – 1173 Regions, Oceania – 12 Regions, West Asia – 34 Regions.” Although it can only be noted briefly here, just by glancing at this list it is already possible to perceive the impact of European colonialism on this map of the world. The far greater granularity of regionalization in Europe with its 1,173 subregions is due to the overwhelming Eurocentricity of this variety of (genetic) research from its historical founding to the present. Although this is acknowledged by DNA ancestry testing companies (and there are parallel discourses in pharmacogenomic research with regards to what is often termed the “diversification” of human genetic samples), the imbalance is far from addressed and even further from being resolved. Also, in noting recent changes to the labelling of regions, it is the case that the region presently labeled “West Asia” was until very recently labeled “Middle East,” a change clearly determined in reaction to

sociopolitical ideas rather than to genetic ones. (Consider, for instance, if one wants to move away from the terminology of “Middle East,” why not “Northeast Africa”?)

To focus on that portion of the map that is most relevant in Aurelie’s case, “Europe” is selected from the list. The map then zooms in towards that region, still displaying some portions of surrounding regions. Following the thread of this analysis focused on the comparative degree of subdivision among different regions, it can be seen that there are large differences or imbalances at this (continental) scale, as was the case at the previous (global) scale. What is most obvious in terms of the imbalance in these subdivisions here is that there is one huge, singular orange swath labeled “Eastern Europe and Russia” that takes up fully two-thirds of the highlighted portion of the map that shows at this scale; the land highlighted on the western (approximate) third of the map contains at about twenty different patches of color, some overlapping with one another. If all of the colorful patches in the west were to be combined into a quilt, I think that quilt would still be smaller than the monotonous “Eastern Europe and Russia” blanket. The difference is so stark.

Another thing that might be noticed about this map, or more specifically the labelling of it, has to do with the way that the map as a whole is titled versus the way that the components of it are. While here I am writing particularly about the 2022 AncestryDNA map, I can say confidently, having been surveying these types of maps for about two years now, that the sort of discrepancy-tension that I am pointing out here is a common one. On this map, the header (centered over the entire map) uses the term “ethnicity” as a part of the sentence, “See the latest ethnicity estimate update using the interactive map below.” The map’s legend, where one might expect to see a list of

ethnicities, uses the term “region” as a part of the phrase, “AncestryDNA® Regions List.” There is an odd equivocation at play here, with ethnicities seeming to be made the same as geographic regions. While a number of difficulties (both epistemological and ethical) with this problematic might be pointed out, first and foremost, there seems to be the simple error of mistaking location (land) for humanity (beings, cultures, communities). And, if we are to be generous (and I think we should be here) and assume that the makers of the map are not making such an egregious logical error, and to look further, then a next problematic to address is, what then is the connection? Is the aim to assign peoples to certain lands, in an exclusive manner? That is, each person-group belongs to (and possibly in) certain places? This epistemological aspect of this genetic-geographic practice is disturbing, and I cannot help but think of the manner in which it must be in a deep way structured by the land ownership principles of capitalism and the border establishment principles of nationalism.

We know, from Benedict, Mudimbe, Said and so many others that the present-day political map of this planet is not reflective of the great diversity of the communities of people who inhabit it. It is on the contrary, and tragically, shaped largely by some of the worst principles and related actions taken by a relatively small number of humans (and over a relatively short period of time). Following this, and so importantly, it cannot be forgotten that within (all) communities of human beings, past and present, there has been heterogeneity and constant change; it is not possible to point back in time to any one human being or any one small group of humans and say that they are representative of a certain ethnicity (as we refer to ethnicities today). So, how does AncestryDNA, for example, do just that (or even approximate it), or rather, claim that they do? There is no

short answer to this question, but, the point for now must simply be that is what they are doing. It is hopefully clear from what has been given so far how complex the decision-making processes in such determinations must be, and how loaded with social-ness.

Returning to the map, set with focus on “Europe,” we can peruse the many highlighted regions in the western portion of the map, and we do, indeed, find “France” among them. (It is interesting to wonder if Aurelie’s test results were updated now and they included France what she might make of that; perhaps I will have to ask her sometime!) This is a change since Aurelie’s test. What will be seen, however, is that regardless of the inclusion of a region labeled “France” on the map, that the region has far different attributes than some regions around it which one might expect to be similar, and which (at least with hindsight) betray France’s previous exclusion and its still (at best) secondary representation on this map.

First, it is notable that this region labeled France is quite small, falling entirely and well inside the borders of present-day France as defined by the French government. It does not represent all of the areas of land that (I will presume) Aurelie would consider part of France, but rather just a central portion of it extending from around the area of the Perthus Breton and the Pertuis d’Antioche southeasterly towards the Mediterranean around Montpellier. Is this what France is? Is it well-represented by this small bowtie of highlighting? And, more importantly (and despite the fact that this map is labeled by the names of lands rather than the names of peoples or ethnicities), does it represent what is French, or French-ness, or French ethnicity in an epistemologically valid and morally acceptable manner?

While it does feel like a somewhat counterintuitive example, my thoughts are drawn to the French colonial governmental policy and practice called “assimilation,” discussed in the literature review,²⁴¹ which purportedly aimed at transforming those persons who lived in those areas of the planet which the members of the governing classes of France claimed as their colonies (or other sorts of territories) away from their many and various indigenous identities and towards a French identity. The concept, in its idealized (and never implemented) form, would mean that persons in those places are—were in fact, French (or descendants of those who were French). If this idealized, projected form of what is being French is taken at face value, then it would seem that this representation of France not only excludes areas and persons within continental Europe, but throughout the globe. I prefaced this example by saying it feels counterintuitive, because the map that would be created by this definition of French identity could look a lot like one of the French colonial empire at its apex, and this is—of course—something that would be not only undesirable but reprehensible (and incorrect). But these are the sorts of (historical-scale, social) forces that I argue are shaping these maps of ethnicities generated by DNA ancestry testing services. Why was this choice *not* made? Why, when choosing which DNA samples to include in the pool considered to be representative of France-French, were samples not taken from, for example, Senegal or Quebec to make sure that those aspects of French genetics were included? This line of questioning, perhaps, might seem absurd or at least too distant from present-day political realities, but it is to demonstrate the innumerable sorts of decisions that are being made in the course of choosing those “representative” populations for genetic sampling (those whose DNA

²⁴¹ See p. 78.

is studied in order to determine ancestry-informative markers, or AIMS,²⁴² nucleotide sequences considered to be probabilistically indicative of certain lines of human heritage).

Returning to the AncestryDNA map, zoomed in and centered on the bowtie-shaped highlight labeled “France,” we find that there are no further subdivisions of the region. There is just “France”; no way to drill down deeper into the map here. However, if we move northwesterly, toward that region that in Aurelie’s test results was labeled “Great Britain,” we find a region labeled “England & Northwestern Europe,” and within this region there are 8 subdivisions, and within those subdivisions, cumulatively, at total of 41 subdivisions. And this number does not include all of those subdivisions that are included under “Wales and Scotland.” Without any further numbers, it is obvious that (the DNA samples of the persons who were considered representative from) those areas have been studied much more resulting in far greater detail in the mapping of genetic-social relations. The granularity of the geographic area labeled, curiously, “Germanic Europe” rather than “Germany,” is similarly detailed and complex, as are almost all the other regions that fall under the greater region “Europe.” Again, this is unlike “France,” which is utterly simple, containing no subdivisions whatsoever. Also to be noted when comparing “France” with “Germanic Europe” is that “France” is far within the current political-governmental borders of France (République Française), whereas “Germanic Europe” extends far beyond the current political-governmental borders of Germany (Bundesrepublik Deutschland).

²⁴² See pp. 63-64.

(To be noted, so briefly, here—but not as an indicator of its insignificance—is the inclusion of “European Jewish” as an “ethnicity” on this map. It is the only descriptor under the level “Europe” that refers to ethnicity in terms of people-communities rather than places-countries-nations, and it is also the only descriptor in the list which might be, and is so often, construed as having a very particular and directly related religious significance. This is to be addressed in future research.)

So, we finally come to the question, but what makes “France” so different that it has no subdivisions at all, unlike all of the other regions that fall under “Europe,” so much so that it wasn’t even on the map back in 2016? (Personally, I rather wonder why it is on the map now, that is, how-why exactly the decision to start including it as an “ethnicity” was made.) From what I have been able to infer so far—and keeping so close in mind ideas about nations-nationalities-nationalisms and postcoloniality—I find it hard to question the theory that these sorts of DNA ethnicity maps are drawn primarily along lines that follow not ancient threads of human inheritance (genetic and cultural) but rather present-day structures political and physical power as manifest in nation-statehoods and also capitalistic industries. These structures, in turn, and with a focus on history understood in terms of coloniality and postcoloniality, are largely inherited from those moments in time when humans, or rather, particular communities of men, who had the ways and means to do so, went about trying to exploit as much of the planet and its human inhabitants as they possibly could, without consideration for other humans and groups of humans as fellow persons-communities, battling one another along the way, and ultimately (attempting to) divvy up all, labeling it owned and governed. Is this happening (yet) again, in a new, genetic, scientific way?

But, even if this is all so, then what moment in colonial history does this map represent? A difficulty in discerning the influences of these structures of (social-political-capital) power is, it is not just one moment. The various groupings of humanity provided by these sorts of maps (AncestryDNA in particular does affirm this in writing) are not all formed in the same way in the sense that the moments in time that they attempt to capture varies significantly, but also, from a longer historical perspective, all fall within relatively short period. The information (according to AncestryDNA, and for the map being examined now) dates back to anywhere from a few hundred years to around one millennium. Why this range? Could it be because the information about aspects of their human identity that so many people are seeking (it is what they are being offered non-stop) are inherently informed and shaped by (post)coloniality, along with racialism and other forms of distinction among humans that came into contemporarily recognizable form at that time? Why has this become such a definitional range of time in determining who we all “really are”? (This discussion will be returned to in the examination of the next narrative case.)

In future research, the conceptualizations of Bernard Boxill and Paul C. Taylor, as described in the literature review,²⁴³ might also be applied to this case and similar, further substantiating and detailing the social-ness of the formations of these groupings and their connections to the formations of nations-nationalities and colonialism-empire. What additional answers might these approaches add to our understanding of Aurelie’s case, and similar?

²⁴³ See pp. 75-76.

Before closing this analysis recalling the sociological perspective of Alondra Nelson, which ties together so well many of these threads of thinking about humans and scientific practice and DNA itself, I think it is important to note again that in the video Aurelie herself did not use the terms “nationality” nor “ethnicity,” but instead tended to talk about her identity in terms of “country,” forms of “to be,” and feelings about “home” and belonging.

Over the course of my study of this scientific-technological-industrial-personal-social movement I have come across this again and again. That is, the varieties of information being provided often don’t square up (at least linguistically) with how those who receive the information talk (and appear to think) about human identity. In this case, I take especial notice of Aurelie’s apparent preference of “country” over “nation,” in part due to having witnessed this so many times before. Simultaneously, however, and oppositely, I can also recall many instances where the preference is for “nation” over “country” (I think of here of indigenous communities in North America who utilize the term “nation” as a part of their identity, in many instance, at least in part, for political and practical reasons), and also places and times where it is agreed upon by most of those around that the two terms have quite different meanings and scopes, and therefore preference or need is not so much an issue, they simply indicate two different social-geographic entities.

In Aurelie’s case, her preference for “country” over “nation” we might infer has to do with her perception-ideation that this term is more indicative of a group of persons in terms of their culture-ancestry as opposed to being indicative of a group of persons in terms of their governance. In Kwame Anthony Appiah’s second monograph having

directly to do with human identity, *The Lies That Bind: Rethinking Identity, Creed, Country, Color, Class, Culture*,²⁴⁴ Appiah dedicates a chapter to “Country” which gets into some of these concerns. In Appiah’s earlier related work, *The Ethics of Identity*,²⁴⁵ Appiah explains many understandings of and analyzes “the structure of social identities.”²⁴⁶ Especially helpful is Appiah’s historical contextualization of the changing-multiplying usage (and rising importance) of the term “identity” in (especially English language), the understanding of which has helped me to perceive more connections between the use of “identity” in a individual-personal sense and the usage of “identity” in a social sense (as is mostly being discussed in this dissertation, though their interrelation is never forgotten). Important components-aspects-dimensions of human identity that Appiah includes in this discussion are: “kinds of persons” (Ian Hacking), “identification,” “social conception,” “internalization,” “narrative” dimensions, and “patterns of behavior.”

Focusing on the formation of (contemporarily recognizable) nation-states from the nineteenth century through the twentieth, Appiah, in *The Lies That Bind*, demonstrates how clearly it must be the case that early on in this period, for example, “German-ness” and “Italianness” were “more a matter of language or culture than of citizenship.” (Were we to create a science fiction world where DNA testing was around at that time, what answers might most humans in this part of the world be seeking about their ancestry, if any, and what sorts of answers might they be offered?) This seems to be

²⁴⁴ Appiah, Kwame Anthony. *The Lies That Bind: Rethinking Identity, Creed, Country, Color, Class, Culture*. First edition., Liveright Publishing Corporation, a division of W.W. Norton & Company, 2018.

²⁴⁵ Appiah, Kwame Anthony. *The Ethics of Identity*. Princeton University Press, 2005.

²⁴⁶ Appiah, 2005, pp. 65-71.

(much more so than nationality) the type of thing that Aurelie is talking about as she describes some perceived attributes of different identities at the outset of the video. Aurelie is, after all, a person who begins by telling us that she is French but that she does not live in France, and she really doesn't seem all that interested in doing so; Aurelie most likely, living such a life, understands nationality to be something that is changeable, and therefore wouldn't be looking for that in a DNA test, which almost by definition is taken in search of something that is permanent or unchanging about a person. It seems Aurelie has quite distinguishable ideas about nationality, country, and where one lives, all of which I would argue are being rather forced together through the process of this ancestry DNA test, under the title "ethnicity," and set in a discussion regularly injected with the terminology of "nationality."

To reintroduce a sociological perspective—one that has directly to do with DNA ancestry testing, as opposed to (the majority) of these humanistic perspectives being offered which more broadly have to do with human identity—Alondra Nelson, in *The Social Life of DNA: Race, Reparations, and Reconciliation after the Genome*,²⁴⁷ explains a conceptualization of DNA and genetic sciences that integrates so effectively many of the considerations brought into this analysis and goes far beyond.

As Nelson conceives it, in order to understand DNA one must look far beyond a science textbook or educational video (or, even, medical school or a genetics PhD). Understanding its twisted, wobbling ladder structure, how nucleotides encode for

²⁴⁷ Nelson, Alondra. *The Social Life of DNA: Race, Reparations, and Reconciliation after the Genome*. Beacon Press, 2016.

proteins, and all of that detail is but one way of understanding what it *is*. What DNA *is* is not just physical, it is social as well. In Nelson's phrasing (following, as Nelson indicates, Arjun Appadurai in *The Social Life of Things*), DNA has a "social life" of its own. Nelson's theory was transformational in my research process as it added another (or several other) important perspective(s) from-through which to think about what all is lost when we define DNA only in scientific terms alone, and how that is not just deficient, but incorrect, and also has ethical and practical consequences.

In addition to the "social life of DNA," Nelson also writes of the "social power of DNA," and the "social utility of DNA," among many other concepts, all of which are valuable in different ways in the analysis of individual cases, but even more so valuable as reflections broaden aiming towards an understanding the impact of this scientific-technological-industrial-personal-social movement on the scale of global politics.

After Aurelie's statement, "It's almost like my genes know better than I do," there is an abrupt cut to the interviewer.

"So would you like to travel to all of these places?"

"Oh yeah. Hell yeah!" Aurelie replies with lilting laugh, curious (maybe even mischievous) eyes, and no detectable anxiety.

Applause and cheers are heard in the background (sounding a bit louder than what one would expect based upon visual inspection of the people in the room) as Aurelie returns to her seat in the rows with the rest of the program's participants. The closing intertitle reads, "You have more in common with the world than you think."

Like so many similar professionally produced videos on DNA ancestry testing I have surveyed, a big part of this video series' announced purpose is to display how "diversity" (or a similar concept-attribute) is present within all of us, encoded in our DNA, that is, how it is that the interconnections of humanity can be discovered through genetic science. This purported peaceful aim always seems a good one, but there are many reasons for skepticism and caution.

Analysis of Narrative Case III: Tomi

Tomi Makanjuola brands herself "The Vegan Nigerian." Tomi's books, website,²⁴⁸ and YouTube channel²⁴⁹ are centered on recipes, but she incorporates other sorts of creative content as well. In one of her nonculinary-related YouTube videos, Tomi shares with her viewer-listeners her experience of taking a DNA ancestry test.²⁵⁰ Tomi utilizes the service My HeritageDNA.²⁵¹

In contrast to making a test results reveal video—which so often contain those moments of great surprise (as in Jasmine's narrative)—Tomi begins her story by letting us know that she read the results of the test prior to making her video. "I've already seen them so I'm not going to pretend to be shocked." (It's interesting to note here also Tomi's possible skepticism regarding the emotional authenticity of some other DNA test-story sharers' videos.) And, as will be relayed over the course of this narrative case analysis,

²⁴⁸ Makanjuola, Tomi. "The Vegan Nigerian." <https://www.vegannigerian.com/>.

²⁴⁹ Makanjuola, Tomi. "The Vegan Nigerian by Tomi Makanjuola." <https://www.youtube.com/c/Vegannigerian>.

²⁵⁰ Makanjuola, Tomi. "MyHeritage DNA Results | ANCESTRY | Nigerian and...?? - The Vegan Nigerian." 14 Apr. 2019, <https://www.youtube.com/watch?v=K4r7upR-99s>.

²⁵¹ My Heritage DNA. "MyHeritage DNA | Reveal Your Ethnicity & Ancestry | DNA Testing." *MyHeritage*, <https://www.myheritage.com/dna>.

Tomi has not only read the test results, but has had time to reflect upon them and discuss them with others as well.

Following this brief introduction (the duration of the video is just five minutes), Tomi explains why it is that she decided to take a genetic ancestry test

I did this test because I've always been really fascinated by *history*, by *genealogy*, trying to trace my *family's history* I guess as far back as I can go. I love speaking with *older members of my family* trying to figure out *where we're from...*

Even in these preliminary remarks, there are a number of hints that might point us towards appreciating and understanding how Tomi conceptualizes identity, or at least how Tomi conceptualizes a variety of aspects of human identity. Some of the relevant concepts-terms that Tomi employs include: “history,” “genealogy,” “family,” “family’s history,” “older members of my family,” and “where we’re from.” It might be noticed that this statement exhibits family as a central component of Tomi’s epistemology of identity, that is, what Tomi understands knowledge of identity to be, and how it is that she understands knowledge of identity to be formed. For Tomi, family is simultaneously a source and an object of (highly desired) knowledge.

Also of significance is the phrase, “where we’re from.” This can lead this analysis directly towards the consideration of the sort of information provided by this test, that is, information that appears upon first glance to be principally of the geographic kind. As was described in Chapter One, ancestry testing services in their marketing and their test results very often (perhaps always) utilize geographic maps as a central means of communicating what it is that they do and what kinds of information their services provide. I say this to emphasize that the ancestral-genetic information is so often presented geographically, showing the boundaries and names of places on the surface of the planet.

One of the principle aims in this narrative case analysis is to determine in what ways this information, which is so often presented and understood geographically (and with clearly-marked, seemingly static, borders-boundaries), is or might be infused with social-cultural ideas about human identity (the boundaries of which are inherently porous and ever-changing). In Tomi's narrative it will be shown that the names of human groupings listed in her DNA test results might better be described as political and/or national identifiers, which are presented as geographic and also as ethnic (and more specifically as geographically-bounded ethnicities). Furthermore, it will be argued that these political-national identifiers can and should be understood as existing conceptually in terms that recognize the effects of colonialisms and post- or neo-colonialisms on the geopolitical, geocultural, geosocial world of humanity, and that they have significant ethical and practical consequences in the daily lives of humans being at the present time. Theoretical concepts-perspectives applied include those provided by Nkiru Uwechia Nzegwu, Edward W. Said, Thandika Mkandawire, Kwame Anthony Appiah, Stuart Hall, and Dorothy Roberts.

Next in the video Tomi goes on to explain a bit more about her motivations for taking a genetic ancestry test, and why she chose to use the particular testing service that she did.

I thought taking this test would be just a cool, fun thing to do I guess... I don't know whether to take it 100% as true and accurate, but they claim to have one of the best DNA technologies...

In terms of in what way and how much Tomi values the sort of knowledge provided by genetic ancestry test results, Tomi's description of her motivation as "cool, fun" indicates that she isn't taking this all too seriously. At the same time, the sort of

knowledge at which the test aims does appear to be important to her; she says she really likes talking to family about family things—“trying to figure out where we’re from”—and clearly that is meaningful in her life. So, that framing in mind, whatever might be argued or concluded over the course of this case analysis it should be remembered that Tomi herself has told us not to take, at least her, individual-personal genetic results as too important or with too much gravity. That, of course, does not mean that it is inappropriate to consider here Tomi’s experiences as she has shared them with us seriously insofar as they form a part of this scientific-technological-industrial-personal-social movement being studied in its repercussions—both epistemological and ethical, theoretical and practical—on a societal scale. We just won’t take it *too* seriously!

We then come to Tomi’s statement about truth and accuracy and see that perhaps the self-proclaimed technological superiority of MyHeritage DNA may have led Tomi to select their service as her provider. (Another factor in her choice was that the test she took was, in Tomi’s words, “courtesy of MyHeritage DNA”—perhaps something to be explored in future analyses.) That said, this statement is greatly softened by the lighthearted and skeptical phrases which precede it, and the usage of the word “claim” is indicative of Tomi assessing sources of knowledge, and not assuming that all claims made by MyHeritage DNA are true. Were I to dare to intuit too much from this short clip of Tomi’s speech, I might conclude that Tomi holds familial sources of knowledge as having greater powers of verification-justification-truth as compared with genetic sources of knowledge. Perhaps I am wrong or incomplete in this conclusion, but it seems possible and reasonable to (tentatively) infer.

Looking at a few more portions of Tomi’s speech prior to her sharing of her DNA ancestry test results provides additional indicators about how Tomi understands her particular test results and the larger process in which she is participating. We do learn that Tomi was surprised by some parts of her results, and that taking the test has spurred Tomi on in doing additional research about her family’s ancestry.

All I’ve known really is that we’re Nigerian. No other sort of family connections to other *countries*, so I was really surprised by a lot of it... It’s got me thinking. It’s got me wanting to dig a little bit deeper, and... figure out the links.

We also might note here Tomi’s utilization of the word “country” and reference to “Nigerian” as, respectively, forms-aspects and particular types of human identity. As has been discussed previously, most DNA ancestry testing services providers do not use the language of country prominently, or at all, in their marketing and test reports. MyHeritage DNA favors “ethnicity.” Test-takers themselves in my experience are often the source of the insertion of the language of country into discussions about their test results. This is not to say, however, that all test-takers do so for the same reasons-motivations or with the same definitions of the term “country”; the cases show quite the contrary.

The moment arrives. Tomi begins to play a video from MyHeritage DNA that contains the results of her genetic ancestry test.

Dramatic music rises in the background. At first it is cascading violins, but then comes the driving beat of a snare drum. I know it is the case that I have themes of colonialism on my mind, but I can’t help but think that the soundtrack resembles military marches featured in video games (and films and so forth) about ‘taking over the world.’

One I played back in the 1990s was *Sid Meier's Colonization: Create a New Nation*.²⁵² I thought of it as one of those strategy games that smart people played, like chess; in retrospect the Eurocentricity and fun-making of it all seems abysmal, if mostly in a reactionary if not causal way. But it does reinforce the omnipresence of the ideology, even in Western-founded kid's games. It should be emphasized that this is not music selected by Tomi, but rather is part of the MyHeritage DNA test results user experience. And, I have to say, while in the midst of analyzing these sorts of narratives, it is hard to find the music's symbolic possibilities to be anything but tragic.

While the marching music plays, a starfield fills the screen like the beginning of so many science fiction films. In the middle are the words, "Tomi, ready to explore your *ethnicity*?" followed by a bold button with the words, "Let's go."

After the button is clicked, the text changes, now it reads, "Tomi, you *are*..." The starfield zooms and rotates and a representation of the spherical Earth comes into focus. At left, the language of "Tomi, you *are*..." remains ("ethnicity" goes away) as a list of percentages and identities-identifiers appears below it. As each term is added to the list, corresponding areas of the globe light up; these do not correspond exactly to political borders (they are more rounded, like bubbles expanding outward).

The full list reads: "84.6% Nigerian, 12.8% Sierra Leonean, 1.6% English, 1.0% Kenyan." It can be seen already from this list that the report that Tomi shows to viewers includes only descriptors-terms that are identical to contemporary, commonly used (shortened) names for nation-states in English, all with clear colonial influences in their formation.

²⁵² Meier, Sid. *Sid Meier's Colonization: Create a New Nation*. MicroProse, 1994.

Fade back to Tomi. She begins to read aloud through the list with her viewers, commenting on each of its components along the way.

As you just saw, I *am* 84.6% Nigerian. I expected that to be the highest, so no shock there. 12.8% Sierra Leonean, this was surprising to me, probably the most surprising, because it's quite high, you know, and I don't know any family members with links to that *country*, apart from maybe an aunt whose mother was from there, but yeah, so that was surprising and really exciting.

Throughout this portion of her discussion, Tomi's tone is light, cheerful, and helpfully explanatory, as fits with her typical demeanor on her YouTube channel. It is also interesting to note here how Tomi weighs the significance of the varying percentages in the list. She does not consider 12.8% insignificant, and 84.6% is high enough that it is "no shock" and appears to adhere well with her personal-familial-social identity as Nigerian.

When she gets to "English," the tone and content of her speech changes noticeably from what seems to be mostly accepting curiosity towards a more critical stance.

The 1.6% English, like, what? I can't even begin to think where that's come from... My grandparents will probably have no idea, but I can ask. You know, no harm in asking. But yeah, no idea where that could be from.

As she says, rather half-whispers, "like, what?" she shakes her head back and forth, and over the course of the rest of this statement her forehead becomes increasingly furrowed with thought. Then, Tomi arrives at the last line of her results, commenting on it individually and also the totality of the list.

And of course the Kenyan 1.1% is so tiny, but still quite, cool. So yeah, those are my results. Obviously still predominately Nigerian so I get to keep my brand name "The Vegan Nigerian," nothing changes there.

All in all, Tomi's sense of personal-social identity does not appear to be at all "shaken" as it is in some experiences of ancestry DNA testing. The test acts as a

confirmation of her Nigerian identity (at least “predominately”), as indicated by her joking-laughing mention of keeping her brand name and her earlier comment about that result not being shocking. And, she expresses entirely positive curiosity and excitement about the Sierra Leonean and Kenyan test results. However, the identifier not geographically identified with the Africa, “English,” generates skepticism and brings about a perceivable emotional change and also an epistemological change insofar as Tomi then concludes that she will ask her grandparents what they might know. But, as she makes it clear, she doesn’t really expect to get answers on that front.

Perhaps most importantly about this English identifier, and Tomi’s questioning of it, is that English is not simply some random political-geographic identifier from someplace else on the globe that has nothing to do with Nigeria. “English” or “England”—as a descriptor of that particular, political-economic-militaristic center of Western colonial power that exploited the nation-country-land now referred to as “Nigeria” (in English language), and persons and communities within it—understandably generates a critical, reflective (but again, not *too* serious) orientation in Tomi’s thinking.

Tomi is not alone. As can be seen in some of the comments on Tomi’s video, some viewers who chimed into the conversation have similar concerns. Keke, a person who reports having taken a DNA ancestry test, comments after sharing their own test results (including a full list of percentages and correspondent identities-identifiers),

...My family is African American, so we have no idea where any of this is coming from lol. However, we're pretty sure that the European DNA comes from the slave trade. These DNA tests seem to align with historical events; they're telling our story

Tomi replies to Keke (in part, see Appendix I for the full contextualizing text of these exchanges in the comments on the video),

...Above anything else, these tests allow us to paint somewhat of a picture of our pasts, and are a stepping stone to flesh out our stories.

It's interesting to note here the complexity of Tomi's multifaceted, multisourced approach to understanding "our pasts" and "our stories." Tomi is clearly not taking one single source of potential knowledge as authoritative on its own.

Another user, Oluwadamilola Akinayo, who reports not having taken a DNA ancestry test, writes (reacting quite strongly to learning of Tomi's test results),

Thanks for sharing, Tomi. Frankly that 1.6% English scared the hell out of me. Got me wondering a lot of things though I haven't done any DNA test...

Tomi's reply to this comment expands upon her earlier, "like, what?" considerably, and her expression that she doubts she'll ever come into a better or more exact understanding of the source of that "English" percentage.

Oluwadamilola Akinayo listen! As soon as I saw that, I was shaken. Like "who? What? Where? How?" Lool. I doubt I'll ever get answers though... And if you ever do take the test, please come back and share

These exchanges in the comments are helpful in further understanding Tomi's experience of interpreting this DNA ancestry test both on her own and with others. Especially interesting, undoubtedly in part due to my perspective living in the United States, is the reaction from Keke, whose "family is African American" and who took a DNA test which displayed, as Keke terms it, some "European DNA." Keke points to the "slave trade" as explanatory; in this analysis I have been referring to discourses about "colonialism." These are of course two directly related manners of discussing history. The cross-continental or continental-diasporic conversations being generated today by genetic ancestry testing deserves further study, and I think would generate meaningful insights into some of the many global dynamics this movement.

To begin the application of scholarly concepts-modes to this case—our aim continually being to better comprehend this scientific-technological-industrial-personal-social movement via humanistic perspectives and as informed by social scientific understandings—we will start by considering, rather than what Tomi included, some of what she did *not* include in her video. It is notable and significant that Tomi did not choose to use in this video any language or other references to indigenous or regional identities, such as Igbo or Yoruba, established prior to the invasion and establishment of colonial forces and structures. Why is this?

One huge factor is, of course, that Tomi is being prompted in this discussion by the list of “ethnicities” provided by MyHeritage DNA. It is a short video, focused on those particular results, and I really wouldn’t expect her to discuss other factors. We also might consider that her audience on YouTube is (unevenly) global, surely another influence on how Tomi discusses these results. I believe most everyone speaks at least somewhat differently to “the world” than we do to, for example, other persons with whom we are closely connected through community. In sum, it is interesting to wonder, for example, what sort of language-concepts Tomi might employ in her telling of her story if the testing service she utilized provided different sorts of categories of human identity, or if Tomi were speaking to a different audience.

But to focus on this absence—not Tomi’s lack of discussion, but rather MyHeritage DNA’s lack of inclusion of indigenous or regional (noncolonial) human group identifier-identities—we may turn to the conceptualizations of Nkiru Uwechia Nzegwu, especially in her essay, “Bypassing New York in Re-Presenting Eko:

Production of Space in a Nigerian City,”²⁵³ but also in her (later) monograph, *Family Matters: Feminist Concepts in African Philosophy of Culture*.²⁵⁴

In the essay, Nzegwu analyzes the “Yoruba notion of space,” utilizing especially examples from the environment and architecture of Lagos. The essay, though in no way having directly to do with genetic ancestry testing, is so beautifully applicable to it, and I expect will continue to be helpfully applicable in similar case analyses, especially alongside Nzegwu’s other works.

Nzegwu’s analysis of what is a city, how cities are so often described almost solely in terms of economic and political indicators, demonstrates that,

The result is that symbolic representational forms deriving from social and cultural beliefs that are non-quantifiable, or irreducibly economic, are either treated as superficial or hardly merit attention.²⁵⁵

This attention to the “non-quantifiable” is one of the things that makes Nzegwu’s conceptualization of social-cultural spaces so enlightening in cases having to do with DNA ancestry testing. Throughout these analyses, with their lists of percentages, a major point I have been hoping to demonstrate is how the sort of information produced by this scientific-technological practice, quantified and purportedly objective, does not match with the sort of information that is really being sought by humans about their identity, which is so qualitative, subjective, and variegated; and furthermore, how the information is simply incorrect insofar as it does not (and cannot) take into account the “non-quantifiable.” Do percentages of human identity really make sense? Are they really

²⁵³ Nzegwu, Nkiru. “Bypassing New York in Re-Presenting Eko: Production of Space in a Nigerian City.” *Re-Presenting the City: Ethnicity, Capital, and Culture in the 21st-Century Metropolis*, edited by Anthony D. King, New York University Press, 1996.

²⁵⁴ Nzegwu, Nkiru. *Family Matters: Feminist Concepts in African Philosophy of Culture*. State University of New York Press, 2006.

²⁵⁵ Nzegwu, 1996, pp. 111-112.

helpful in our personal and collective journeys to understand who we are? If they are, how so? If so, it must be in some highly limited fashion; there are far too many questions about the quantified, seeming-certainties that these tests claim to capture, from what moment in time and why, to how they are labeled, to who is included and who is not, and in what ways. .

In future analyses, *Family Matters* I think will also be usefully applicable, in a number of ways, among these in applying Nzegwu's explanations and analyses of the intersections and nonintersections of matrilineality and matriarchy, of patrilineality and patriarchy. This, I expect, will be especially true when examining cases having to do with those particular forms of locally based human identities-communities-cultures on which Nzegwu bases her examples, but more broadly as well. For example, Nzegwu's scholarship would be useful in the further examination of the prior narrative case in which the test-taker (Jasmine) took an mtDNA-based test, which is also sometimes referred to as a "matrilineal genetic test."

In the previous narrative case analysis, that initiated by Aurelie's experience of genetic ancestry testing, there was a focus on the presentation of human identities-identifiers as solely or principally genetically founded when they are in fact deeply infused, and even based upon, social ideas which are left unexposed and unexplained. It was argued specifically that those categories presented to Aurelie were based on contemporary nation-states (forms of nationalisms) and other political unions-empires (e.g. "Great Britain") more so than anything else. A parallel argument might be made with regards to this case having to do with the experience of Tomi Mekanjuola.

However, rather than making that parallel argument, which it is hoped might already be evident based upon what has been presented previously, in this case analysis our next aim will be to bring attention to relationships between that which is called “colonial” and that which is called “postcolonial” in order to better understand how they are manifest in DNA ancestry testing. Also, insofar as these concepts might be better construed as dynamic ideas and discourses about human history rather than just notations for periods of time, we will consider two humanistic approaches to understanding these ideas-discourses that might ultimately be useful in gaining greater insight into this scientific-technological-industrial-personal-movement in humanity. These two approaches are “traveling theory” and “discursive continuity” and might be well-applied to a number of concepts about human identities in terms of how they are being shaped-formed within and by this movement.

The terms “colonial” and “postcolonial” are often used to denote periods of history in terms of who or what is perceived to have been (from the perspective of the historian) the correctly, legally recognized power of governance at that time. Taken simplistically, it would appear that these terms are opposites in the sense that “operative” and “postoperative” are used to describe distinct states of affairs in a medical setting. However, in the case of colonialism and postcolonialism, the difference is not so clear. Colonialism did not take place within a single, definable time period nor in just one way, nor was it experienced in the same way by all those who participated and were affected. In many senses the end of the colonial period has yet to come in the sense that all who hope for justice should act towards. For this reason, the term “neocolonialism” is

sometimes used in place of “postcolonialism,” especially in political contexts and by certain parties, as it in some circumstances better communicates the indefinite and complex nature of its power relations, and the continuance (and renewal, and even creation) of colonial influences into the present time.

Moving beyond chronology, thinking in terms of concepts and theory, we can perceive postcolonialism as a set of discourses and conceptualizations aiming towards understanding humanity in terms of how colonial ideas and action (coloniality) continue into the present and form significant structures of human society, and how this is and can be resisted. This discourse on theory, as all human communication, takes many forms. Some is written. Some is spoken. Some is implied through action. Some takes place in academia. Some takes place in the political arena. Some takes place in domestic spaces. This list could go on indefinitely, and the items on it are not mutually exclusive; it is why theorization on the nature of discourse involves many complexities.

Traveling theory, as put forth by Edward W. Said, attempts to address this complexity by examining the movement and transformation of ideas over time in a number of different modes. “[I]deas and theories travel—from person to person, from situation to situation, from one period to another,” according to Said, and this “circulation of ideas” takes place in several different ways including “acknowledged or unconscious influence, creative borrowing, or wholesale appropriation.”²⁵⁶ Said furthermore goes on to say that these ideas, as they travel, are “to some extent transformed by its new uses, its new position in a new time and place.” In other words, it is crucial, when endeavoring to understand any discourse, to take into account the sources and contexts of ideas, that is,

²⁵⁶ Said, Edward. *The World, the Text, and the Critic*. Harvard University Press, 1983, p. 226.

who puts them forth, who is meant to receive them, in what context are they situated, and especially, how they change in response to these various factors.

These concepts of “person,” “situation,” “influence,” “borrowing,” “appropriation,” and “transformation” as defined by Said, with his emphasis on understanding how a theory travels and its ability to travel, can be utilized in order to gain a better understanding of the dynamics of colonialism-coloniality (and also postcolonialism and postcoloniality) in terms of how personal and social identities are formed-shaped by these powerful factors in human history, and subsequently how this plays out in DNA ancestry testing. These concepts are so helpful and fascinating in pondering the many dynamics involved. So often, and I do think reasonably so, my focus is on those situations in which one sort of discourse is so clearly dominating others, but there are so many other intricacies to be considered in the multitudinous ways that ideas travel through discourse (and definitely as social ideas show up in genetic ancestry testing).

Analysis in terms of discursive continuity, by contrast, focuses more on the theory or theories in question, and how various incarnations of theory compare to one another and to related theories, rather than on the conditions under which a theory or theories became a part of discourse. For example, it is possible to discuss the discursive continuity of Négritude, Afrocentricity, Pan-Africanism, Black Power movements, even Consciencism and so forth without reference to the persons who generated those theories and movements, or the context in which they were created and developed. Compared with traveling theory this approach may seem archaic (detached, inappropriately universalizing) and consequently irrelevant or always misleading, however, it might be

argued that this approach can still be very helpful and interesting insofar as it opens us up to discuss potential theoretical connections where the physical, geographic, or practical connections are unknown or uncertain, and might subsequently assist us in the generation of new thinking through the synthesis of earlier ideas and our own reflections on them. I argue that it is helpfully promotional in the creation of new ideas and in finding new conceptual connections, but that it is a tactic that should be used with caution, both epistemological and especially ethical, when those new ideas are put or otherwise find their way into practice. To be direct, what I am thinking of in particular here are current discourses and ideas about “conspiracy theory,” as characterized by the thinking of those who find connections among ideas and actions that cannot be substantiated, and who obsess over these perceived connections to the detriment of themselves and others, both in terms of ideas and actions. In terms of the detriment to ideas (and subsequently actions), I think these obsessions, in significant part, limit their holders from perceiving what are truly vast conceptual and institutional structures of society that cause harm-injustice every day. While these considerations are not typically a part of the discussion of “discursive continuity” as a scholastic or interpretive approach, I think they are worth discussing; I say much of this from reflection on my own experience.

Having considered these two approaches to the interpretation of discourse, our next task is to discuss the nature of discourse within the colonial and postcolonial contexts, and to continue to consider just a bit more how each of these terms may be interpreted, given that they are utilized in so many ways. This all being done in the context of continuing to think about how all of this is—that is, must be—manifest in those social ideas that are a part of the theory-practice of DNA ancestry testing; the

scientific being not separate from the social, but a part of it, as its practice is undertaken by (social) humans.

When thinking in terms of colonialism and postcolonialism, discourses are typically emphasized as taking on characteristics specific to those contexts. But as stated previously, the eras-ideas denoted by these terms are not as distinct as they may appear. As expressed in a somewhat extreme (but understandable) form by Thandika Mkandawire in his notes to his chapter entitled “African Intellectuals and Nationalism” in *African Intellectuals: Rethinking Politics, Language, Gender, and Development*, “I use post-colonial only in its purely chronological sense, without suggesting any socio-philosophical condition, let alone psychological mood.”²⁵⁷ In this I read Mkandawire as resisting the utilization of the colonial-postcolonial distinction as the all-pervasive or defining force of history, especially on the African continent. Although I agree with this wholeheartedly, at the same time, and perhaps this comes in part from being the teacher of mostly young adult students in the United States, I find it difficult to underemphasize this as an important aspect of history that is so critical to take in if one is to understand (in whatever way that we can) current events on local to global scales. And when I look at these geographic maps presented by DNA ancestry testing companies, I cannot help but see those forces at play in a huge way. (I will say in teaching about ideas about colonialism and postcolonialism that I always emphasize that it is not a binary distinction but rather a conceptual tool for understanding that is dynamic and multifaceted.

²⁵⁷ Mkandawire, Thandika. “African Intellectuals and Nationalism.” *African Intellectuals: Rethinking Politics, Language, Gender and Development*, edited by Thandika Mkandawire, Zed Books, 2005, p. 47.

This brings to mind an example put forth by Kwame Anthony Appiah in his essay entitled “The Postcolonial and The Postmodern,”²⁵⁸ wherein he describes a 1987 art show in New York City which had as its theme art from the African continent, and the exhibition of which displayed in a very clear way the continuing effects of colonialism into postcoloniality (that is, correspondingly, postmodernity, according to Appiah’s argument), though in art rather than in science. As Appiah describes it and analyzes it, the manner in which the show was curated displayed deep and obvious signs of the continuing aftermath of colonial ideology. The one co-curator, artist Lela Kouakou, who could be described as being less influenced-founded by Western or Euroamerican aesthetics was disqualified from evaluating the artistic value of anything produced outside his own particular community; meanwhile, persons who had little or no academic or artistic credentials for evaluating art of any kind (e.g. David Rockefeller) were asked to review and judge all of the artworks of all contributors without discrimination. Examples such as this make it so clear that the “postcolonial” and likewise the “postmodern” are not so fully “post-” as their grammatical structure causes them to appear. And although we are now 35 years past this exhibition which Appiah cites, it is easy to think of numerous critiques of art curation and display that are ongoing at present.

Another example of how the continued effects of colonialism are disguised in modern discourse can be found in any encyclopedia or other popular general reference source (at least in English). As examples, if one looks up entries for “The Colony and

²⁵⁸ Appiah, Kwame Anthony. “The Postcolonial and The Postmodern.” *In My Father’s House: Africa in the Philosophy of Culture*. Oxford University Press, 1992, pp. 137-140.

Protectorate of Nigeria” or “French Togoland,” they are described as being governed by Great Britain and France respectively, whereas “Nigeria” and “Togo” are identified as contemporary, independently-governed nation-states. Without further reflection on these brief definitions, it might appear that at one time the British and French governments had utterly penetrative influences over the people who live in the regions defined by those borders, but that now those influences are absent. This, of course, is a far too simplistic depiction of the state of affairs, on both sides of the historical coin. The simple fact that the governmental languages of these nations today are what they are displays one of the most obvious impacts of colonialism. At the same time, it would be a mistake to think that this colonial-postcolonial distinction is what should—historiographically, epistemologically, or ethically speaking—define the identities of those human persons and communities who live and have lived in these parts of the world. But is that not precisely what MyHeritage DNA did, in part, in Tomi’s case?

This returns us to Tomi’s identity as it is presented in the MyHeritage DNA test results report. Even setting the percentages aside, taking a sort of majority rule mentality, if it is correct to think of this test as a confirmation of Tomi’s identity as Nigerian, then what does this mean about all of those other aspects of Tomi’s personal-social identity (not of the nation-state-based variety), perhaps for example those which Nzegwu would point out, which are not accounted for in these results in any way?

If the claims of this testing service (and these types of genetic testing services) were more limited, perhaps things would feel different. But, as demonstrated, the test report itself labels these terms “ethnicities,” and furthermore states that this is who-what

the test-taker *is* (i.e. “Tomi, you *are*...”). And, it might be added (as was described previously)—to really sell the message—all of this is presented with a highly dramatized aesthetic that signals great importance and potential meaning for its recipients. They are making big claims, and they are falling far short in crucial ways.

Yet another means-mode for examining some of the ways that DNA ancestry tests such as the one that Tomi took do not take into account the sociality of human identity on a global scale—nor on an appropriately (epistemologically and ethically) local scale, for that matter—is through some of Stuart Hall’s conceptualizations of human identity formation as it has been shaped by large-scale historical events and ideas such as colonialism and coloniality. There is only space for this work of Hall’s to be mentioned briefly here in this particular case analysis, but it is included that it might be utilized in future research and analytical work. I am thinking here especially of what Hall wrote in “Cultural Identity and Diaspora.”²⁵⁹

As Tomi’s video comes to its end, Tomi tells her viewers that, as she has shared her experience of taking a DNA ancestry test with others, a question in reply sometimes has been, quite pragmatically, to ask what she will do with this newly acquired information or knowledge.

Tomi gives her reply to the query, concluding much the same way that she began her video, speaking of her family and of wanting to learn-know yet more.

²⁵⁹ Hall, Stuart. “Cultural Identity and Diaspora.” *Identity: Community, Culture, Difference*. Jonathan Rutherford, editor. Lawrence and Wishart, 1990.

For me it just makes me more curious, makes me want to find out a lot more about my family, it certainly makes me want to explore more Sierra Leonean food.

And, of course, Tomi tosses in at the end, so casually yet so professionally, that comment relevant to her vegan cuisine channel, that is potentially of specific interest to many of her viewers, and which interconnects this particular creation of Tomi's more closely with her other content and her branding. It is interesting to note that Tomi appears to choose this cuisine in accordance with the second highest percentage in the report (the first already being her culinary specialty).

So, did Tomi get what she (might have) wanted out of the DNA testing experience, at least as reported in this narrative? Perhaps in some ways, but in other ways, Tomi seems to remain in the same or a similar state of seeking (enthusiasm maybe a bit more heightened) as was the case prior to her testing experience. Tomi's statements early on the video, such as "where we're from" and "who we are," indicate important forms of identity-seeking and contain far more depth of meaning than can be conveyed by the highlighting of a particular stretch of land on a map, labeled with a list of numbers and the names contemporary nation-states, which is that with which Tomi was presented (and supposedly represented).

Reflections on these Analyses, and Potential for Future Analyses and their Epistemological and Ethical Utilities

Having completed analyses of these three narrative cases, it has been found that some tactics-modes-applications have been more successful or fruitful than others. I aim to take forward with me in my future work these lessons learned, and expect that this methodology of the analysis of individual narrative cases in order to better comprehend

this scientific-technological-industrial-personal-social movement might yield even better results in the future. Some errors in particulars may have been made (though I hope they are very few), but some of the patterns that have been found I think cannot be mistaken for anything but what they are, and among these patterns or structures are racist, colonial, and nationalistic ideologies and practices.

Before closing this chapter, we will consider one more theorist's work, drawing again from the sociological (and legal) realm, which will bring this research and application of scholarship having to do with human identity squarely back into contact with scholarship that directly addresses and theorizes about DNA ancestry testing. In *Fatal Invention: How Science, Politics, and Big Business Re-Create Race in the Twenty-First Century*,²⁶⁰ Dorothy Roberts brings together so many of these discourses and concepts which have been discussed throughout these analyses and throughout this dissertation (and many other concepts and discourses, too). In it, Roberts addresses a subject matter even more broad than what is attempted herein, from the “the invention of race”²⁶¹ and especially the legal construction of racial categories (for instance, Roberts gives examples from the changing language of the U.S. Census over time), to racialized scientific practices and ideas, especially in medicine, which Roberts calls “medical stereotyping,”²⁶² and is commonly practiced in pharmacogenomics and personalized medicine.

²⁶⁰ Roberts, Dorothy E. *Fatal Invention: How Science, Politics, and Big Business Re-Create Race in the Twenty-First Century*. New Press, 2011.

²⁶¹ Roberts, 2011, pp. 3-25.

²⁶² Roberts, 2011, pp. 57-80.

Even more broadly, and bringing together her theorization through the lenses of these different realms or disciplines (natural science, social science, law), Roberts states, “There is no biological test for whiteness. White means belonging to the group of people who are entitled to claim white privilege.”²⁶³ The key is structures of privilege, not of genetics. Roberts goes on to state, even more directly, “While race is not imaginary—it is a very real way our society categorizes people—its intrinsic origin in biology is.”²⁶⁴

After establishing many historical precepts and contemporary happenings that support her claims, Roberts shows how this variety of scientific practice is “redefining race in genetic terms.”²⁶⁵ Although Roberts focus is race in this monograph, some of her arguments work in parallel with other forms-aspects of human identity-identification that are engrained in the scientific-technological practice of genetic ancestry testing as has been demonstrated. I think here also of Appiah, “biologizing what *is* culture, ideology.”²⁶⁶

I find Roberts work very compelling. This is not only because it is so useful in application to the sort of cases about human identity with which I am working, but also because as I read *Fatal Invention* it became an apparent likelihood to me that Roberts and I are motivated by at least some of the same paradoxes (Roberts’s choice of term) in doing research on closely related topics. For example, prior to encountering this following paragraph, I can say that a similar thought had occurred to me (about Rick Kittles and his role in AfricanAncestry):

²⁶³ Roberts, 2011, p. 18.

²⁶⁴ Roberts, 2011, p. 24.

²⁶⁵ Roberts, 2011, pp. 57-80.

²⁶⁶ Appiah, 1992, p. 45.

Kittles was the paradox I saw in his work. On the one hand, he is an outspoken critic of a genetic definition of race and has written several prominent articles debunking claims of natural racial boundaries found in our genes. On the other hand, he is a leader in the scientific investigation of distinctive African genetics, starting a business that deals in African DNA and conducting studies on genetic contributions to the high rate of prostate cancer among African American men.²⁶⁷

Here I do not intend to focus on Rick Kittles, because it is not my point to interrogate his work in particular. What I do wish to point out is that this is the sort of pattern, the sort of paradox, that can be found in so many aspects of this movement. In the case analysis having to do with Aurelie’s experience of DNA ancestry testing, for example—which was professionally produced as an advertisement—the presentation was surrounded by the language of diversity and inclusion, but the contents of the test results cannot be described as such. I conclude that they are highly exclusionary (in addition to, in many ways, empirically incorrect). Roberts might call this a part of what she refers to as “biopolitics.”²⁶⁸

Stepping past the levels of specialization indicated when speaking about “genetics” or even about “biology,” Roberts states, “Science is the most effective tool for giving claims about human difference the stamp of legitimacy.”²⁶⁹ If this is true, and I think in so many contexts it overwhelmingly is (as will be discussed further in Chapter Four and the Conclusion), it makes all the more clear the importance of epistemologically and ethically critiquing this movement in humanity, which is so complex despite its youth.

²⁶⁷ Roberts, 2011, p. 236.

²⁶⁸ Roberts, 2011, p. 259-308.

²⁶⁹ Roberts, 2011, p. 27.

CHAPTER FOUR

MOTIVATIONS: ACCUSATIONS OF RACISM, ANTI-RACIST HOPES, AND THE ONGOING SCRAMBLE FOR IDENTITY AND PRIVILEGE

Humans' conceptions of their own individual and collective identities as persons—when analyzed in conceptual terms through the application of scholarly theories, as was done in the previous chapter—have been demonstrated to display a rich variety of definitions, of roles, and of purposes in human personal and community life. As has also been demonstrated, this beautiful, interesting, and important variety cannot be adequately nor appropriately accounted for (neither epistemologically nor ethically) by the scientific-technological-industrial practice that is DNA ancestry testing.

At the same time, many humans are in a state of seeking that has something to do with what has been referred to herein as “identity,” and this has driven many actions, among which is participating in genetic ancestry testing, the topic of this research and study. But what are we seeking? This is a difficult and immense question to answer, and there cannot be any single answer to it, nor even a few, that would apply in all cases. For the individual human person, in many instances, this seeking appears to be of a sense of belonging or union, sometimes sought in opposition to deep feelings of isolation or lonesomeness, even estrangement or alienation. Sometimes the desire for sense of place or space is a significant factor. Sometimes there is a fear or hatred of others as well.

What will be considered in this chapter are some of the most profound sociopolitical and individual implications of the ways in which humans identify

themselves and others. For instance, identification with one social group or another (for example, a nation or a family) can and do drive decisions of mortal consequence, such as the willingness to sacrifice one's own life or that of others in violence. In arenas that might not immediately appear so life-threatening or crucial to life, there are matters to consider such as with whom one shares kindness and how to allocate resources that are beyond necessities (however one might define that). These identities-identifications and related actions take place on scales that are both very small and very large, even global. Among the direst consequences are war, famine, and the suppression of political activities that might fight against this maldistribution, hatred, and violence.

While to distill these potentially devastating effects down to a single phrase would be misleading, at the beginning of the previous chapter it was promised that we would return to the “hot political discourses [that are] sometimes described as ‘identity politics,’”²⁷⁰ and that moment as arrived. There is one sense in which using this terminology as a means to better understanding something with consequences so grave seems not only inadequate but inappropriate due to its intense uses in so many fora as an attempted means to cheapen an opponent's argument—“this is all just identity politics.” Yet there is another sense in which this terminology seems so fitting to this research and study, and perhaps is even a needed focus due to its popularity. I think it is possible that, if communicated well, a person who might have used the above phrase in a flippant, dismissive manner might be encouraged to revise their understanding and realize the depths and magnitude of the ways that how we humans identify one another (such as via

²⁷⁰ See p. 87.

concepts-terms of gender, race, ethnicity, nationality, religion) affect life for everyone, and the top-down, hierarchical politicization of all of it.

In order to break down the concept-term “identity politics” just a bit, we may attempt to consider it in some of its aspects. There are, of course, the overtly political. For example, the companion pairing of Censuses and redistricting for democratic representative purposes always brings with it a consideration of the variety of human group identities-identifiers that will count, and how, and for whom. All of this might be considered in other ways, too, but it is clearly occurring in a definitively political arena.

But what about those aspects of identity politics that reach beyond that which is (obviously and primarily) political? There are broad-reaching considerations and analyses of identity politics provided in the collection, *Identity Politics Reconsidered*,²⁷¹ edited by Linda Martín Alcoff, Michael Hames-García, Satya P. Mohanty, and Paula M. L. Moya, including a number focused on disability and sexuality (which have not been addressed directly in this research, but certainly should be), as well as an overall theoretically-oriented approach to the subject which comes into contact with many epistemological and ethical problematics related to identity.

Another aspect of identity politics, which was addressed just a bit in the literature review, has been helpfully termed the “marketization of identity politics” by Catherine Bliss.²⁷² Here we encounter that which might not be considered political but rather economic, and it is in this aspect of identity that we might investigate the various power relations among those who seek to gain economic-monetary means through the

²⁷¹ Alcoff, Linda Martín, et al., editors. *Identity Politics Reconsidered*. 1st ed., Palgrave Macmillan, 2006.

²⁷² Bliss, Catherine. “The Marketization of Identity Politics.” *Sociology*, vol. 47, no. 5, Oct. 2013, pp. 1011–25.

manipulation and exploitation of persons seeking to better understand their identities as humans. Many persons operating in this mode undoubtedly perceive themselves as (simply) part of an organization-industry that provides services that are desired, and themselves are constrained economically. All those caveats aside, I think that it would be very hard to argue that there is not the marketization of identity politics taking place in many forms within this scientific-technological-industrial-personal-social movement.

To demonstrate some of the complex ugliness that is taking place in the world of identity politics, but leading towards something more substantial (Kim TallBear's work), in the Spring of 2020, in *The College Fix*, a self-described source of “right-minded news” [emphasis in original], there was an article titled “‘Self-Indigenization’ and the (Further) Contradictions of Identity Politics”²⁷³ This article utilizes the phrase “identity politics” in the dismissive manner described previously. Here the author points to certain narratives having to do with persons who have claimed their own indigeneity or indigenous community membership without consultation with or permission from the pertinent community or communities, and claims that this is all a part of “identity politics,” and therefore identity politics is wrong or absurd. It is quite tempting not to use the phrase at all.

Henceforth, when and if I utilize the terminology of “identity politics”—I may switch to “the politics of identity,” but I’m not sure it will help—it will not be in this dismissive, propagandistic, rhetorical sense, but rather to generally indicate those aspects

²⁷³ Huber, Dave. “‘Self-Indigenization’ and the (Further) Contradictions of Identity Politics.” *The College Fix*, 11 Apr. 2020. www.thecollegefix.com, <https://www.thecollegefix.com/self-indigenization-and-the-further-contradictions-of-identity-politics/>.

of how human beings think of themselves and their relationships with one another in terms of governmental or otherwise political affairs.

In this chapter I will utilize primarily the works of Kim TallBear, Helen E. Longino, Sandra Harding, Patricia Hill Collins, and Kristie Dotson in order to answer the following questions and similar: Why so popular? That is, what are some of the motivations driving this movement? Some motivations are personally oriented (such as feelings of belonging), but some involve claims of privilege with tangible components (like physical resources). What is and should be the relation between DNA and sociopolitical privilege? How is this science-technology employed in racist ways, and why? Is this, or might this, science-technology be employed in anti-racist ways? If so, how is it or should it be?

In addition to giving some answers to these questions and discussing ensuing problematics, the aim will also be to relay and propose some epistemological and ethical frameworks which might be useful in finding different ways to interpret all this data coming at us from the scientific-technological industry of DNA ancestry testing, and furthermore some things that, in turn, might be asked of that industry.

At the outset of this dissertation, I included the following brief description, which was prompted and inspired almost entirely by my reading of Kim TallBear's *Native American DNA: Tribal Belonging and the False Promise of Genetic Science*.²⁷⁴

²⁷⁴ TallBear, Kim. *Native American DNA: Tribal Belonging and the False Promise of Genetic Science*. University of Minnesota Press, 2013.

Numerous indigenous communities and individuals converse and participate in national and global debates about the usefulness of DNA for member-identification and citizenship purposes. Some persons and groups are coerced by law and by force into incorporating DNA test results into their definitions of who they are with regards to their indigeneity and their specific group membership. The result of these oppressions can and does often have the immediate and practical effect of increasing or decreasing, beginning or ceasing, the provision of basic goods and services that sustain individual, familial, and community life. On a grander and longer-term scale these efforts are a part of the continual reshaping of the conceptual boundaries that define indigenous communities—present and past—sometimes with, but more often without, meaningful consent from those same communities, or their descendants as may apply. Meanwhile, foundational practices and principles utilized in the formation and evolution of DNA ancestry testing science and technologies rely fundamentally on the acquirement of genetic materials, actual bodily resources, from these communities, and indeed also historical and cultural information. These foundational principles, or concepts, and actions form the epistemologies and ethics which are being investigated as a part of this project.

In *Native American DNA*, TallBear conveys and utilizes an “indigenous, feminist approach to DNA politics.” And, although she does not term it in this way, in this monograph TallBear argues that indigeneity—or, rather, indigeneities, since they are not all of the same kind, but rather grouped together, it might be argued along the lines of (post)coloniality—is not captured by genetic science and takes away from communities their epistemic power to determine their own membership according to local community-based ideas and ways. Following a brief aside in order to clarify some terminology and make one brief related observations, there will be a summary of some of TallBear’s key concepts and analytical tools as they might be applied in this research project, including “coproduction (of natural and social orders),” “articulation,” and “decolonizing methods.”

In some previous portions of this dissertations, especially those having to do with critiques of nationalism (for example, Benedict Anderson), there has been made a distinction between “nation” and “country” that emphasized, for example, how some DNA ancestry-test takers tend to insert the word “country” even when prompted with the word “nation” or “nationality” when discussing those results. In those contexts, the

conceptual distinction we were seeking to understand seemed to have something to do with how (some) humans feel that their country is more a part of them in terms of their identity, whereas nationality is something that comes from the outside. From that perspective, with its emphasize on feelings of personal-social identity, “country” is the preferred term.

Something that is not quite opposite, but very dissimilar, is the preference for the term “nation” in certain contexts as indicating a community of humans much smaller than the country/nation-state. This is, for example (and as might pertain to Tomi’s case from the last chapter), is for some Igbo in Nigeria who identify as members of the Igbo Nation. I am certain that I understand only a fraction of the sociopolitical dynamics involved in this, however it seems that at least one aspect of seeking the status of nationhood in this instance is for official, and other practical, recognitions and benefits.

This brings us to a, at least as I perceive it, somewhat parallel situation in North America, where indigenous communities are also motivated to gain-maintain the status of nationhood in order for their communities to be recognized by those persons and institutions which quite actually hold powers of life and death. A great motivation for nationhood.

To get into some of the particulars of this, rather than remaining in the realm of generalizations and comparison, we can now turn to TallBear’s “indigenous, feminist approach,” and especially her explanation and applications of “coproduction (of natural and social orders),” “articulation,” and “decolonizing methodologies.” It may also be recalled that in the literature review there was some general discussion of TallBear’s work, including some of that done in partnership with others, which will not be repeated

here. Also in the literature review was some mention of TallBear’s commentary on some highly prominent figures (prominent in quite different ways, of course), politician Elizabeth Warren and documentarian Spencer Wells.²⁷⁵

TallBear’s work is self-reportedly highly multi- and interdisciplinary, drawing from “...science and technology studies (STS), or social studies of science and technology, and Native American and indigenous studies (NAIS). It also draws on ‘cultural studies’ scholarship and frameworks but informs them with STS and NAIS literatures and methods... All three fields—STS, NAIS, and cultural studies—share critiques of universality and objectivity in the Western sciences, with feminist-oriented strands of STS being more critical in that regard than is mainstream STS.”²⁷⁶ TallBear’s approach and methodology is not only so well-suited to application this project, but bolstered my confidence in my own interdisciplinary work.

TallBear describes “coproduction” as “a key STS analytical tool that explains natural and social orders as coproduced.”²⁷⁷ Although I was not familiar with this term-concept-tool prior to reading TallBear, it did not seem unfamiliar insofar as it (helpfully) corresponds or complements several humanistic ideas and theories with which I have been long familiar. To mind immediately comes my training in feminist philosophy of science, in particular Helen E. Longino in *Science as Social Knowledge: Values and*

²⁷⁵ See pp. 60-63.

²⁷⁶ TallBear, 2013, p. 10-11.

²⁷⁷ TallBear, 2013, p. 11.

*Objectivity in Scientific Inquiry*²⁷⁸ and Sandra Harding in *The “Racial” Economy of Science: Toward a Democratic Future*,²⁷⁹ both referenced in the literature review.

Though I will not write of their conceptualizations-theories here, in their differences and similarities, I will say that it is the study of these works and similar that, in large measure, led me to have an understanding of “science” that is social and that is humanistic. I would say that prior to my encounter with these ideas that, generally speaking, I considered “science” to be near synonymous with “objective truth that has nothing to do with human perception.” I was taught that one of the main points of science is to remove variables, and human beings seemed like one of those big variables that just *must* have been removed before something could be called “science.” Now my understanding is rather opposite. Science is a type of action, a human practice, and (as have already said a few different ways throughout this dissertation) is infused-affected-created by human ideologies as much as other human practices, like law and music.

This thinking, springing in part from my close attention to feminist philosophers of science, coheres well with this term-concept of “coproduction” as described by TallBear. “[S]cience and technology are explained as actively entangled with social norms and hierarchies. Rather than being discrete categories where one determines the other in a linear model of cause and effect, ‘science’ and ‘society’ are mutually constitutive—meaning one loops back in to reinforce, shape, or disrupt the actions of the

²⁷⁸ Longino, Helen. “Subjects, Power and Knowledge: Description and Prescription in Feminist Philosophies of Science.” *Feminist Epistemologies*, edited by Linda Martín Alcoff and Elizabeth Potter, Routledge, 1993, pp. 101–20.

²⁷⁹ Harding, Sandra G. *The “Racial” Economy of Science: Toward a Democratic Future*. Indiana University Press, 1993.

other.”²⁸⁰ TallBear goes on to clarify and emphasize that coproduction is not some elegant, well-balanced partnership, quite the contrary. “[P]ower is held unevenly,” thus this coproduction loop not only involves influence back and forth but also reinforcement of existing social power structures.

In the context of “Native American DNA,” as TallBear somewhat provocatively titles her book—given that she is, as I understand it, arguing against the conception of Native American identity being quantifiable in genetic terms alone, and that is exactly what many might read into that title were they not to make it past those three words—TallBear discusses how “coproduction facilitates and helps make sense of what could otherwise be a very confusing multidisciplinary analysis of the emergence of Native American DNA as a complex social and scientific object... such bounded ethnic or racial descriptions of certain nucleotide sequences would not have any salience were it not for the established idea within genetic science that ‘Native American’ (or ‘Amerindian’ and the like) is a distinct genetic or biological category.”²⁸¹ So, as I think about it, there is one sense in which I might think of the social as prior, and yet another sense in which I might think of the genetic-biological as prior. Rather than considering this an unresolvable paradox, the idea of coproduction is helpful (in a manner similar, but distinguishable, from Longino’s “science as social knowledge” and Harding’s focus on “‘racial’ economy” in science).

“Articulation,” similarly (and, as TallBear specifies, following Stuart Hall and James Clifford in their early expressions of this idea), “complicates overly dichotomous

²⁸⁰ TallBear, 2013, p. 12.

²⁸¹ TallBear, 2013, p. 12-13.

views of phenomena as either essentially determined or overly constructed or invented, thereby implying a lack of ‘realness.’” Perhaps a principle difference between “coproduction” and “articulation” is that articulation emphasizes this new real-ness that is created when two things are brought together and something else, “neither strictly old and traditional nor completely new and different” comes into being, into reality. The emphasis is on the dynamic transformation of culture through borrowing, interpretation, and reconfiguration, and the (ontological) reality of that throughout despite the incessant change inherent in human life.²⁸²

The last emphasis-approach, and something which TallBear advocates throughout her work so far as I have encountered it, is “decolonizing methods.” As TallBear defines this, “Rather than integrating community priorities with academic priorities, changing and expanding both in the process, decolonizing methods begin and end with the standpoint of indigenous lives, needs, and desires, engaging with academic lives, approaches, and priorities along the way. [Linda Tuhiwai] Smith’s *Decolonizing Methodologies* (1999) opens with a classic charge against researchers by indigenous peoples.”²⁸³ While this statement is wonderfully clear and helpful, it is the rest of this monograph which made this practice so very clear to me, and it is the first part of it which most captures me upon revisiting it now. Following that “Rather than...” is a string of words that likely capture what many people, including myself in many instances, probably think of as good or at least acceptable relations between researchers and those persons whom they research. Is it not good enough to integrate the aims of the

²⁸² TallBear, 2013, p. 14-15.

²⁸³ TallBear, 2013, p. 20.

research process with the aims of the subjects of research? This certainly seem far better than many, for instance ethnographic and anthropological studies that I have read over the years, and even some of those coming out today. Here it seems that at least the persons being studied are taken into consideration. But that “at least” is the problem. It is not enough, not balanced, and light years away from “decolonizing”; it does not recognize or take into account the structures of social power involved, and does not work towards justice-decolonization. What is necessary, by contrast, and as TallBear puts it, is that research begins and ends with “the standpoint of indigenous lives, needs, and desires.”

Connecting these ideas, which are still rather abstract, to that which is causally effective in making manifest in life these hierarchical discriminations, TallBear reaches repeatedly into the realm of law, not only as a means of finding examples to support her arguments (which she does), but also to question how it is that all of this, the capacities of this science-technology, might be harnessed and utilized by indigenous Native American communities and nations as they continually resist and fight back against renewed oppressions that have not ceased since the murderous-rapacious European mostly settler-colonialism of the continent began so many centuries ago.

So, following this, one of TallBear’s big questions is:

The question is, as genetic identities and historical narratives command increasing attention in society, will they come to rival as legitimate grounds for identity claims the existing historical-legal foundations of indigenous governance authority?²⁸⁴

This is an excellent question for our purposes here as well. It may the case that whoever is reading this might disagree with the ways in which identity claims are made

²⁸⁴ TallBear, 2013, p. 10.

in their own (legal-governmental) society, but at least we know what those means of making identity claims are, or we can presumably find out. However, to predict the ways in which “genetic identities” might gain precedence, now that such a concept is possible (and, I think, already sensible to many) is quite another task. And furthermore, to attempt to work with those possibilities and make them advantageous to one’s own community is yet another level of problematic. But that is what TallBear is tackling, and for her own community as well as others.

Moving in this journey of research and study from the more abstract towards that which can be more readily applied as well, and seeking to sift through theory in order to find those which might better address some of the political problematics of DNA ancestry testing, we will next take a look at the framework for a “Black feminist epistemology” as outlined by Kristie Dotson and as “inherited” from the sociological contributions of Patricia Hill Collins.

This scholarship is personally-academically especially interesting to me due the amazing bridge creates between work in sociology and work in philosophy, and in epistemology specifically. This scholarship is doubly interesting and applicable insofar as, although we only see the word “epistemology” in the title, it can be thought of as dealing with ethical issues as well. As will be outlined here, and this is another bridge that has had a huge impact on my thinking and was largely inspired by the work of Dotson, in this Black feminist epistemology, epistemology and ethics are not separate, nor separable. Theirs is intellectual work in service of social justice.

Now to be considered is “Black feminist thought” and “Black feminist epistemology” as articulated by Patricia Hill Collins and Kristie Dotson with an emphasis on how each of these scholars understands their academic work as contextualized by, and existing for, the purposes of ending oppression. Patricia Hill Collins is a sociologist by training and is Distinguished University Professor of Sociology Emerita at the University of Maryland, College Park. Collins is renowned for her seminal monograph *Black Feminist Thought*, first published in 1991, which is now in its second edition and third printing, as well as for her lecturing, social activism, and many other written works. Kristie Dotson is a philosopher and epistemologist by training and is Professor of Philosophy and Afroamerican and African Studies, and University Diversity and Social Transformation Professor at the University of Michigan, who has explicitly picked up Collins’s epistemological project. I state their academic disciplines and positions here to show some of the relation of this “inheritance,” and due to my interest in continuing to follow Dotson’s ongoing epistemological work.

I will begin by outlining Collins’s conceptualizations of Black women’s standpoint and Black feminist thought, giving particular emphasis to epistemological concerns. Next, I will outline Collins’s epistemology as described in *Black Feminist Thought*, occasionally referring to some of her other writings I will then proceed to look at how Kristie Dotson has taken up Collins’s work as a definitively philosophical enterprise, especially in her article, “Inheriting Patricia Hill Collins’s *Black Feminist Epistemology*.” Lastly, I will return to Collins in her more recent article, “Black Feminist Thought as Oppositional Knowledge,” wherein she revisits her previous work, and provides some insights and updates for contemporary times. Through this process I aim

to develop a better understanding of the epistemologies put forth by Collins and Dotson; how their epistemological-ethical work addresses the intersectionality of racism, sexism, gender discrimination, and class discrimination, among other forms of oppression; and, some of the ways in which these scholars form their intellectual work so that it contributes to (the practical ends of) social justice.

At the outset, it is helpful to establish that Collins's analysis makes a useful distinction between Black women's standpoint and Black feminist thinking. According to Collins, Black women's standpoint (or, perhaps better, standpoints) consists of the social positioning of the Black women and their diverse responses to that positioning. Black feminist thought, by contrast, is defined as that mode of Black women's thinking which takes place in the institutional academic context, often in the form of critical social (or philosophical) theory. While she defines these two realms clearly, the point is not to separate them, but rather to show the relation between the two, about which more will be said later. The second layer of distinction which is helpful here may be made *within* the realm of Black feminist thought, and that is between Black feminist thought generally, and Black feminist epistemology specifically. So, to summarize Collins's framework in reverse, Black feminist epistemology falls within the realm of Black feminist thought, which in turn reflects on the overall realm of Black women's standpoint.

According to Collins, some of the main themes of Black feminist thought are: work, family, and oppression; controlling images; the power of self-definition; sexuality and sexual politics (including systemic rape and abuse); love relationships; motherhood; and, that there are many varieties of political activism and other manifestations of resistance. Collins also speaks of the "distinguishing features" of Black feminist thought,

some of which overlap with the key themes, and some of which provide (this reader, at least) additional insight into her overall analysis.

The first of these distinguishing features is entitled, “Why U.S. Black Feminist Thought?” This question might be most simply answered, “Because Black women in the U.S. are oppressed.” It is interesting to note that right off the bat she notes how African American women are oppressed due to the “intersecting oppressions of race, class, gender, sexuality, and nation.”²⁸⁵ Quite the opposite from over-simplifying, Collins constantly reminds us of the complexity of networks of oppressions. This question is also clearly addressed in Collins’s essay, “The Social Construction of Black Feminist Thought,” which slightly predates the monograph and was likely written around the same time. Herein Collins discusses the long tradition of resistance among Black women activists and notes how “[t]he long-term and widely shared resistance among African American women can only have been sustained by an enduring and shared standpoint among Black women about the meaning of oppression and the actions that Black women can and should take to resist it.”²⁸⁶ Unpacking this rich quote reveals a great deal. The tradition of Black women’s resistance is not only historical and present-day, but also descriptive and normative. It is what has already been occurring and, according to Collins, it is also that which *should* be continued and built upon.

²⁸⁵ Collins, Patricia Hill. *Black Feminist Thought: Knowledge, Consciousness, and the Politics of Empowerment*. 1991. 3rd ed., Routledge Classics, 2009, p. 25.

²⁸⁶ Collins, Patricia Hill. “The Social Construction of Black Feminist Thought.” *Words of Fire: An Anthology of African-American Feminist Thought*. New Press, 1995, p. 338.

The second feature of Black feminist thought Collins distinguishes has to do with the great diversity of responses of Black women to their common challenges.²⁸⁷ Collins explains these differences on both an individual and a group scale. In terms of individuals, of course there is significant variation from person to person based on their individual experiences, but there is also variation based upon societal norms and assignments of varying kinds which are forms-aspects of human identity, including, for example, social class, gender identity, religion, and sexuality. Here of particular interest epistemologically-speaking is Collins's idea that Black women's standpoint (which she also defines as "group knowledge," although with caveats) has embedded within it the historical struggles of Black women.

The third feature Collins notes is a strong link between thought and practice. Here Collins discusses what she terms the "dialogical"²⁸⁸ relation between thinking and action—between our knowledge and how we act on it—in Black feminist thought. In contrast to the practice of separating, or attempting to separate, the two, she explains a reciprocal relationship wherein one is always responsive to the other. Changes in thinking require changes in action, and vice versa.

The fourth feature discussed expounds on the importance of, in Black feminist thought, the relationship between African American women intellectuals and Black women's standpoint. As Collins explains, the mere "fact" that there is a Black women's standpoint does not mean that all Black women intellectuals have a firm grounding in it, nor that their understanding of it is being put to good use (i.e. for the empowerment of

²⁸⁷ Collins, 2009, pp. 28-33.

²⁸⁸ Collins, 2009, p. 34.

Black women).²⁸⁹ Herein (and elsewhere) Collins discusses the long and rich history of Black women's intellectual thinking which has been destroyed, disvalued, and subverted by the hegemonic powers at play in the academic world (and in culture more broadly), and also the relationship of Black women intellectuals to Black women's communities. She affirms that this relationship has historically been very strong, and that it is up to contemporary Black women intellectuals to continue and strengthen this tradition of interconnection. This feature also emphasizes the high value of Black women's experience in Black feminist thought. Also, of special interest to our epistemological discussion of human identity is (again) Collins's affirmation of the importance of self-definition. "Black women intellectuals from all walks of life must aggressively push the theme of self-definition because speaking for oneself and crafting one's own agenda is essential to empowerment."²⁹⁰ This, I believe, is a key theme both of Collins's social theory. Self-definition and (subsequently or simultaneously) identity are absolutely crucial components that inform both our internal or reflexive thinking, and our outward-bound or social thinking (if it is even appropriate to separate the two at all, since they are so interdependent).

A fifth feature of Black feminist thought discussed by Collins is dynamism and responsiveness. As Collins describes, Black feminist thought cannot afford to be anything but "dynamic and changing."²⁹¹ As a part of Black feminism broadly speaking, its main aim must be to be a support to the social justice project, and to do this effectively it must constantly respond to changing social conditions. In this section, Collins also addresses

²⁸⁹ Collins, 2009, p. 37.

²⁹⁰ Collins, 2009, p. 40.

²⁹¹ Collins, 2009, p. 43.

how the changing conditions which affect Black women's work in all of U.S. society also, in turn, have great significance for Black women's intellectual work. Here she remarks again on the historical repression of Black women's intellectual work, and explains how, in many or most instances prior to very recent times, Black women's intellectual work by necessity took place outside of academic institutions (which have typically excluded or marginalized their work). Collins notes that, now that this has begun to change and Black women intellectuals have more influence in institutional settings, that there are many new opportunities but also new dangers. The new opportunities, of course, lie in greater visibility for Black feminist thought. As for the dangers, Collins outlines them as falling into (at least) three categories.²⁹² First, in becoming isolated from Black women's collective experiences in the greater society, and therefore in becoming unresponsive to those voices. Second, in the tendency to fall in line with the inertia of "traditional" academic thinking and to separate thought from practice, which is central not only to Black feminism but to all critical social discourse. And third (similar to the first), in becoming enamored with one's own way of thinking and no longer feeling compelled to address the needs of Black women in the rest of society. Although not mentioned here, these three dangers are also responded to by Collins's *oppositional knowledge* project, which will be addressed before concluding this sections on the work of Collins and Dotson.

Collins ends this description of distinguishing features of Black feminist thought by contextualizing it within the broad framework of social justice for all. Here she draws on Ama Ata Aidoo, writer and former Ghanaian minister of education, and notes some

²⁹² Collins, 2009, p. 45.

similarities between U.S. Black feminism and Black diasporic feminisms. I will quote it here at some length because it so beautifully reinforces one of the key themes of Collins's work, that of its interconnectedness with other discourses which have similar or intersecting aims:

Aidoo recognizes that neither African nor U.S. Black women nor any other group will ever be empowered in situations of social injustice. Social just projects are not either/or endeavors where one can say, 'We have our movement and you have yours—our movements have nothing to do with one another.' Instead, such projects counsel, 'We have our movement, and we support yours'... The words and actions of these diverse Black women intellectuals may address markedly different audiences. Yet in their commitment to Black women's empowerment within a context of social justice, they advance the strikingly similar theme of the oneness of all human life.²⁹³

Here we see that Black feminist thought is, in part, born out of necessity. Given deeply embedded white supremacist social structures, Black women will not be empowered otherwise. There is both beneficence and self-interested practicality at play here. Beneficence insofar it is clear that Collins wishes to communicate that there is a theme of empathy and caring in Black feminist thought. Self-interested practicality insofar as all Black women are the targets of multiple forms of oppression always including racism and sexism, and many times also including class or economic discrimination, religious discrimination, colonialist ideologies and actions, heteronormativity, ableism, and the list goes on. And, of course, as intersectionality indicates, these oppressions are not experienced in ways that can be extricated from one another; the effects are interlocking and interdependent, and in many ways, create a new "articulation" of identity (Hall and Clifford) in every individual person.

To elaborate further Collins's position, she is emphatic, throughout *Black Feminist Thought* and all of her other work that I have encountered, that all social justice

²⁹³ Collins, 2009, pp. 47-48.

movements are interconnected and should be thought of and acted on as such. The varieties of oppressions that are present in this world are not independent from one another, and in order to combat one we must combat them all. This is, of course, not to argue that those who are most oppressed do not deserve the most support (I believe they do), but rather to come to the understanding that each form of oppressive, hierarchical discrimination that exists reinforces all the others. In weakening one, we weaken them all, In strengthening one, we strengthen them all.

To summarize, Collins's *Black Feminist Thought* outlines Black feminist thinking in terms of core themes (work, family, sexual politics, motherhood, and political action) and distinguishing features (those outlined above), and constantly contextualizes itself by relating the conversation back to social goals. And, after establishing all of this, she moves forward to propose a Black feminist epistemology, which we will now discuss.

Collins begins her discussion of Black feminist epistemology by describing the (hostile) context in which it emerges. She explains that, in the context of "Western" epistemological traditions, Black women's knowledge has been systematically excluded and distorted due to, in large part, there being no conceptual space for the legitimization of their knowledge. As all knowledge validation takes place within and as a result of social context, so too (and perhaps especially), what counts as knowledge in U.S. institutions of higher learning (and elsewhere) is determined by white, male, elite norms.²⁹⁴ That given, Black feminist epistemology has an incredibly steep uphill climb in order to gain acceptance.

²⁹⁴ Collins, 2009, p. 269.

As a precursor to presenting her epistemology outright, Collins briefly articulates some helpful distinctions worth reviewing here, namely, the differences among paradigms, methodologies, and epistemologies. As she outlines, intersectionality is an example of a *paradigm*, in that it is an “interpretive framework” which we use to help us understand social phenomena.²⁹⁵ A *methodology* by contrast, is a specific manner in which we apply that interpretive framework (presumably hoping for consistent results). Lastly, an *epistemology* is utilized in order to determine what questions will be asked, what interpretative frameworks and methodologies will be applied in order to answer that question, and how the answers will be put to use. Now, having already outlined Black women’s standpoint earlier in her analysis, and with the aforementioned definitions in mind, Collins begins to build a Black feminist epistemology.

The first criterion for knowledge in Collins’s Black feminist epistemology is lived experience. Here Collins differentiates between knowledge and wisdom, and notes how wisdom, described as that sort of knowledge which has been passed on and enabled survival in an oppressive society, is highly valued in Black women’s standpoint, and therefore should be part of a Black feminist epistemology.²⁹⁶ She further clarifies this in two ways, through the lens of race and through the lens of gender. In terms of race, Collins gives that example of foolishness (i.e. the opposite of wisdom) as not allowable for members of subordinate groups. While white women are allowed more foolish mistakes, Black women have the wisdom to know that they will be afforded no such luxury. In terms of gender, Collins notes that some feminist thinkers argue that women as

²⁹⁵ Collins, 2009, p. 270.

²⁹⁶ Collins, 2009, p. 275.

a group are more likely to value lived experience, regardless of race and other personal-social identity factors.

The second criterion for knowledge put forth by Collins has to do with the importance of dialog in the assessment of knowledge claims.²⁹⁷ In keeping with extrapolating her epistemological criteria from Black women's standpoint, she establishes this criterion as having both African and African American origins. In terms of African origins, she cites Molefi Asante's (relational) understanding of humanity as something that one gains over the course of a lifetime, and that is worked out through discussion with others. Focusing on U.S. cultural aspects, she emphasizes how "Black women's centrality in families, churches, and other community organizations"²⁹⁸ also portends this emphasis on dialog as a criterion for assessing knowledge. Again, it is through discussion that what is the truth is worked out.

The third criterion she establishes is an ethics of caring. This, I find, is a striking feature of Collins's epistemology that even further refines and distinguishes it from the Western modes of epistemology which it opposes. Typically, again in Western epistemology, ethics would not even be a concern. In fact, it is easy to look up a map or tree of the branches or subdisciplines of philosophy, and, by in large, one will find that in those maps epistemology and ethics are about as far apart as two realms can be. Collins's epistemology runs strongly contrary to this, and places ethics in a central role. Again, as with the second criterion, she notes an overlapping in principles of feminist and African origins that further support this criterion.²⁹⁹

²⁹⁷ Collins, 2009, p. 279.

²⁹⁸ Collins, 2009, p. 281.

²⁹⁹ Collins, 2009, p. 283.

The fourth criterion regards personal accountability. Again, in traditional Western epistemology this is not even a concern. In fact, much of the point of traditional Western epistemology is to separate the knower from the known.³⁰⁰ Here, that conception is turned upside down and who the knower is becomes centrally important. The knower is accountable in at least two senses. First, they must demonstrate that they care about the position being advocated. Second, they must be accountable for their own opinions, both in theoretical and practical aspects. Collins provides an example in support of this from her teaching. She relays one instance when she was teaching a class of students consisting entirely of Black women, and the topic was an analysis of Black feminist thinking written by a Black man. She remarks how her students “demanded facts about the author’s personal biography,”³⁰¹ especially information about his social relationships, before making knowledge claims about his theoretical work. Collins assessment is that this sort of knowledge validation process is an example of the alternative criteria employed by Black women, and that it should therefore be addressed by a Black feminist epistemology.

Collins last epistemological criterion relates to agency, particularly, “Black women as agents of knowledge.”³⁰² In certain regards this is self-explanatory: Collins clearly wishes to emphasize that the overall effects of this reformulation of epistemology should be to place Black women in the center as knowledge-creators. She is specifically

³⁰⁰ Addelson, Kathryn Pyne. “Knowers/Doers and Their Moral Problems.” *Feminist Epistemologies*. Routledge, 1993, pp. 266.

³⁰¹ Collins, 2009, p. 284.

³⁰² Collins, 2009, p. 285.

concerned with Black women scholars as they continue to enter academic professions in greater and greater numbers. She explores this idea further in “Learning from the Outsider Within,” where she appeals to Black women sociologists, who remain grounded in their communities and have a deep (but critical) understanding of theory, as being in a remarkable position to be critical from both “outside” and “inside” perspectives.³⁰³

Collins ends her exhibition of Black feminist epistemology by noting the practical impetus for creating it. It is not conceptual incongruencies nor philosophical inclinations that principally guide her work, but rather results. She argues that controversial knowledge claims are rarely taken seriously, and even more rarely incorporated into mainstream theories, because the epistemological space for them is lacking.³⁰⁴ Collins hopes that, through the creation of a new and oppositional epistemology, such space might be expanded, making way for future knowledge claims that are reflective of Black women’s concerns. Collins views creating a new epistemology as more “threatening” to the current paradigm than making new knowledge claims alone, and therefore pursued creating that epistemology.

Kristie Dotson takes up where Patricia Hill Collins leaves off in the development of her Black feminist epistemology. As a philosopher and epistemologist with a scholarly background ranging from African American studies to Business Administration to

³⁰³ Collins, Patricia Hill. “Learning from the Outsider Within: The Sociological Significance of Black Feminist Thought.” *Just Methods: An Interdisciplinary Feminist Reader*, edited by Alison M. Jaggar, Paradigm Publishers, 2014, p. 317.

³⁰⁴ Collins, 2009, p. 290.

Literary Criticism,³⁰⁵ Dotson approaches the subject in a way that few (or perhaps, none) have. I say “perhaps, none” here because Dotson herself notes how rare her point of view is. According to her 2012 article, there were as of that time “fewer than 30 Black women [who] hold PhDs in philosophy and also work with philosophy departments within North America,” and if one further narrows that number to those are working on Black feminism, the number would grow “to something like roughly 8 people.”³⁰⁶ .

Although there are a number of fascinating points which Dotson draws out from Collins’s work, for the purposes of this paper I will focus on two: one, her overall estimation of the magnitude of Collins’s work, and two, her primary concern about it. To address the first point, Dotson makes very clear the truly epic nature of the work that Collins undertook in *Black Feminist Thought*. Dotson explains how Collins not only took on the “first-order” work of articulating the standpoint of Black women collectively, but also the “second-order” work of analyzing that standpoint for themes, and the “third-order” work of seeking out an explanatory framework for those themes.³⁰⁷ (Dotson further elaborates how, per Hortense Spillers, “third-order” discourse can become “first-order” if it remains in touch with and relevant to the purposes of the community in question.) Dotson also emphasizes how empowerment is a primary theme of Collins’s work, both empowerment through the deconstruction of hegemonic ideologies, and

³⁰⁵ Dotson, Kristie. “Philosophy from the Position of Service.” *Philosopher*, 9 Jan. 2015, politicalphilosopher.net/2015/01/09/featured-philosopher-kristie-dotson/.

³⁰⁶ Dotson, Kristie. “How is this Paper Philosophy?” *Comparative Philosophy: An International Journal of Constructive Engagement of Distinct Approaches toward World Philosophy*, vol. 3, no. 1, 2012, p. 4.

³⁰⁷ Dotson, Kristie. “Inheriting Patricia Hill Collins’s Black Feminist epistemology.” *Ethnic and Racial Studies Review*, vol. 38, no. 13, 2015, p. 2324.

empowerment through the construction of new knowledge, and states her adamant agreement with these conclusions.

Dotson's primary worry with Collins's epistemology arises in relation to "ascriber roles for knowledge possession."³⁰⁸ Insofar as the theory must deal with *who* is able to generate and validate knowledge, it is in part ascriber-based. The piece provides an analysis of the ascriber dynamics of this epistemology and leaves us with the question of how it might be worked out. Dotson takes it as her next question to answer, "[H]ow does one construct a Black feminist epistemology without relying on ascriber-based knowledge possession criteria?"

In her current work, Collins continues to address and reflect on both her prior work and the constantly changing circumstances of the present. In her recent (2016) article, "Black Feminist Thought as Oppositional Knowledge," Collins argues that the concepts and methodologies of Black feminist thought deserve revisiting in light of contemporary conditions in both public and academic spheres. Black feminist thought was born, practically and theoretically, out of opposition.³⁰⁹ It rose in opposition to the practice of the economic and political oppression of Black women. It rose in opposition to the white male-dominated realm of Western-centric theories in the academy. Today, Collins relays, there is a greater sense, at least on some surfaces, of inclusivity. However, in a time when universities are professing that their curricula are intersectional, yet systematic oppression persists, Collins asks, what does it mean to be oppositional?

³⁰⁸ Dotson, 2015, p. 2326-2327.

³⁰⁹ Collins, Patricia Hill. "Black Feminist Thought as Oppositional Knowledge." *Departures in Critical Qualitative Research*, Fall 2016, p. 133.

Ultimately, she argues that it is through the continued creation and sustenance of diverse Black women's intellectual communities, through the recognition of the superficiality of some things labeled "progress," through the perseverance of Black women and (to a lesser degree) all their allies, and through a focus on the power dynamics of knowledge creation and distribution (rather than the knowledge product alone) that there might be a continuous renewal of oppositional thought.

It is my conclusion these approaches or theories or sets of tenants—such as Black feminist epistemology with its oppositional insistence, reaction to dynamism, and concern about the relation between knowledge production and action—are key to understanding not only what is occurring in this scientific-technological-industrial-personal-social movement, but also how we ought act in reaction to it, politically, given its significant, varied, and ongoingly changing implications. It is likewise with that which was described earlier as indigenous, feminist, and decolonizing. It is these sorts of theories, multifaceted in their concerns, unflinching in the face of fast-paced change, dealing with the concerns of knowers and knowledge creation, and so insistent on ends that create justice, that should be at the forefront of this research and its applications.

CONCLUSION

PROBLEMS WITH REALISMS

It is safe to say as I have been writing this dissertation on DNA and human identity that I did not know how it would end. Indeed, possible conclusions remain tentative and amorphous as I write these last words, although simultaneously I know that some definable progress has been made.

I feel compelled to reiterate at this juncture that it has not always been the case that I was so open to such a variety of possible conclusions with regards to this subject of genetic ancestry testing. Initially, I approached this research project with, if not predetermined conclusions in mind, then at least strong inclinations along a particular critical trajectory. But that changed, at first slowly, and then rapidly and in a variety of ways.

Now that I have read, listened to, watched, overviewed, and reviewed hundreds of materials pertinent to these discourses and these ideas—and as I continue to ponder the possible integrations and meanings of them, the many ways that they are and can be understood—the ways they might be brought together and analyzed, seem infinite and certainly uncertain. Yet, at the same time, I am sure it is all very important. I continue to do this work from a place of curiosity, wonder, urgent concern, and necessity.

Beyond the conclusions in Chapter Four, with regards to the sorts of humanistic and social-scientific theories that might be best applied to understanding this scientific-

technological-industrial-personal-social movement from a political perspective oriented towards action—which I do think are important and I intend to make good use of in the future—I have remaining philosophical questions and concerns, which may never be resolved, but that I continue to ponder as I experience this human life. Having explored so many components and aspects of this movement, I have wondered how it contributes to our understanding of what is human, what it is to be human, what it is to be human with others, and furthermore, what is real?

In this research, study, and writing, I have encountered again and again ideas having to do with things as tiny as the *microscopic* (or even smaller—such as nucleotides), and things as *macroscopic* as continents (and even larger—considering this as a global movement). I have dealt intermittently, and hopefully integratively, with analyses of that which we might term “concrete” or “physical” and that which is “abstract” or “conceptual” (researching and reflecting on how the ‘two’ are the same and different at once). And, throughout these contemplations has run the continual theme of relationships between personhood and community and their historical dynamics.

Early on in this dissertation I briefly discussed the relatively recent, ongoing, and substantial change in the use of the term “identity” in English language discourse. While prior to recent decades, say the last half of the twentieth century to the present, the primary usage of the term “identity” was in reference or relation to the individual person (e.g. “Could you identify her?”), though sometimes more abstractly than that, but then there was a change towards this usage of the term “identity” to refer to how individuals

define or view themselves in relation to communities of which they are a member, and communities of which they are not, that is, “social identity.”

But this reported change in linguistic usage, its etymological evolution, does not indicate a transformation from one into another that is utterly different from that which it sprang. To the contrary, the two are intimately related (I speak here not to the etymology, but to the concepts). How is it that my social identity becomes a part, or is an aspect of, my personal-individual identity? If I *am* a woman, and I *am* white, and I *am* an American and so forth, what is the sense of being as indicated by that “am”? The separation between the self and the other is not so clear.

When considering other sorts of conceptual separations and boundaries, not just the borders of nations and the definitions of races as have been discussed so much herein, and going microscopic again, at what point does one cell become two? This is (in my scholarly world) a traditional philosophical problematic that can and has inspired seemingly endless debate. Reflecting on that problematic in the context of cell division, wherein the DNA is replicated and so forth, and knowing how impactful these tiny, tiny sequences of genetic code are and can be on human life, what additional dialog might be inspired?

Philosophers of science—as Charles W. Mills discusses, and as I have perceived also in my own studies—tend to describe realism and that which is “realist” as strongly associated with, I dare say correspondent with “a belief in natural kinds with defining essences.”³¹⁰ There is an equation or equivocation among that which is real, that which

³¹⁰ Mills, Charles W. *Blackness Visible: Essays on Philosophy and Race*. Cornell University Press, 1998, p. 46.

has an essence, and that which is scientifically deemed to be knowledge. That is to say, according to this line of thinking, that to be a realist, to think knowledge empirically obtainable and objective, that one must, in short, be a scientific essentialist, believing in that which can be categorized and named according to its essence. “DNA” is most often utilized to indicate such an essentialist idea.

There are, however, other ways to think about what DNA is, and what it means. As explicitly conceptualized in a number of theories researched, studied, and applied in this dissertation, DNA is not best, nor even correctly, construed as a solely physical, quantifiable object. It, too, is social. It, too, is ideological.

And, as the gene is “enculturated,”³¹¹ so too has culture become geneticized in response to this movement, and perhaps also in anticipation of what is potentially to come. Hence our question: how might genetic knowledges be used or abused?

Superseding in scope this conversation about genetics is a greater humanistic discourse about the overwhelming dominance of the natural sciences in the determination of what is truth, what is knowledge, and what is reality. This dissertation is intended as a contribution, and as a promise of future work, towards complicating and remediating the reductiveness, stagnation, and lack of empathy in human thinking and action, which is resultant from the epistemological and ethical dominance of this one sort of discourse—this one sort of perspective on the world—over so many others.

³¹¹ Fullwiley, Duana. *The Enculturated Gene: Sickle Cell Health Politics and Biological Difference in West Africa*. 2017.

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APPENDICES

Appendix I: Selected Text from the Comments on Tomi Makanjuola's YouTube video³¹²

Comment exchange A:

Keke: “Hi! So I just discovered your youtube channel. Thanks so much for sharing your Vegan Nigerian recipes. I've been vegan for a few years now, and it's refreshing to see more diversity in the vegan community. I took a DNA test from 23andme a few years back, and they are constantly making improvements and updates. My most current results show that I'm partially Nigerian too! My results are 34.5% Nigerian, 22.7% Ghanian/Liberian/Sierra Leonian, 3.4% Senegambian/Guinean, 12.6% Congolese and Broadly East African, 0.1% African Hunter-Gatherer, 3.3 % Broadly Subsaharian African, 9.2% European, 1.5% East Asian and Native American, and 0.1% Broadly South Asian. My family is African American, so we have no idea where any of this is coming from lol. However, we're pretty sure that the European DNA comes from the slave trade. These DNA tests seem to align with historical events; they're telling our story.”

The Vegan Nigerian: “Thanks Keshanda :) Wow, that is quite a mix! And I couldn't agree more.. Above anything else, these tests allow us to paint somewhat of a picture of our pasts, and are a stepping stone to flesh out our stories.”

Comment exchange B:

Oluwadamilola Akinayo: “Thanks for sharing, Tomi. Frankly that 1.6% English scared the hell out of me. Got me wondering a lot of things though I haven't done any DNA test... 😂😂😂😂😂😂”

The Vegan Nigerian: “Oluwadamilola Akinayo listen! As soon as I saw that, I was shaken. Like “who? What? Where? How?” Lool. I doubt I'll ever get answers though. Thanks for watching. And if you ever do take the test, please come back and share 😊”

³¹² Makanjuola, Tomi. “MyHeritage DNA Results | ANCESTRY | Nigerian and...?? - The Vegan Nigerian.” 14 Apr. 2019, <https://www.youtube.com/watch?v=K4r7upR-99s>.

Oluwadamilola Akinayo: “@The Vegan Nigerian Most def,I plan to share mine when done. I'm curious to know if they deliver kits worldwide like to Africa or just certain countries. Didn't see anything on that via Google. I want to be sure before signing up,thanks.”

Appendix II: Example Sources of Human Narrative and of Popular Discourses on Genetic Ancestry Testing

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CURRICULUM VITAE

Eve Carlisle Polley

Institutional mailing addresses:

Department of Comparative Humanities
Bingham Humanities Bldg., Room 303F
University of Louisville
Louisville, KY 40292 United States

Department of Philosophy
Bingham Humanities Bldg., Room 313
University of Louisville
Louisville, KY 40292 United States

Institutional email:

eve.polley@louisville.edu

Personal email:

eve@evepolley.com

Education

Candidate, Doctor of Philosophy in Humanities, University of Louisville. Dissertation: “Unraveling DNA and Identity: A Humanistic Perspective on Epistemologies and Ethics of Genetic Ancestry Testing.” Dissertation Director: Dr. D. A. Masolo. Committee Members: Dr. David S. Owen and Dr. Oliver Rollins. Outside Reader: Dr. James Adera Ogude.

Master of Arts in Humanities with concentrations in Philosophy and Religious Studies, Summa cum Laude, University of Louisville, 2015. Directed Research Project: “Intertwining Conceptions of Person and Community in the Philosophy of Kwasi Wiredu.” Project Director: Dr. D. A. Masolo. Committee Members: Dr. Michael Brandon McCormack and Dr. David S. Owen.

Bachelor of Science in Natural Sciences with Great Distinction, Shimer College, Waukegan, Illinois, 2000. Thesis: “Three Essays on Quantum Mechanics and Mysticism.” Thesis Director: Dr. Ann Dolinko. Committee Member: Dr. James Donovan.

Academic Positions

Lecturer, Department of Philosophy, University of Louisville, January 2016-May 2017, January 2021-December 2021, and July 2022-present.

Lecturer, Department of Comparative Humanities, University of Louisville, August 2020-December 2021.

Graduate Teaching Assistant, Department of Comparative Humanities, University of Louisville, August 2018-June 2020.

University Fellow, University of Louisville, August 2016-July 2018.

Research Assistant, Department of Philosophy, University of Louisville, January 2015-May 2016.

Graduate Assistant, Commonwealth Center for Humanities and Society, University of Louisville, August 2001-July 2002.

Awards & Honors

Green Tapestries: Weaving Collaborations throughout Campus, Honorarium for participation in the 2022-2023 workshop and cohort, Sustainability Council's Education & Research Committee, University of Louisville, Fall 2022 (upcoming).

Doctoral Dissertation Completion Award, Graduate School, University of Louisville, Spring 2022.

Green Threads: Sewing Threads of Sustainability Across the Curriculum, Honorarium for participation in the 2021-2022 workshop and cohort, Sustainability Council's Education & Research Committee, University of Louisville, Fall 2021.

Faculty Favorite Nominee, Delphi Center for Teaching and Learning, University of Louisville, 2020-2021 academic year.

Mentored Undergraduate Research and Creative Activities Grant, Joint award with undergraduate mentee, College of Arts & Sciences, University of Louisville, Fall 2020. Mentee won first place in the Humanities category for research poster presentation at the University's Spring 2021 Undergraduate Arts & Research Showcase.

Graduate Network in Arts & Sciences Research Award, University of Louisville, Fall 2020.

Graduate School Council Travel Funding Awards, University of Louisville, Fall 2020.

Graduate Teaching Assistantship, Department of Comparative Humanities, University of Louisville, Fall 2018-Summer 2020.

University Fellowship, University of Louisville, Fall 2016-Summer 2018.

Graduate Student Award for Outstanding Student in the Humanities, University of Louisville, Spring 2015.

Graduate Assistantship, Commonwealth Center for the Humanities and Society, University of Louisville, Fall 2001-Spring 2002.

Honors Distinction for Thesis, Shimer College, Spring 2000.

Academic Scholarship, Shimer College, Fall 1998-Spring 2000.

Honors Program, University of Louisville, Fall 1997-Spring 1998.

Publication & Presentations

“Unraveling DNA and Identity: A Humanistic Perspective on Epistemologies and Ethics of Genetic Ancestry Testing (Synopsis of Dissertation Research Project).” 15th Annual Graduate Student Regional Research Conference, University of Louisville, March 24-25, 2022.

“African Philosophies Applied in Resistance to Colonial Maps of Social Identity.” 64th Annual Meeting of the African Studies Association, Virtual, November 16-20, 2021.

“DNA and the Boundaries of Identity: The Utilization and Transformation of Data and Metadata in Direct-to-Consumer Ancestry Testing.” Seventeenth International Conference on Technology, Knowledge, and Society, University of Melbourne – Parkville Campus, Australia, Virtual, April 8-9, 2021.

“Researching Identity across Disciplines: A Report on Progress and Challenges (Epistemological, Ethical, Personal).” Association of Humanities Academics, University of Louisville Chapter, Virtual, March 19, 2021.

“Concepts and Ethics of Identity: COVID-19, the Legacy of Race Science, and the Recognition of the Social Determinants of Health.” 63rd Annual Meeting of the African Studies Association, Virtual, November 19-21, 2020.

“Review of *Staging Trauma: Bodies in Shadow* by Miriam Haughton.” *The Harold Pinter Review: Essays on Contemporary Drama*, Penn State University Press, vol. 3, no. 1, 2019.

“Questioning Personalized Medicine: The (Mis)use of Racial Classification in Pharmacogenomics.” Discourse and Semiotics Workshop, University of Louisville, October 2018.

“Teaching African Philosophy in U.S. Institutions of Higher Learning: Theoretical and Practical Concerns of Choice in Curriculum and Pedagogy.” 59th Annual Meeting of the African Studies Association, Chicago, Illinois, November 2016.

"Foundational Belief." Steven Humphrey Student Philosophy Colloquium, University of Louisville, November 2001.

Teaching

Sex and Values (Philosophy 219) – 1 hybrid course, 2 distance education courses.

Undergraduate students. Catalog Description: “Critical studies of the treatment of sex in various moral philosophies, including a survey of classical viewpoints, but emphasizing contemporary writings.” Summer 2021, Summer 2022 (current), Spring 2023 (scheduled).

Critical Thinking (Philosophy 211) – 3 on-campus courses. Undergraduate students.

Catalog Description: “Introduction to and practice in methods of critical thinking, including argument identification, construction and revision; assessment of evidence; and critique of reasoning.” Fall 2021, Fall 2022 (scheduled), Spring 2023 (scheduled).

Introduction to Film (Humanities 212) – 10 on-campus courses, 3 hybrid courses, 1 distance education course. Undergraduate students. Catalog Description:

“Introduction to the fundamentals of film form and film content, including narrative, *mise-en-scène*, cinematography, editing, genre, acting, and sound, with emphasis on relationships between these elements and diverse cultural contexts.” Fall 2018, Spring 2019, Summer 2019, Fall 2019, Spring 2020, Fall 2020, Spring 2021, Fall 2022 (scheduled), Spring 2023 (scheduled).

Introduction to Philosophy (Philosophy 205) – 1 on-campus course, 2 distance education courses. Undergraduate students. Catalog Description: “Selected writings by important philosophers (e.g., Plato, Aristotle), illustrating their problems, methods, and conclusions.” Spring 2016, Summer 2016, Spring 2017, Fall 2022 (scheduled).

Cultures of America (Humanities 152) – 1 on-campus course. Undergraduate students.

Catalog Description: “Interdisciplinary study of the arts and humanities in contemporary American culture emphasizing the convergence of European, African, Hispanic, Asian, and indigenous cultures as well as the distinguishing characteristics of each culture as revealed in three of the following areas: fine arts, drama, literature, philosophy, religion, and popular entertainment.” Fall 2021.

Introduction to Comparative Humanities (Humanities 105) – 1 on-campus course.

Undergraduate students. Catalog Description: “This course is an introduction to Comparative Humanities offering an array of Humanities disciplines through global and diverse cultures.” Fall 2021.

Introduction to Philosophy through Literature and Film (Philosophy 206) – 1 hybrid course, 1 on-campus course. Undergraduate students. Catalog Description: “Study of central philosophical problems using literary and cinematic works, as well as traditional philosophical texts.” Spring 2021, Fall 2021.

Additional experience: Teaching assistant or supplemental instructor for the following courses: Introduction to Philosophy through Cultural Diversity (Philosophy/Pan-African Studies/Women’s, Gender and Sexuality Studies 207), Twentieth-Century Philosophy (Philosophy 307), Kwasi Wiredu (Philosophy 505/605), African-American Philosophy (Philosophy/Pan-African Studies 516/616), and African Philosophy (Philosophy/Pan-African Studies 557/657).

Service

Green Tapestries: Weaving Collaborations throughout Campus, 2022-2023 workshop and cohort, Sustainability Council's Education & Research Committee, University of Louisville, Fall 2022-Spring 2023 (upcoming).

Associated Faculty, Film Studies and Production, University of Louisville, Spring 2021-present.

Undergraduate Mentoring, Departments of Comparative Humanities and Philosophy, University of Louisville. Served as mentor to more than a dozen undergraduate students in both formal and informal capacities, Fall 2018-present.

Green Threads: Sewing Threads of Sustainability Across the Curriculum, 2021-2022 workshop and cohort, Sustainability Council's Education & Research Committee, University of Louisville, Fall 2021-Spring 2022.

Graduate Co-coordinator, Discourse and Semiotics Workshop Series, University of Louisville, Fall 2020-Summer 2021.

Research and Administrative Assistant to the Program Chairs of the 58th Annual Meeting of the African Studies Association, San Diego, California, November 2015. Program Chairs: Dr. D. A. Masolo, University of Louisville and Dr. Derek R. Peterson, University of Michigan. Program Theme: “The State and the Study of Africa.” Fall 2014-Fall 2015.

Additional Professional Experience in Education

Substitute Teacher, Jefferson County Public Schools, Kentucky, 2002-2004 and 2014-2016.

Distance Learning Coordinator, Louisville Science Center (now the Kentucky Science Center), Louisville, Kentucky, 2000-2001.

Learning Center Tutor, Shimer College, Waukegan, Illinois, 1998-2000. After-school educational and recreational program for Spanish-English bilingual elementary students.

Assistant to the Associate Curator of Education, School and Family Programs, Speed Art Museum, Louisville, Kentucky, 1997-1998.

Language Competencies

Spanish—Reading (newspaper-level without dictionary; advanced or academic with dictionary), and intermediate conversational

English—First language

Professional Affiliations

Member, Modern Languages Association, 2018-present.

Member, African Studies Association, 2015-present (participant in Women's Caucus).

Member, American Philosophical Association, 2000-2001, 2021-present.

This CV was updated on August 1, 2022.