

Decoding Colonial Science: DNA, Identity, and Indigenous Sovereignty



A factsheet based on the first two chapters of Kim TallBear's 2013 book

Native American DNA: Tribal Belonging and the False Promise of Genetic Science

Overview

Kim TallBear's scholarship:

- Critically interrogates the colonial legacy embedded in genetic research.
- Challenges the assumption that genetic markers can define Indigenous identity, particularly when used by settler (non-Indigenous) institutions and scientists in attempts to categorize Indigenous peoples.

TallBear Challenges the Reader to Think Critically

1. Why are scientists searching for Native American DNA?
2. Who benefits from DNA research?
3. Why do scientists claim the right to define Indigenous identity when Indigenous peoples already know who they are?



Why Does This Matter?

- Who is producing knowledge, matters. Science is political, with settlers often benefiting.
- Scientific research continues to harm Indigenous peoples and must be held accountable for perpetuating colonial practices and narratives.
- Indigenous perspectives must be centered in discussions about genetics, ancestry, and identity.

Recognizing Colonial Assumptions in Science



- ❌ Science claims to be objective and neutral but it is influenced by longstanding colonial ideologies.
- ❌ Science seeks to classify everything neatly, but human populations do not fit into clear categories.
- ❌ Scientists claim authority over knowledge production, presenting their work as being for the "good of knowledge." However, this framing prioritizes colonial narratives while discounting Indigenous perspectives.

How Did This Happen? – The History



"Scientists who trace human migrations do not tell a story from the standpoint of those peoples who were encountered; they tell a story from the standpoint of those who did the encountering—those who named and ordered many thousands of peoples into undifferentiated masses of "Native Americans," "Africans," "Asians," and "Indo-Europeans."
(TallBear, 2013, p.5)

Historical Exploitation of Indigenous Bodies in Science

- Early anthropology sought to document Indigenous peoples before they allegedly "vanished"—a violent colonial assumption embedded in land dispossession.
- Indigenous bodies have historically been dehumanized and treated as scientific specimens, often without consent—from grave robbing for skeletal analysis to modern DNA extraction.
- The study of Indigenous DNA is a continuation of the colonial legacy of treating Indigenous genetic material as a tool for answering scientific questions rather than respecting Indigenous sovereignty.
- Colonialism has always extracted from Indigenous peoples—whether land or DNA.

19th and 20th Century Race Science

- Early scientists measured skulls and other physical features to impose fixed categories onto humans and justify racial hierarchies.
- Race was framed as a biological concept used to justify European and American colonial expansion.



NOTE: Although scientists continue to search for biological markers of race, discrete categories do not exist and cannot define population groups.

The Evolution of Scientific Racism

- 1960s: New biochemical techniques were applied to anthropology.
- Scientists began mapping genetic markers across different populations.
- DNA testing was built on racial classifications inherited from 19th-century racial science.

Colonial Legacies in Genetic Research

- Modern genetic science claims to have moved beyond 19th-century race categories, yet it often reproduces the same racial categories under different terminology (e.g., “populations” and “biogeographical ancestry”).
- The colonial fixation on racial purity persists through mythological “founder populations” and the search for ancient peoples, reinforcing the illusion of a past moment of genetic purity that never existed.
- The push to collect and measure Indigenous genetic data also stems from the flawed logic of purity, treating Indigenous DNA as a relic of the past rather than recognizing Indigenous peoples as living, self-determining nations.
- The idea of purity is contradictory as change and evolution have always shaped human populations.
- Genetic markers are shaped by migration, intermarriage, social relations, and lived realities—factors that science often overlooks or simplifies.
- Racial categories would not exist without settlers constructing an “other.” By grouping Indigenous peoples into a single “pan-racial” category, this erases the diversity of nations and languages.



What is DNA? It is the molecule that carries genetic information in living organisms and is inherited from both parents. 98% of our DNA is noncoding, meaning it does not encode genes or directly influence specific traits.

So – Who Benefits?

Commercialization of DNA and the Rise of Ancestry Tests

- Direct-to-consumer DNA tests (e.g., 23andMe, AncestryDNA) market genetic identity as something that can be purchased.
- DNA databases are built on Indigenous genetic samples and testing companies profit and benefit from Indigenous genetic material.
- Genetic material from Indigenous peoples is being patented and commercialized by research institutions.
- Companies own the DNA samples they collect, and Indigenous peoples often have no control over how their genetic information is used.

Settler Uses of DNA Tests

- Companies market and profit from DNA tests as a way for settlers to “rediscover” their Indigenous roots.
- Settlers misuse DNA tests to claim Indigenous identity for personal, financial, and educational benefits (e.g., university applications, tribal enrolment).

Turning the Gaze on Science

What is Native American DNA?

- The concept of "Native American DNA" is shaped by who controls the research and produces knowledge.
- TallBear argues that Native American DNA is not a neutral scientific object, but is inherently a socially and politically constructed category shaped by the colonial and racist history of science and ongoing colonialism.



Ethnographic Refusal

- By highlighting the history of race science, TallBear refuses to reproduce colonial research and its definition of Native American DNA. Instead, she turns the gaze on scientists and their colonial motives.
- Her approach is influenced by Audra Simpson's concept of "ethnographic refusal," which asserts that Indigenous scholars are not obligated to explain themselves or share knowledge with settlers.
- Indigenous peoples should not be expected to justify their identity to settler institutions.

NOTE: Indigenous nations may choose to use DNA tests differently than commercial companies for instance, to confirm parentage, not identity.

Indigenous Sovereignty and DNA Politics

- Indigenous peoples continue to oppose the misuse of their genetic material.
- DNA testing does not reflect the lived experience of being Indigenous or the political structures that define tribal membership.
- Indigenous sovereignty over resources and land rights are threatened when genetic tests and racial categories are prioritized over traditional forms of belonging.

Indigenous Identity

- TallBear argues for Indigenous self-determination in defining identity and tribal citizenship.
- Indigenous peoples have always known who they are—they do not need genetic validation.
- DNA sequences cannot reveal the truth about identity.
- Creation stories, kinship networks, community recognition, and land-based histories are the foundation of Indigenous identity and belonging.
- "It's not just a matter of what you claim, but it's a matter of who claims you." (CBC Radio, 2016)

Key Takeaways

- Know the history:** race science has deep colonial roots that shape contemporary genetic research.
- Understand how racism in science persists:** race categories have not been abandoned but rebranded.
- Recognize that racism in science isn't always obvious:** it operates through policies and research agendas.
- Center Indigenous self-determination and knowledge:** Indigenous communities define their own identities, governance, and belonging – DNA tests cannot replace this authority. Indigenous peoples know where they come from.

References

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