

Judaism, Genetics and Racialisation

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ABSTRACT

After discussing genetic studies on Judaism in diverse ethnic and cultural groups, this paper examines the use of DNA testing to confirm Jewishness. Finally, I discuss the implications of these genetic findings for the racialisation of Jews. I conclude that the concept of race cannot be applied to Jews but Jewishness has a significant genetic component.

INTRODUCTION

Genetics and the Reinvention of Race

Using genetic data to understand history is far from new. Early scholars attempted to use blood groups while today sophisticated technical abilities allow for much more accurate analysis. The Human Genome Project in 2003 created the possibility of examining human ancestry by genetics. Nicholas Wade (2014) in his *A Troublesome Inheritance: genes, race and human history* - argues that genetic differences in human populations can manifest into unpredictable differences between the two groups and indeed there is a biological basis for race. This book has received significant criticism in terms of its incarnation of race science.

While scientific research, much focusing on human genome mapping, has consistently demonstrated that the concept of race lacks scientific rigour, reproducibility, is not scientifically valid and we cannot divide humans up into discrete groups based upon visible features. Popular classifications of race are largely based on skin color alongside features like height, eyes, and hair.

There is no evidence that separate races of humans can be found naturally and the idea of race is a sociocultural construct based largely upon skin colour. As a species we share 99.9% of our genetic constitution and thus the evidence suggests we are more similar to each other than different. As Chou (2017) states, there is much ambiguity between postulated races and much variation within them. In fact two people both of European descent may be more similar genetically to an Asian person than

they are to each other. The division between the races is blurred. Today the term ancestry is used rather than race. The few existing differences reflect diverse environments and external factors, rather than underlying biological factors.

Rosenberg et al (2002) employed cluster analysis to examine human population structure. The authors focused upon genotypes at 377 autosomal microsatellite loci among 1056 individuals deriving from 52 different populations. The results indicated that the main source of human genetic variation was between individuals rather than between ethnic groups. No absolute differences between ethnic groups could be found, the only differences were in relation to relative frequency. Social scientists generally argue for race as a social construct lacking biological basis and potentially has harmful social effects. Complete genomes from diverse geographical locations demonstrate that even between Africa and Europe, for example, there is no single absolute genetic difference; no single variant exists where all Africans possess one variant and all Europeans another one, even when disregarding recent migration.

Harvard geneticist David Reich (2018) has asserted that although genetics doesn't support the idea of specific races, he acknowledges the concern that genetic findings could be used to justify the notion of race. But he emphasises that biological differences do exist between different populations.

Judaism and Genetics

This paper focuses upon Jewish genetic research and is in line with anthropological scholarship

which sees genetics as a cultural, social and political practice. Mc Gonigle and Herman (2015) note how genetics has been deployed in three related realms relating to Jewish identity:

‘There are three key ways in which Jewishness has moved to the molecular realm, with genes being defined as Jewish: population genetics; genetic testing for both disease and Jewish identity; and human ova and sperm donation, as in the field of assisted conception. In these different conceptual arenas, Jewish genes and inheritance are defined in different ways, opening up a wider space of ambiguity around Jewish identity and definition

Here I largely focus upon population genetics and identity. Population genetics involves exploring Jewish history through analysis of DNA; Jewish history is traced through genetics in an attempt to find a common historical origin of Jews in Biblical Palestine. It focuses upon the statistical probabilities that DNA haplotypes - groups of alleles in an organism that are inherited together from a single parent - will be more frequent within specific identified groups. While of great interest and of significant practical application, DNA testing can be deployed to assess the likelihood of developing certain diseases through measurement of DNA mutations but this topic will not receive further consideration here. Finally genetic testing has been utilized in assisted conception. Again this will not be further discussed.

Jews emerged as a distinct cultural/ religious group living in the Middle East around 4000 years ago. Since that time they have maintained continuous traditions both in this area and also in the various diasporic communities in which Jews reside. Additionally others have converted in the Jewish fold. As Falk (2014) rightly questions ‘Are the Jews a religious community, a socio-cultural entity, an ethnic-biological classification, or what?’ While Jews have traditionally been referred to as a ‘people’ do genetic commonalities between diverse Jewish communities exist? Given the complexity of Jewish migration histories, is it possible to trace them to common ancestry in the Middle East, or rather, are they more genetically related to their non-Jewish neighbours. What is the significance of genetic findings for the racialisation of the Jews?

Early research on Jewish descent using blood groupings and serum markers indicates that most Jewish diaspora groups derive from the Middle East. This research found that paired

Jewish populations demonstrated greater genetic similarity than paired Jewish and non-Jewish populations (Kobyliansky et al 1982).

The term haplotype denotes a set of DNA variations, or polymorphisms, that tend to be inherited together. Two Y lineages have been found among Jews- ‘e J haplotype’ and ‘YAP+4’. Jews worldwide demonstrate a significant degree of genetic affinity with Arab populations like Syrians and Palestinians, while some groups considered as Jewish by other Jews including the Jews of Cochin in Kerala, the Bene Israel of Mumbai and Ethiopian Jews do not appear to possess these specific genes. In a study of Y chromosome biallelic haplotypes, Hamer et al (2000) found that over 70% of Jewish men and half of the Arab men whose DNA was examined had inherited their Y chromosomes from the same paternal ancestors who had inhabited this geographical region for at least several thousand years. He postulates that Jews and Arabs share a common ancestor. The study concluded: ‘the paternal gene pools of Jewish communities from Europe, North Africa, and the Middle East descended from a common Middle Eastern ancestral population’ (Hammer et al 2000: 6769). This study argues that contemporary Jewish communities are descended from Ancient Hebrews.

As Julia Egorova (2014) notes, the idea that Jewish communities worldwide are not only culturally similar but also genealogically connected, remains prominent within both the Jewish and non-Jewish public minds. Contemporary Jewry comprises an aggregate of ethno religious communities who hold religious, historical and cultural traditions in common. There is historical evidence suggesting shared origins in the Middle East, followed by subsequent migrations resulting in Jewish communities in Europe, Africa and Asia- the Jewish Diaspora.

Behar et al (2010), deploying high-density bead arrays to genotype individuals, found that most Diasporic Jewish communities originated in the Levant thus lending support to the historical evidence. According to these authors: ‘The most parsimonious explanation for these observations is a common genetic origin, which is consistent with an historical formulation of the Jewish people as descending from ancient Hebrew and Israelite residents of the Levant.’

The idea that there are Jewish signals for Jewishness genetically is described in geneticist David Goldstein’s 2008 book *Jacobs Legacy*; A

Genetic view of Jewish history. This discusses small genetic variants in the DNA. He discusses the transmission of Jewishness of Jewish males manifested through the y - chromosomes and the DNA mitochondrial inherited from their mothers. He further asserts that steady rates of mutation allow us to assess how long human population had been separated and he can trace maternal and paternal contributions separately.

In his book he argues the tradition of the priestly heritage of the Cohens passes from father to son over thousands of years, has a basis in the modern Cohens. This idea is compatible with the oral tradition asserting that Cohanim are direct descendants of Old Testament priests and ultimately go back as far as Aaron, Moses' brother (see Thomas et al 1998). This Cohen Modal Haplotype has received the most attention among genetic researchers interested in Judaism.

Ostrer (2012) in *Legacy: A Genetic History of the Jewish People* similarly argues for a biological basis for Judaism. The book's cover states: 'Ostrer shows that Jews from different Diaspora groups are linked by the genetic threads that provide a biological basis for Jewishness.' He refutes the Khazar theory of Ashkenazi ancestry which argues that the Ashkenazi Jews descended from the Khazars, a multi-ethnic seminomadic group of Turkish peoples, who lived central Asia from the 7th to the 10th centuries A.D. For this author the findings of genetic studies support a significant, but variable component of shared Near East ancestry, alongside varying degrees of admixture and introgressive hybridization from the corresponding host diasporic populations. The term introgressive hybridization refers to gene movement from one species into another's gene pool. Genetic studies which focus upon Ashkenazim— both pertaining to their paternal and maternal lineages—indicate that they are of both Middle Eastern and European descent. In agreement Behar et al (2013) state:

'We confirm the notion that the Ashkenazi, North African, and Sephardi Jews share substantial genetic ancestry and that they derive it from Middle Eastern and European populations, with no indication of a detectable Khazar contribution to their genetic origins.'

Jon Entine (2007) in *Abraham's Children: Race, Identity, and the DNA of the Chosen People* states:

'Taken together, the Jewish male and female lineages offer a fascinating, if controversial,

narrative of the ancestry of Ashkenazi Jewry, even though it is based on only two loci, the male and female genetic marker – very tiny, if revealing, slices of the human genome. The studies of the Y chromosome and mtDNA do not support the once-popular notion that Jews are descended in any great numbers from the Khazars or some Slavic group, although it's evident that some Jews do have Khazarian blood. The Khazarian theory has been put to rest or at least into perspective'

Other recent authors however question these findings. For example Elhaik (2012) asserts:

'Ashkenazi Jews' roots lie in the Caucasus — a region at the border of Europe and Asia that lies between the Black and Caspian seas — not in the Middle East. They are descendants, he argues, of the Khazars, a Turkic people who lived in one of the largest medieval states in Eurasia and then migrated to Eastern Europe in the 12th and 13th centuries'.

Furthermore this author states that despite decades of genetic research these 'genetic threads' are not confirmed through the examination of any genetic nucleotides, haplotypes, or genetic regions and to date these ideas remain contentious among geneticists, historians and other social scientists.

Likewise Costa et al (2013) examined mitochondrial genome sequences Jews and non-Jews from the Near East, Europe, and the Caucasus. Mitochondrial DNA is transmitted through the maternal line. The study suggested that, in contrast to the existing evidence for many Ashkenazi males, where the Y chromosomal DNA indicates a likely origin in the Near East, the female lineage of Ashkenazi Jews appear to have substantial ancestry in prehistoric Europe rather than the Levant or Caucasus.

Similarly, Begley (2012) asserts that for North African Jews, autosomal genetic analysis in 2012 revealed that North African Jews are genetically close to European Jews. This finding indicates that North African Jews originate from biblical-era Israel rather than descending from natives who converted to Judaism.

African Jews

The Bantu speaking Lemba of South Africa have made longstanding claims to have Jewish origins. This tribe consists of 70,000 - 80,000 members in central Zimbabwe and northern South Africa and possesses Jewish customs. For instance they do not eat pork, forbid certain

combinations of permitted foods, cover their heads with skull caps, conduct ritual animal slaughter, celebrate holy day once a week and place a star of David on their gravestones. According to oral tradition they are descended from seven Jewish men leaving Israel 2000 years ago. They prefer endogamy, preferring their children to marry other members and discourage marriage to a non-member. Their sacred prayer language comprises a mixture of Hebrew and Arabic. They have a religious artefact which is a replica of the biblical Ark of the Covenant called "ngomalungundu"- the drum that thunders, asserting that this ark was built 700 years ago from the remnants of the original ark. DNA testing indeed suggests a genetic element found amongst other Jewish priest line known as Cohenim, however, the tribe are now predominantly Christian or Muslim.

Parfitt used a relatively new genetic technique genetic to identify markers on Y-chromosome of Lemba males. These were compared to other groups with whom the member might have shared a common ancestor long ago. This study suggests some members of the Suba clan appear to have an ancestral connection to Jewish populations.

The Igbo Jews are one of Nigeria's largest ethnic groups. A sub group claims descent from the lost tribes of Israel and are therefore Jewish. However, recent DNA testing found no connection with Jews. The results demonstrate that there is no possible ancestral link between Igbo and the Jews.

DNA testing for assessing Jewishness

Proving Jewishness can present extreme difficulties for new immigrants to Israel whose Jewishness may be doubted by orthodox rabbinic authorities (Kahn 2000: 73). While many people see themselves as Jewish it can be very difficult to obtain official recognition from the Israeli Rabbinate. In the past three decades the burden of proof has become increasingly stringent and bureaucratic to such an extent that some who fail to provide the requisite documentation must undergo a full conversion process. In recent years genetic testing has become a tool utilised by rabbis and rabbinical courts to establish an individual's Jewish status- a form of genetic citizenship (Mc Gonigle and Herman 2015). Many Jews from the former Soviet Union are required to undergo DNA testing to confirm- their Jewish heritage.

February 2019 - the Israeli Newspaper Haaretz ran an article reporting how the chief rabbi of Israel was requesting DNA test to confirm Jewishness in order to issue marriage licences. In a similar way Russian speaking Israelis started to move to Israel from countries from the former Soviet Union in the 1990s. They have also been asked to take DNA test to certify their Jewishness. To many, these facts would be seen as disconcerting given the ideas of Jewish race with deeply implicated in the holocaust.

Ideas of genetic identity have been strongly contested by the Israeli NGO group -Shavai Israel- who provide education and support for isolated Jewish communities and who stress that Jewishness cannot be reduced to biology and that the Jewish people are about more than just genetics. The chairman of this group- Michael Freund- asserts that while genetics cannot be used as a marker for Jewish identity, on the other hand, genetic studies scientifically validate the Jewish historical narrative.

Relatedly the past ten years have witnessed a rise in home DNA tests to examine genetic identity and ethnic image; this is a part of their use in diagnosing genetic disorders. Now there are even tests which can determine whether you have Jewish markers for instance the Jewish marker test claims to be accurate given results three weeks after receiving the sample and cost £99. The sample is analysed against 16 standard STR markers. The DNA testing for Jewishness does not test for a generalised Jewish ancestry but rather a specific variant on the mitochondrial DNA passed down through the mother but is found exclusively in Ashkenazi Jews.

If someone carries this specific mitochondrial DNA marker there is a 99% chance the person is on Ashkenazi ancestry. There is evidence that most of the genetic testing for ancestry demonstrates results which correspond to geographical areas Chinese, British and West African. Judaism however is a religious or cultural identity. After the Ashkenazi Jews arrived in Eastern Europe around a millennium ago these communities remained segregated by force and customs, only mixing occasionally with local populations. This isolation narrowed the gene core which gives rise to a set of identifiable variations which sets them apart from other European populations at the microscopic level.

These genetic findings reshape not only how we understand ourselves but also how we understand others. Genetic data provides a new

form of Jewish self-understanding and identity. Genetic markers suggesting a genetic link to the Jewish people are now one of a number of markers of Jewish identity. But as Egorova (2009) argues genetic identity has not superseded other forms of what it means to be a Jew, especially Halachic definitions. Genotypes cannot prove Jewish status and no haplotype is necessary or even sufficient for confirming Jewish identity.

This genetic identity is based upon pre-existent ideas of race, race science and genealogy in Judaism. It is problematic according to this author to integrate genealogical notions of Judaism with those based upon cultural and religious affiliation. Jewish status is conferred either through having a Jewish mother or from 'conversion' into Judaism.

Genetics and the racialisation of Jews

Without doubt findings from genetics and biotechnology have made a deep impact upon culture and society. The term geneticisation was introduced by sociologist Abby Lippman (Lippman 1991). She saw it as a process by which inter-individual differences are defined by their DNA and reinforces ideas of distinguishing social groups by their biological traits. For her geneticisation redefines what are seen as significant differences between people, leading to the development of hierarchies among people based on differences in their DNA. Paul Rabinow argues how 'the new genetics will prove to be an infinitely greater force for reshaping society and life than was the revolution in physics, because it will be embedded throughout the social fabric at the micro level by medical practices and a variety of other discourses' (1992: 241). For him genetics results in the emergence of new and more diverse group identities, but he does not deny that these findings can reinforce traditional notions of identity such as race and gender. As Troy Duster (2005) argues new genetic studies can contribute to the 'rebiologisation of race' (Duster 2005). Genetic research has rekindled unresolved issues pertaining to the nature of human difference.

What are the implications of these findings for the now discredited notion of race in physical anthropology? Falk (2014) argues vehemently there is no evidence supporting the existence of a Jewish genotype. This author argues that although a discrimination of Jews has been widespread over the past two thousand years, the idea that Jewish identity is biological

became prominent over the last decades of the nineteenth century. The term anti-Semitism originated in the 1870s by the German publicist Wiemar (1819 - 1904) who saw Jewish social cultural traits as a consequence of their biological essence. To this extent Jew-hatred became racism of semitic race and allowed for biological justification to socio-cultural discrimination. The argument that biological differences between people underlie their social difference became marked in the 20th century reaching its climax in the catastrophic manifestations of the Nazi regime. In the mid-19th century genetics used probabilistic populations and adopted ideas deriving from DNA structure. For Falk, despite considerable consanguinity, it is not possible to identify a Jewish genotype.

Given the Nazi attempt to exterminate the Jews based upon their perceived racial distinctiveness, any assertion of the genetic basis of Judaism is extremely concerning. However while the race concept has biological and social meaning that are difficult to disentangle, I would argue that we cannot simply dismiss scientific findings based upon their possible social implications. We cannot ignore the fact that Jews share a common genetic thread but this is not enough to describe Jews as a race. The studies cited above certainly reinforce the argument that Jews share a common physicality.

These genetic findings among Jews have already taken up by far right political groups to fuel their anti-Semitic agendas. As one example the White supremacist group alt-right promotes nationalist and anti-Semitic ideologies and calls for the establishment of a white ethno-state. Members of this group promote the use of ancestry testing to 'prove' their pure white heritage and rule out undesired descent from African and Ashkenazi Jewish groups.

Finally can we argue that genetic findings support Jewish tradition? While DNA findings can be deployed to inform historical research, as Egorova (2010) argues, geneticists and historians have been keen to separate their disciplines from each other. Geneticists emphasise the need to keep some distance from historical evidence to maintain 'objectivity', while historians have questioned the validity of genetic findings in their discipline. Despite the fact that geneticists and historians appear to be familiar with each other's research and agree to engage with it to some extent, they still remain keen on separating their respective disciplines.

While scientific discourse has often been deployed to challenge and discredit biblical

tradition some have argued that recent genetic research on Judaism actually reinforces it. One prominent example is Rabbi Yaakov Kleinman (2004) who argues that genetic testing on the Kohanim and on the genetics of diverse Jewish communities support Jewish history. Science supports the reliability of biblical tradition which before genetic testing was largely based upon faith and a belief in the Bible as God's revealed wisdom. For him the Cohen Modal Haplotype 'proves' biblical tradition of an unbroken family line going back to Aaron and DNA findings confirm that Abraham lived, the twelve tribes really existed. While we cannot draw such conclusions from the existing genetic data, the genetics of Judaism does illustrate the physical basis of Judaism. In his view the next focus should be on how Halacha can be integrated with these genetic findings. Genetic findings appear to lend support to the extensive oral and literal traditions and demonstrate continuity of lineage over three thousand years and across geographical boundaries despite the repeated occurrence of multiple adversities over time.

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