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RESEARCH ARTICLE

Negotiating Jewishness through genetic testing in the State of Israel

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Abstract • In Israel, several hundred thousand citizens form a minority group that wishes to be acknowledged as Jewish by the state authorities. Most of them immigrated from the former Soviet Union and cannot provide sufficient evidence of their maternal ancestors' affiliation with a Jewish community. This has a direct impact on their civil rights. Based on a scientific research article on matrilineal genetic markers among Eastern and Central European Jews, the rabbinical dean of an institute for advanced Jewish studies in Jerusalem proposed to accept, under certain conditions, the presence of specific genetic markers as legal proof of "Jewishness." Genetic testing here is meant to become a tool for empowerment and (re)claiming Jewish status. This case raises many questions concerning a biological understanding of Judaism and shows how genetic ancestry testing could be used to uphold the religious orthodox narrative.

Die Diskussion um Gentests als Nachweis jüdischer Identität in Israel

Zusammenfassung • In Israel gehören mehrere hunderttausend Bürger einer Minderheit an, die von den staatlichen Behörden als jüdisch anerkannt werden möchte. Die meisten von ihnen stammen aus der ehemaligen Sowjetunion und können keine ausreichenden Beweise für die Zugehörigkeit ihrer Vorfahren mütterlicherseits zu einer jüdischen Gemeinde vorlegen. Das hat direkte Auswirkungen auf ihre Bürgerrechte. Auf der Grundlage eines wissenschaftlichen Forschungsartikels über matrilineare genetische Marker bei ost- und mitteleuropäischen Juden schlug der rabbinische Dekan eines Instituts für jüdische Studien in Jerusalem vor, unter bestimmten Bedingungen das Vorhandensein spezifischer genetischer Marker als rechtlichen Beweis für „Jüdischsein“ zu akzeptieren. Gentests sollen hier als Instrument für Empowerment und die (Wieder-)Erlangung des jüdischen Status dienen. Dieser Fall wirft viele Fragen bezüglich eines biologischen Verständnisses von Judentum auf und zeigt, wie genetische Abstammungstests eingesetzt werden könnten, um das religiös-orthodoxe Narrativ aufrechtzuerhalten.

Keywords • *genetic ancestry testing, Jewishness, essentialism, citizenship*

Introduction

Next generation sequencing (NGS) technologies, which significantly lowered the cost and time requirement for DNA sequencing, facilitated research in the field of population genetics as it made possible the identification of genetic markers over entire genomes, and enabled comparisons on a much larger scale between more population groups and with bigger sample sizes. Genetic anthropology is one of the many subfields of human population stratification and concentrates on genetic studies of ethnic groups to shed light on their migrations and genealogical history. At least since the beginning of the Zionist movement, and especially since the establishment of the State of Israel, studies on the genetic proximity among Jews assumed that Jews shared a common biological identity (Efron 1994; Kirsh 2003; Lipphardt 2008, 2012; Egorova 2014; Falk 2015). NGS impacted the growing body of research papers also in the field of "Jewish genetics", which -among others - includes two genome-wide-association studies on the interrelatedness of the world Jewry (Atzmon et al. 2010; Behar et al. 2010) that have received a lot of media and academic attention. Historians and anthropologists, as well as geneticists, have pointed out the pitfalls of such studies, as they are informed by pre-existing notions and narratives about group identity, (national) history, and origins, and assign genetic markers to supposedly clear-cut ethnic population groups so that "Jewishness" is embedded in the biological rather than in the cultural or social realm (Glenn 2002; Gibel-Azoulay 2003; Abu El-Haj 2012; Egorova 2014; Falk 2015; Elhaik 2016).

One related question keeps reappearing in academic and in popular discourse, and that is whether genetic testing can constitute a concrete tool for validating the "Jewishness" of individuals. This question is mainly discussed with regard to ethnic groups that have an oral tradition of being of Jewish descent, the so-called "Judaizing communities" (Devir 2020, p. 73) like the Lemba from South Africa or the Bene Ephraim from

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India (Brodwin 2002; Gibel-Azoulay 2003; Parfit and Egorova 2006; Prainsack and Hashiloni-Dolev 2009; Egorova 2014; Devir 2020). However, under discussion here is a question that is thematically related but concerns specifically a group of Israeli citizens who immigrated on the basis of the Law of Return (see below) mainly from the former Soviet Union. The question is whether members of this group could use genetic tests to prove maternal Jewish ancestry by carrying a certain genetic marker.

The scientific DNA study at the center of the debate, which received media coverage around the world, used complete sequences of mitochondrial DNA (which is inherited maternally and can be used to track maternal ancestry) to compare samples

Israel prove this by providing evidence like certificates or testimonies, which demonstrate their – or their mother’s, or close maternal relatives’ – membership in the Jewish community. In order to become a safe haven also for those who suffered anti-semitism although they are not considered Jewish according to orthodox religious law, for example, those with only a Jewish father or grandfather, Israel implemented the (secular) Israeli Law of Return with an amendment in 1970. It extends the right to Israeli citizenship likewise to non-Jewish descendants of Jews. With the help of the Jewish Agency, in the years between 1989 and 2001, almost one million people from the former Soviet Union (FSU) immigrated to Israel, including approximately three hundred thousand who were not considered Jewish by the

Can genetic tests prove maternal Jewish ancestry through a certain genetic marker?

of hundreds of Ashkenazi (Central and Eastern European) Jews to those from non-Ashkenazi Jews and to non-Jews, in order to identify and evaluate common ancestry markers (Behar et al 2006). This genetic study was referenced almost eight years after its publication in a quest for helping immigrants to prove their “Jewishness”. This is a special case of “Jewish genetics” because it concentrates on maternal ancestry, which is also traditionally seen as the main determining factor of Jewishness. Therefore, there is room to argue that in this case, genetics do not outweigh other, cultural, or religious considerations. On the contrary, as will be shown further down, an attempt is made at integrating genetic evidence with evidence from the cultural realm. But all this is due to the particular political situation in Israel, which makes individuals with maternal Jewish ancestry eligible to citizenship and civil status changes (i. e., marriage, burial, see below), and thus links ancestry with privilege.

Background: Immigrants and Israeli Law

It is important to note that there is no strict separation between religion and state in Israel. Certain areas of life, like marriages, burials, or conversions fall under the authority of the religious courts of one of the religious groups recognized by the state, like the Bahai, various Christian denominations, Druze, Jews, or Muslims (Edelman 1994, p. 51). Civil marriage does not exist, and therefore also no possibility for interfaith marriages. Jews fall under the jurisdiction of Israel’s (orthodox) Chief Rabbinate, an official state body. Against this background, it makes a practical difference for immigrants to Israel and their descendants whether they are officially registered as Jews or not. In case of immigration, the Chief Rabbinate decides whether a person is registered as Jewish based on the traditional, orthodox rule that the person’s mother must be (considered) Jewish. Immigrants to

Israeli Chief Rabbinate, either because they have Jewish ancestry on the paternal side, or they were unable to convincingly prove maternal Jewish descent (Lustick 1999; Yakobson 2010; Kravel-Tovi 2012 and 2017; Amit 2018). These immigrants are in large parts socially assimilated citizens with Jewish family background. It has been shown that “considerable segments of FSU non-Jewish olim [new immigrants] subvert the halakhic [Jewish religious law] definition of their identity. Many of those whom the state defines as non-Jews do in fact define themselves as Jewish – in terms of origin and identity. This self-definition is premised to a large extent on the logic of Soviet bureaucracy.” (Kravel-Tovi 2017, p. 59). In fact, a recent in-depth study on “First and 1.5 Generation FSU [...] Immigrants in Israel” linked the significantly higher rate of emigration among the younger age group (25–40 years old) of FSU immigrants (compared to Israeli born emigrants) to feelings of frustration and estrangement caused by the demand of the religious authorities to prove their “Jewishness” – especially when they want to register for marriage (Amit 2018).

DNA testing for establishing descent

In March 2019, several Israeli newspapers reported that the Chief Rabbinate admitted demanding DNA testing from immigrants from the former Soviet Union “in some cases” in order to establish Jewish ancestry (Maltz 2019; Sharon 2019; Azoulay 2019). According to the Chief Rabbinate, applicants were asked to undergo testing to prove they are biological descendants of a person who was already officially accepted as being Jewish. The use of DNA tests drew criticism from politicians as well as from opinion leaders, although it was not based on the idea that “Jewishness” could be proven biologically, but that descent can be established. Some years earlier, in 2013, Israeli newspapers

had reported on a somewhat similar case where a young woman was refused participation on a “birthright”¹ trip to Israel unless proving by DNA test to be the biological daughter of her father (Eli 2013; Times of Israel Staff 2013). Still, this kind of DNA test was judged by anthropologist McGonigle to “suggest a policy decision to enshrine Jewishness at the level of DNA, render ‘Jewish genes’ legally legible by the State, and make DNA signatures a basis for basic rights and citizenship” and as raising “concern over a reinscription of ethnic essentialisms, entailing a ‘biopolitical’ project that could foster a new regime of ‘biopower’” (McGonigle 2015, pp.90, 99).

Genetic Ancestry Markers and “Jewishness”

A new aspect of DNA use was added in 2014, when Rabbi Yo-sef Carmel from the Eretz Hemdah Institute for Advanced Jewish Studies in Jerusalem, which trains religious judges and teachers, came up with an idea to help those individuals who have a family history of being Jewish, but cannot provide sufficient evidence for their claim to the religious authorities (Carmel 2014). He published a responsum, i. e. a reply made by rabbinic scholars in answer to submitted questions about Jewish law, to the question of whether the “Jewishness” of a person could be established based on a DNA ancestry test result, which shows that the applicant carries a certain genetic marker prevalent among Jews (for an abbreviated English language summary of the responsum see Carmel 2016). Here, the circumstances are different from the cases described above: it is not the Chief Rabbinate casting doubt on the biological descent of an applicant from a specific person who is already accepted as Jewish and thus

The result and significance of genetic ancestry testing are, also in the theological sense, different from forensic DNA identification: genetic ancestry testing does not ultimately determine anything, it offers merely a statistical value of probability for ancestry. Concerning the specific case of self-identified Jews from the Eastern Bloc, Carmel relies on the findings from the above-mentioned peer-reviewed scientific research article by Doron Behar and co-authors that was published in a renowned journal in the field of human genetics (Behar et al. 2006). This study, which was made possible through NGS techniques, compared ancestry specific markers in mtDNA samples from 583 Ashkenazi Jews, 1,111 non-Ashkenazi (of North African, Caucasian, Near Eastern, and Spanish-exile ancestry) Jews, and 11,665 samples of non-Jews from across the world (Behar et al. 2006, p.494 and Table 5).

The study found that 40% of the Ashkenazi Jews can be traced back to four female founding lineages (mitochondrial haplogroups). The result stands for the world-wide Ashkenazi Jewry and is presented in a way that is appealing to the public, who associates the four female lines with the biblical matriarchs: “we show that close to one-half of Ashkenazi Jews, estimated at 8,000,000 people, can be traced back to only 4 women carrying distinct mtDNAs that are virtually absent in other populations” (Behar et al. 2006, p.487). This association with the biblical matriarchs was picked up by media outlets from around the world: the German magazine *Der Spiegel* headlined for example “Vier Urmütter haben 3,5 Millionen Nachkommen” (Four matriarchs have 3.5 million descendants) (*Der Spiegel* 2006).

In his ruling, Carmel argues thus: As these four Ashkenazi mitochondrial haplotypes were not found among non-Jewish Europeans, and as the sample sizes are so big thanks to the latest sequencing technologies, it is statistically highly likely that a per-

Genetic ancestry testing does not ultimately determine anything, it offers merely a statistical value of probability for ancestry.

forces this individual to identify by DNA test. It is rather meant to empower an applicant who does not have a relative to refer to or enough other documentary evidence – like letters or register entries – to prove maternal Jewish ancestry. In his answer, Carmel explicitly distinguishes between DNA evidence that is used to identify a person, as in forensics or paternity tests – and which qualifies for the theological concept of “unambiguous marker” on the one hand, and genetic ancestry testing on the other (Carmel 2014, p.96; Devir 2020, p.75).

son who carries one of these markers, has maternal Jewish ancestry. The presence of a genetic marker will not conclusively identify a person as Jewish, nor will its absence label an individual as non-Jewish. But, Carmel argues, if someone struggles to provide sufficient supporting documents or testimonies for her or his maternal Jewish ancestry, then the specific genetic signature should be considered as one additional piece of evidence so that taken together, there might be reason enough to declare this person Jewish. He even calls upon Israel’s Chief Rabbinate to accept genetic markers as one piece of evidence among others for consideration (Carmel 2014, pp.98).

Carmel’s suggestion was not adopted by the Chief Rabbinate. This means that individuals cannot claim a right that genetic ancestry tests should be counted as evidence by the authorities. But on the other hand, the responsum was also not denounced

1 “Birthright Israel” is an educational tourism organization that offers a free educational trip to Israel for young adults from all over the world, who have at least one Jewish birth parent or have converted to Judaism. The goal is to strengthen Jewish identity, Jewish communities, and connection with Israel. It is funded by various sources, including the State of Israel, several Jewish foundations, and private donors.

by the Chief Rabbinate – although it could have argued for example that one year earlier, a different DNA study on maternal Ashkenazi ancestry (Costa et al. 2013) casts doubt on the interpretation of the four haplogroups given by Behar and co-authors. It could also have argued theologically that an ancestry marker does not show whether the individuals of the maternal line indeed stayed within the Jewish faith. In a personal communication (phone conversation on January 17, 2021), Carmel explained the silence by the Chief Rabbinate at least in part with a general and understandable uneasiness to associate genetics with Judaism.

Can we continue to speak about DNA as seemingly “hard evidence”, when it becomes re-interpreted and (possibly) used as “soft evidence”?

But even though Carmel’s proposal was not implemented, the matter still raises interesting questions concerning the use of genetic ancestry tests for identity politics which in the future need to be discussed in greater detail. Anthropologist Yulia Egorova made a beginning when she wrote that “the ruling thus contains the promise of social empowerment”, but “it also appears that both the case of the Eretz Hemdah proposal and of the tests conducted among the ‘emerging’ Jewish groups point to the oppressive nature of genetic test usage in matters of identity arbitration even in those cases when such tests are commissioned by the disenfranchised groups or individuals themselves” (Egorova 2018, p. 549). We also need to ask how much can we rely on the results of one scientific study – even though it was published in a high-ranking scientific journal – given the current discussion on irreproducibility of scientific studies and the consequences which are entailed for personal lives? Can we continue to speak about DNA as seemingly “hard evidence”, when it becomes re-interpreted and (possibly) used as “soft evidence”? If there was a practice of using DNA tests as additional, “soft” evidence in a cultural context, would this not weaken the perception of DNA as decisive or determinative, rather than strengthen this notion? Can we speak about the danger of “biologization” in the Jewish context, when the “biological” is one component of its culture from the outset? In our specific case, the DNA test does not change the “conventional understanding of identity” (Brodwin 2002, p. 326), which is maternal Jewish descent. Equating the “new genetics” with essentialism does not reflect the subject in its complexity. In our context here, DNA-testing reinforces the conventional understanding of Jewishness as inherited maternally. This is especially the case given that the individuals already perceive themselves as part of a secular Jewish society, where most other members likewise identify by an-

cestry rather than by belonging to a religious group (Amit 2018). On the other hand, the use of genetic testing was criticized as a sign for Israel “increasingly embracing ethno-nationalist policies” (Ungar-Sargon 2019). But can a “racialization” of “Jewishness” be avoided, when DNA tests are meant to support the individual’s endeavor to “prove” her/his identity, especially vis-à-vis government officials?

Conclusion

The civil status situation of a group of Israeli citizens, against the current political and legal background, brings to fore the complexity of “Jewish genetics”. It highlights the overlap of the biological and religious narrative of Judaism. In the present constellation, a Jewish identity needs to be legally “proven” and “Jewishness” is legally defined according to traditional law by the Chief Rabbinate as maternal ancestry. This creates a situation in which DNA becomes an object of negotiation. Consequently, the narrative of biological determinism (the maternal descent) is maintained, and even enforced, although the criteria for “Jewishness” are in fact subordinated to the freedom of decision by the rabbinical authorities.

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