

# WHO ARE THE JEWISH PEOPLE?

## PART 1

By Anna McDowell

According to several DNA studies (given below), approximately 90-92% of Jewish people, living primarily in Israel, America, and throughout Europe today, do not descend from Noah's son Shem(Sem/Semitic) and they were never the original Israelites descended from Abraham, Isaac, and Jacob. In fact, the term "Jew/Jewish" is unique to this particular people group. The ten northern tribes of Israel, prior to being conquered by the Assyrian rulers Tiglath-Pileser and Shalmaneser V, would have referred to themselves as 'Israelites' and/or by their specific tribe (i.e. Ruebenites, Danites, Levites, etc.); the two southern tribes of Judah and Benjamin, in Jerusalem and throughout Judaea, would have referred to themselves as Judeans and Benjamites.

The purpose of this document is to show that the 'Jewish' people are, in fact, descendants of a Turkick people group of the northern Euro-Asia steppes, known as Khazarian, as well as descendants of their cousins, the Ashkenaz. The Khazar people are descended from Noah's third son **Japheth** - specifically through his son Gomer, who was the father of Togarmah and Ashkenaz(Ashkenazi) - the Khazars descending from Togarmah. The Bible gives us the genealogy of Japheth in Genesis chapter 10, verses 1-5, and the genealogy of Shem in Genesis chapter 10, verse 22 and also chapter 11, verses 10- :

- *10 Now these are the generations of the sons of Noah: Shem, Ham, and Japheth; and unto them were sons born after the flood. 2 **The sons of Japheth:** Gomer, and Magog, and Madai, and Javan, and Tubal, and Meshech, and Tiras. 3 And the **sons of Gomer:** **Ashkenaz**, and **Riphath**, and **Togarmah**. 4 And the sons of Javan: Elishah, and Tarshish, Kittim, and Dodanim. 5 Of these were the isles of the nations divided in their lands, every one after his tongue, after their families, in their nations. -Genesis 10:1-5*
- *10 **The sons of Shem:** Elam, and Asshur, and **Arpachshad**, and Lud, and Aram. <sup>23</sup> -Genesis 10:22*
- *"10 These are the generations of Shem: **Shem** was a hundred years old, and **begat Arpachshad** two years after the flood: 11 And Shem lived after he begat Arpachshad five hundred years, and begat sons and daughters. 12 And Arpachshad lived five and thirty years, and **begat Salah**: 13 And Arpachshad lived after he begat Salah four hundred and three years, and begat sons and daughters. 14 And Salah lived thirty years, and **begat Eber**: 15 And Salah lived after he begat Eber four hundred and three years, and begat sons and*

*daughters. 16 And Eber lived four and thirty years, and **begat Peleg**: 17 And Eber lived after he begat Peleg four hundred and thirty years, and begat sons and daughters. 18 And Peleg lived thirty years, and **begat Reu**: 19 And Peleg lived after he begat Reu two hundred and nine years, and begat sons and daughters. 20 And Reu lived two and thirty years, and **begat Serug**: 21 And Reu lived after he begat Serug two hundred and seven years, and begat sons and daughters. 22 And Serug lived thirty years, and **begat Nahor**: 23 And Serug lived after he begat Nahor two hundred years, and begat sons and daughters. 24 And Nahor lived nine and twenty years, and **begat Terah**: 25 And Nahor lived after he begat Terah an hundred and nineteen years, and begat sons and daughters. 26 And Terah lived seventy years, and **begat Abram, Nahor, and Haran.**” -Genesis 11:10-26*

The purpose of this very long genealogy is to show that Noah’s son, Shem, was the ancestor of Abraham. Abraham was the father of Isaac, and Isaac was the father of Jacob. Jacob became the father of twelve sons: Reuben, Simeon, Levi, Judah, Dan, Naphtali, Gad, Asher, Issachar, Zebulon, Joseph, and Benjamin. After Jacob had an encounter with the Angel of the Lord, his name was changed to Israel. Hence, from that time forward they were Israelites and during their captivity in Egypt, they were also referred to as Hebrews.

So as we can glean from these genealogies, the Hebrews/Israelites descend from Noah’s son Shem/Sem, where we get the term ‘semetic’, and the Jews/Jewish people descend from Noah’s son Japheth.

As we further make our way through the evidence provided in this document, we will see that a handful of secular Jewish historians and authors confirm this fact. We will also look at DNA studies that show exactly where the DNA of this people group originate, and it is not the Levant.

Khazaria was located between the Black Sea and Caspian sea, just below southern Russia and Volga Bulgaria, east of Italy, Hungary, and Poland, and northeast of the Byzantine Empire and northwest of the Muslim Empire.



In his book *The Thirteenth Tribe - The Khazar Empire and Its Heritage* (published in 1957) by Arthur Koestler, a secular Jew and historian, the author wrote:

*“About the time when Charlemagne was crowned Emperor of the West, the eastern confines of Europe, between the Caucasus and the Volga, were ruled by a Jewish state, known as the Khazar Empire. At the peak of its power, from the seventh to the tenth centuries A.D., it played a significant part in shaping the destinies of medieval, and consequently of modern, Europe.”*

Koestler goes on to say that the Khazars were a people of “Turkish stock” and were known for their great military strength and for being fierce warriors. Khazaria often “acted as a buffer, protecting Byzantium against invasions by the barbarian tribesmen of the northern Steppes - the Bulgars, Magyars(Huns), Pechenegs, and the later Vikings, specifically the Rus Vikings.” They were often paid, or rewarded, by the Byzantine rulers to protect them from the onslaught of the Muslim conquests, which Koestler states, prevented the Muslim conquest of Eastern Europe. So fierce was their military strength, they were able to hold their own against the attacks of the Rus when out on their raids. When the Khazarians were not fighting against the Rus, they were often engaged in commerce and trade with

them. Professor of Russian History at the University of Oxford, Dimitry Obolensky says this of the Khazars' military strength: *"The main contribution of the Khazars to world history was their success in holding the line of the Caucasus against the northward onslaught of the Arabs."*

The Volga River ran through the vast land of Khazaria and the Khazarian royal bloodline and 'pure Khazars' lived on one side of the bank of the river and all other peoples, such as the Muslims, the persecuted Judeans who had fled Byzantine, and 'others' lived on the opposite bank of the Volga. At the peak of Khazarian power they controlled or exacted tribute from some thirty different nations and tribes inhabiting the vast territories between the Caucasus, the Aral Sea, the Ural Mountains, the town of Kiev, and the Ukrainian steppes. The people under their reign included the Bulgars, Burtas, Ghuzz, Magyars(Hungarians), the Gothic and Greek colonies of the Crimea, and the Slavonic tribes in the north-western woodlands. Until the ninth century, the Khazars had no rivals to their supremacy in the regions north of the Black Sea and the adjoining steppe and forest regions of the Dnieper.

One of the earliest factual references to the Khazars occurred in a Syriac chronicle by Zacharia Rhetor, dating from the middle of the sixth century. It mentions the Khazars in a list of people who inhabited the region of the Caucasus. [Incidentally, the name 'Caucasus' appears to have been derived from 'Gog-hasan' which means 'Gog's Fort'.] Other sources indicate that they were already much in evidence a century earlier and intimately connected with the Huns. What did the Khazarians look like? According to Arab Chroniclers, they were described as follows:

*"As to the Khazars, they are to the north of the inhabited earth, towards the 7th clime...their land is cold and wet. Accordingly their complexions are white, their eyes blue, their hair flowing and predominantly reddish, their bodies large and their nature cold. Their general aspect is wild."*

A Georgian chronicler identified them with the hosts of Gog and Magog - he describes them as *"wild men with hideous faces and the manners of wild beasts, eaters of blood"*.

An Armenian writer refers to *"the horrible multitude of Khazars with insolent, broad, lash-less faces and long falling hair, like women."*

Then there is the description of them from an Arab geographer Istakhri, who said of them: *"The Khazars do not resemble the Turks. They are black-haired, and are of two kinds - one called the 'Kara-Khazars', meaning black Khazars who are swarthy verging on deep black as if they were a kind of Indian, and a white kind, 'Ak-Khazars', who are strikingly handsome."*

In A.D. 448, the Byzantine Emperor, Theodosius II, sent an embassy to Attila the Hun, which included a famed rhetorician by the name of Priscus. Priscus kept a minute account not only of the diplomatic negotiations, but also of the court intrigues and goings-on in Attila's banqueting hall...the writings of his time would resemble our modern-day gossip columnists, and he is still one of the main sources of

information about Hun customs and habits. Priscus also wrote about a people subject to the Huns, whom he called “Akatzirs”, which likely is the Ak-Khazars or “white” Khazars. It is quite probable that the Khazarian people resembled all of these descriptions, depending upon which region within Khazaria the various chroniclers were visiting at the time. It is also interesting to note that the Scythian tribes were in the nearby vicinity and they almost always were described as having long, red or blonde hair and blue or green eyes, so it is not improbable that the Khazarians might have interbred with some of the Scythian tribes near them, which could account for the descriptions of the Ak-Khazars.



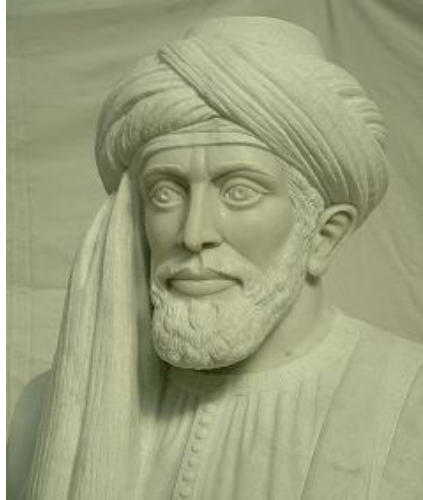
History records that the Khazars converted to Judaism in the year **742 A.D.** Prior to that, they were a **Turkic-speaking** pagan nation successfully doing business with the Christian Byzantine Empire to their west and the Muslim Caliphate to the south. Since they were situated along the Silk Route, they had a lucrative business by taxing travelers passing through their kingdom. The Khazarians had also earned a nefarious reputation for murdering travelers passing through Khazaria, then stealing their wealth, possessions, and even their identities.

Eventually great pressure was placed upon their ruler King Bulan, or Khagan Bulan, as he was called - Khagan being the official title of the ruling leader of Khazaria. Both the Byzantine and Muslim empires pressured the Khagan to convert to a religion because they could no longer turn a blind eye to Khazaria's pagan occultic practices, which were most likely Tengrism. Tengrism/Tengrianism is an ancient ethnic and state Turko-Mongolic religion originating in Central Asia and the Eurasian steppes region, based on folk shamanism, and generally centered around the sky god 'Tengri'. It was the prevailing religion of the Turks, Mongols, Bulgars, Xiongnu, Huns, and possibly the Magyars; it was the state religion of several medieval states: Gokturk Khaganate, Western Turkic Khaganate, Eastern Turkic Khaganate, Old Great Bulgaria, Danube Bulgaria, Volga Bulgaria, and Khazaria (known as Eastern Tourkia before they became a powerful kingdom in their own right). In *Irk Bitig*, a ninth century manuscript on divination, Tengri is mentioned as Turuk Tangrisi – 'God of the Turks'.

Khagan Bulan seemed to be a very shrewd king - he knew that if his empire converted to Christianity, the Muslims would cease doing business with him but if the Khazars converted to Islam, the Christians would stop doing business with him. He also surmised that his adopting of the Christian religion would have made him subject to the Byzantine ecclesiastical order and likewise, his adopting of the Muslim religion would have made him subject to the Caliphate ruler. So after some consultation, he decided Khazaria would convert to Judaism, in order to keep his kingdom a sovereign entity, while also allowing him to continue doing business with both of his neighbors...it seemed a win-win situation. Khagan Bulan then located Judean sages to come teach him and his people the customs and religion of the Judeans - much of what these sages taught came from the Talmud and Kabbalah, which was the religion of Zoroastrianism, which originated in Babylon. In addition, the king, his nobility, and all the people changed their names to Hebrew names at this time. However, there seems to be evidence that they did not change their pagan, occultic ways - to the public eye they appeared to have changed their ways but privately, they continued to carry on their occultic practices just as they always had.

In the time period between **954-961 A.D.**, a man by the name of Hasdai Ibn Shaprut, an ethnic Judean serving as chief minister to the Caliph of Cordoba, sent letters to King Joseph, Khagan of the Khazars. Hasdai Ibn Shaprut was of a very good reputation, known as the "most brilliant figure in the 'Golden Age' (900-1200 A.D.) of the Judeans of Spain." Hasdai had heard about a free and thriving Judean kingdom from some merchant traders in Persia and was very eager to know more about this kingdom, so he sent a letter by courier to King Joseph. According to Arthur Koestler:

"The letter contained a list of questions about the Khazar state, its people, method of government, its rites in observing the Sabbath, armed forces, and so on - **including an inquiry as to which of the twelve tribes [of Israel] King Joseph belonged.** This seems to indicate that Hasdai believed the Jewish Khazars to hail from Palestine - as the Spanish Jews did - and perhaps even to represent one of the Lost Tribes. Joseph, not being of Jewish descent, belonged to none of the tribes."



In Hasdai's letter to King Joseph, he gives a glowing account of the prosperity of Moorish Spain, about the pleasant living conditions of the Judeans under Caliph Abd al Rahman, the name of the Country where these Judeans live is called - in Hebrew - 'Sepharad', but how the "Ishmaelites who inhabit it call it 'al-Andalus'." Hasdai Ibn Shaprut ends his letter with the following words:

*"I feel the urge to know the truth, whether there is really a place on this earth where harassed Israel can rule itself, where it is subject to no one. If I were to know that this is indeed the case, I would not hesitate to forsake all honours, to resign my high office, to abandon my family, and to travel over mountain and plains, over land and water, until I arrived at the place where my Lord, the King rules...And I also have one more request - to be informed whether you have any knowledge of [the possible date] of the Final Miracle [the coming of the Messiah] which, wandering from country to country, we are awaiting. Dishonoured and humiliated in our dispersion, we have to listen in silence to those who say 'every nation has its own land and you alone possess not even a shadow of a country on this earth'."*

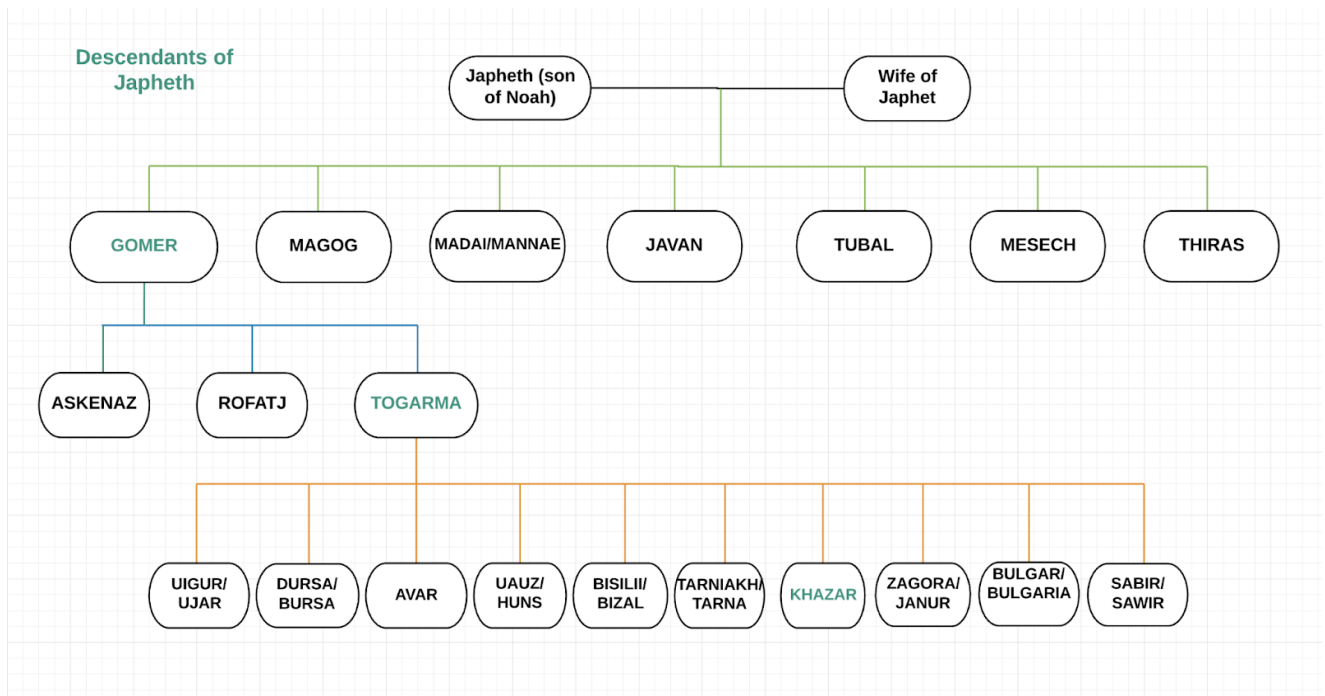
Arthur Koestler wrote:

"King Joseph's reply is less accomplished and moving than Hasdai's letter. It starts with a fanfare of greetings, then reiterates the main contents of Hasdai's letter, proudly emphasizing that the Khazar kingdom gives the lie to those who say that the *Sceptre of Judah* has forever fallen from the Jews' hands and that there is no place on earth for a kingdom of their own. Khagan Joseph then proceeds to provide a genealogy of his people. Though a fierce Jewish nationalist, proud of wielding the 'Sceptre of Judah', he cannot, and does not, claim for them Semitic descent; he traces their ancestry, not to Shem, but to Noah's third son, Japheth; more precisely to Japheth's grandson, Togarma, the ancestor of all Turkish tribes.

*"We have found in the family registers of our fathers, that **Togarma** had ten sons, and the names of their offspring are as follows: Uigur, Dursu, Avars, Huns, Basili, Tarniakh,*



*Khazars, Zagora, Bulgars, Sabir. We are the sons of Khazar, the seventh'...the characteristic feature in this genealogical exercise is the amalgamation of Genesis with Turkish tribal tradition." Regarding this last comment, Koestler added an asterisk, noting a comment at the bottom of page 90 which reads: "It also throws a sidelight on the frequent description of the Khazars as the people of Magog. Magog, according to Genesis 10:2-3, was the much maligned uncle of Togarma."*





After the defeat of the Khazarian capital of Itil/Atil, in **965 A.D.**, at the hands of the Rus, and then the complete destruction of the Empire by Ghengas Khan in the middle of the thirteenth century, the ruling Khagan and his Khazarian nobility fled first to Russia and Poland, as they were closer, then eventually to western Europe, including France, Spain, Germany, and England. While living in their new homes throughout Europe, the former Khazarians decided it would be more advantageous for them to change their identity in the new towns and cities - they had earned a very notorious reputation as Khazarians and did not want to call attention to their former lives. So they reinvented themselves to that of 'Ashkenazi Jews' (the Ashkenazi, after all, were their cousins and assuming other identities was something they were used to doing), and they became involved with new types of business, especially in the area of banking. Remember, they had done very well for themselves in the business of trade and taxation of foreigners through their kingdom for many centuries, accumulating much wealth...it is not improbable that they might have learned a thing or two about banking from possible interactions with the Templars along the Silk Road.

On pages 15-18 of his book, Arthur Koestler quoted a commentary by Hungarian Marxist historian, Dr. Antal Bartha, in his book entitled *The Magyar Society in the Eighth and Ninth Centuries*, which has several chapters on the Khazars, due to the fact that during most of the period between the eighth and ninth centuries the Khazars ruled the Hungarians. Dr. Antal's commentary reads as follows:

*"Our investigation cannot go into problems pertaining to the history of ideas, but we must call the reader's attention to the matter of the Khazar kingdom's state religion. It was the Jewish faith which became the official religion of the ruling strata of society. Needless to say, the acceptance of the Jewish faith as the state religion of an ethnically non-Jewish people could be the subject of interesting speculations. We shall, however, confine ourselves to the remark that this official conversion - in defiance of Christian proselytizing by Byzantium, the Muslim influence from the East, and in spite of the political pressure of these two powers - to a religion which had no support from any political power, but was persecuted by nearly all - has come as a surprise to all historians concerned with the Khazars, and cannot be considered as accidental, but must be regarded as a sign of the independent policy pursued by that kingdom. What is in dispute is the fate of the Jewish Khazars after the destruction of their empire, in the twelfth or thirteenth century. On this problem the sources are scant, but various late medieval Khazar settlements are mentioned in the Crimea, in the Ukraine, in Hungary, Poland and Lithuania. The general picture that emerges from these fragmentary pieces of information is that of a migration of Khazar tribes and communities into those regions of Eastern Europe - mainly Russia and Poland - where, at the dawn of the Modern Age, the greatest concentrations of Jews were found. **This has led several historians to conjecture that a substantial part and perhaps the majority of eastern Jews - and hence of world Jewry - might be of Khazar, and not of Semitic Origin.**"*

Koestler then stated, after quoting Dr. Antal's commentary...

*"the far-reaching implication of this hypothesis may explain the great caution exercised by historians in approaching this subject - if they do not avoid it altogether." He goes on to write*

*“how important, in quantitative terms, is that ‘presence’ of the Caucasian sons of Japheth in the tents of Shem? One of the most radical propounders of the hypothesis concerning the Khazar origins of Jewry is the Professor of Medieval Jewish History at Tel Aviv University, A.N. Poliak. His book Khazaria (in Hebrew) was published in 1944 in Tel Aviv [Israel], and a second edition in 1951. In his introduction he writes that the facts demand “a new approach, both to the problem of the relations between the Khazar Jewry and other Jewish communities, and to the question of how far we can go in regarding this [Khazar] Jewry as the nucleus of the large Jewish settlement in Eastern Europe...The descendants of this settlement - those who stayed where they were, those who emigrated to the United States and to other countries, and those who went to Israel - constitute now the large majority of world Jewry”.*

Koestler then wrote:

*“This [A.N. Poliak’s book] was written before the full extent of the holocaust was known, but that does not alter the fact that **the large majority of surviving Jews in the world is of Eastern European - and thus perhaps mainly of Khazar - origin. If so, this would mean that their ancestors came not from the Jordan River but from the Volga, not from Canaan but from the Caucasus, once believed to be the cradle of the Aryan race; and that genetically, they are more closely related to the Hun, Uigur and Magyar tribes than to the seed of Abraham, Isaac and Jacob. Should this turn out to be the case, then the term ‘anti-Semitism’ would become void of meaning, based on a misapprehension shared by both the killers and their victims. **The story of the Khazar Empire, as it slowly emerges from the past, begins to look like the cruelest hoax which history has ever perpetrated.**”***

Yes, indeed, this taking over and assuming of the Hebrew/Israelite identity is a very cruel hoax perpetrated not only on the world, but the ordinary Jewish people themselves. Make no mistake, this identity theft has been brought about by the highest Elite, known to us as the Zionists, and as of recently, the ‘Khazarian Mafia’. It is important to make the distinction between this group of Elite, that KNOWINGLY put forth the narrative that the Jews were the descendants of Abraham, Isaac, and Jacob (for the purpose of taking the land of Israel), and the everyday Jewish person, who wholeheartedly believes this to be true. They cannot all be lumped together. The everyday Jewish person is every bit as deceived as the rest of us, and they should not be held accountable for what their Zionist leaders have done.

Another ugly reality that we need to look at is who the Elite were that sold six million Jews to Hitler to be slaughtered, and why. And what you don’t know is that Hitler offered to sell them back to the Zionist’s for 50 cents per head but the Zionists declined the offer. This is not to imply that Hitler was a good guy - no, far from it - but the Zionists made sure that he got the blame, while also taking care of their problem of who not to take to Palestine with them after stealing it. But we will talk about that in Part 2. For now, we need to look at some of the DNA studies that confirm the Jewish people as being from a Turkick ethnicity.

# DNA STUDIES



## The Origins of Ashkenaz, Ashkenazic Jews, and Yiddish

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Recently, the geographical origins of Ashkenazic Jews (AJs) and their native language Yiddish were investigated by applying the Geographic Population Structure (GPS) to a cohort of exclusively Yiddish-speaking and multilingual AJs. GPS localized most AJs along major ancient trade routes in northeastern Turkey adjacent to primeval villages with names that resemble the word "Ashkenaz." These findings were compatible with the hypothesis of an Irano-Turko-Slavic origin for AJs and a Slavic origin for Yiddish and at odds with the Rhineland hypothesis advocating a Levantine origin for AJs and German origins for Yiddish. We discuss how these findings advance three ongoing debates concerning (1) the historical meaning of the term "Ashkenaz;" (2) the genetic structure of AJs and their geographical origins as inferred from multiple studies employing both modern and ancient DNA and original ancient DNA analyses; and (3) the development of Yiddish. We provide additional validation to the non-Levantine origin of AJs using ancient DNA from the Near East and the Levant. Due to the rising popularity of geo-localization tools to address questions of origin, we briefly discuss the advantages and limitations of popular tools with focus on the GPS approach. Our results reinforce the non-Levantine origins of AJs.

**Keywords:** Yiddish, Ashkenazic Jews, Ashkenaz, geographic population structure (GPS), Archaeogenetics, Rhineland hypothesis, ancient DNA

### BACKGROUND

The geographical origin of the Biblical "Ashkenaz," Ashkenazic Jews (AJs), and Yiddish, are among the longest standing questions in history, genetics, and linguistics.

Uncertainties concerning the meaning of "Ashkenaz" arose in the Eleventh century when the term shifted from a designation of the Iranian Scythians to become that of Slavs and Germans and finally of "German" (Ashkenazic) Jews in the Eleventh to Thirteenth centuries (Wexler, 1993). The first known discussion of the origin of German Jews and Yiddish surfaced in the writings of the Hebrew grammarian Elia Baxur in the first half of the Sixteenth century (Wexler, 1993).

It is well established that history is also reflected in the DNA through relationships between genetics, geography, and language (e.g., Cavalli-Sforza, 1997; Weinreich, 2008). Max Weinreich, the doyen of the field of modern Yiddish linguistics, has already emphasized the truism that the history of Yiddish mirrors the history of its speakers. These relationships prompted Das et al. (2016) to address the question of Yiddish origin by analyzing the genomes of Yiddish-speaking AJs, multilingual AJs, and Sephardic Jews using the Geographic Population Structure (GPS), which localizes genomes to where they experienced the last major admixture event. GPS traced nearly all AJs to major ancient trade routes in northeastern Turkey adjacent to four primeval villages whose names resemble

“Ashkenaz.” İşkenaz (or Eşkenaz), Eşkenez (or Eşkens), Aşhanas, and Aschuz. Evaluated in light of the Rhineland and Irano-Turko-Slavic hypotheses (Das et al., 2016, **Table 1**) the findings supported the latter, implying that Yiddish was created by Slavo-Iranian Jewish merchants plying the Silk Roads. We discuss these findings from historical, genetic, and linguistic perspectives and calculate the genetic similarity of AJs and Middle Eastern populations to ancient genomes from Anatolia, Iran, and the Levant. We lastly review briefly the advantages and limitation of bio-localization tools and their application in genetic research.

## THE HISTORICAL MEANING OF ASHKENAZ

“Ashkenaz” is one of the most disputed Biblical placenames. It appears in the Hebrew Bible as the name of one of Noah’s

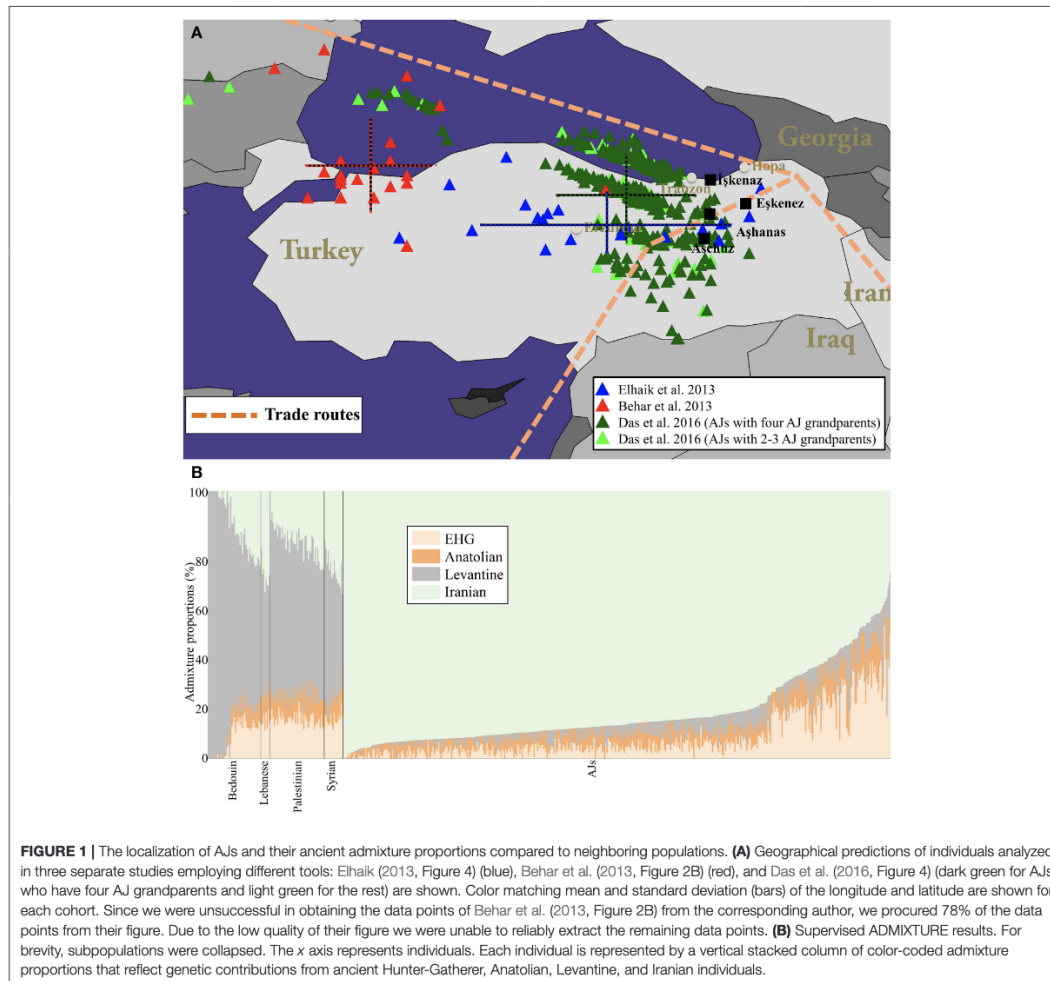
descendants (Genesis 10:3) and as a reference to the kingdom of Ashkenaz, prophesied to be called together with Ararat and Minnai to wage war against Babylon (Jeremiah 51:27). In addition to tracing AJs to the ancient Iranian lands of Ashkenaz and uncovering the villages whose names may derive from “Ashkenaz,” the partial Iranian origin of AJs, inferred by Das et al. (2016), was further supported by the genetic similarity of AJs to Sephardic Mountain Jews and Iranian Jews as well as their similarity to Near Eastern populations and simulated “native” Turkish and Caucasus populations.

There are good grounds, therefore, for inferring that Jews who considered themselves Ashkenazic adopted this name and spoke of their lands as Ashkenaz, since they perceived themselves as of Iranian origin. That we find varied evidence of the knowledge of Iranian language among Moroccan and Andalusian Jews and Karaites prior to the Eleventh century is a compelling point

**TABLE 1** | Major open questions regarding the origin of the term “Ashkenaz,” AJs, and Yiddish as explained by two competing hypotheses.

Open questions	Rhineland hypothesis	Irano-Turko-Slavic hypothesis	Evidence in favor of the Irano-Turko-Slavic hypothesis
The term “Ashkenaz”	Originally affiliated with the people living north of Biblical Israel (Aproot, 2016) or north of the Black Sea (Wexler, 1991). Used in Hebrew and Yiddish sources from the Eleventh century onward to denote a region in what is now roughly Southern Germany (Wexler, 1991; Aproot, 2016).	Denotes an Iranian people “near Armenia,” presumably Scythians known as <i>aškuza</i> , <i>aşguza</i> , or <i>işguza</i> in Assyrian inscriptions of the early Seventh century B.C. (Wexler, 2012, 2016).	GPS analysis uncovered four primeval villages in northeastern Turkey whose names resemble “Ashkenaz,” at least one of which predates any major Jewish settlement in Germany (Das et al., 2016). “Ashkenaz” is thereby a placename associated with the Near East and its inhabitants both Jews and non-Jews.
The ancestral origin of Ashkenazic Jews	Judaean living in Judaea until 70 A.D. who were exiled by the Romans (King, 2001) and remained in relative isolation from neighboring non-Jewish communities during and after the Diaspora (Hammer et al., 2000; Ostrer, 2001). This scenario has no historical (Sand, 2009) nor genetic support ( <b>Figure 1B</b> ) (e.g., Elhaik, 2013, 2016; Xue et al., 2017).	A minority of Judaean emigrants and a majority of Irano-Turko-Slavic converts to Judaism (Wexler, 2012).	AJs exhibit high genetic similarity to populations living in Turkey and the Caucasus (Das et al., 2016). All bio-location analyses predicted AJs to Turkey ( <b>Figure 1A</b> ). Ancient DNA analyses provide strong evidence of the Iranian Neolithic ancestry of AJs ( <b>Figure 1B</b> ) (Lazaridis et al., 2016).
The arrival of Jews to German lands	After the arrival of Palestinian Jews to Roman lands, Jewish merchants and soldiers arrived to German lands with the Roman army and settled there (King, 2001). This scenario has no historical support (Wexler, 1993; Sand, 2009).	Jews from the Khazar Empire and the former Iranian Empire plying the old Roman trade routes (Rabinowitz, 1945, 1948) and Silk Roads began to settle in the mixed Germano-Sorbian lands during the first Millennium (Sand, 2009; Wexler, 2011).	Ashkenazic Jews were predicted to a Near Eastern hub of ancient trade routes that connected Europe, Asia, and the northern Caucasus (Das et al., 2016). The findings imply that migration to Europe took place initially through trade routes going west and later through Khazar lands.
Yiddish’s emergence in the 9th century	Between the Ninth and Tenth centuries, French- and Italian-speaking Jewish immigrants adopted and adapted the local German dialects (Weinreich, 2008).	Upon arrival to German lands, Western and Eastern Slavic went through a relexification to German, creating what became known as Yiddish (Wexler, 2012).	Xue et al.’s (2017) inferred “admixture time” of 960–1,416 AD corresponds to a time period during which AJ have experienced major demographic changes. At that time, AJs were speculated to have absorbed Slavic people, developed Slavic Yiddish, and intensified the migration to Europe (Das et al., 2016).
Growth of Eastern European Jewry	A small group of German Jews migrated to Eastern Europe and reproduced via a so-called “demographic miracle” (Ben-Sasson, 1976; Atzmon et al., 2010; Ostrer, 2012), which resulted in an unnatural growth rate (1.7–2% annually) (van Straten and Snel, 2006; van Straten, 2007) over half a millennium acting only on Jews residing in Eastern Europe. This explanation is unsupported by the data.	During the half millennium (740–1,250 CE), Khazar and Iranian lands harbored the largest Eurasian Jewish centers. Ashkenazic, Khazar, and Iranian Jews then sent offshoots into the Slavic lands (Baron, 1957; Sand, 2009).	Most of the Ashkenazic Jews were predicted to Northeastern Turkey and the remaining individuals clustered along a gradient going from Turkey to Eastern European lands (Das et al., 2016). This is in agreement with the recorded conversions of populations living along the southern shores of the Black Sea to Judaism (Baron, 1937). A German origin of AJs is unsupported by the data ( <b>Figure 1A</b> ).

The genetic evidence produced by Das et al. (2016) is shown in the last column.



**FIGURE 1** | The localization of AJs and their ancient admixture proportions compared to neighboring populations. **(A)** Geographical predictions of individuals analyzed in three separate studies employing different tools: Elhaik (2013, Figure 4) (blue), Behar et al. (2013, Figure 2B) (red), and Das et al. (2016, Figure 4) (dark green for AJs who have four AJ grandparents and light green for the rest) are shown. Color matching mean and standard deviation (bars) of the longitude and latitude are shown for each cohort. Since we were unsuccessful in obtaining the data points of Behar et al. (2013, Figure 2B) from the corresponding author, we procured 78% of the data points from their figure. Due to the low quality of their figure we were unable to reliably extract the remaining data points. **(B)** Supervised ADMIXTURE results. For brevity, subpopulations were collapsed. The x axis represents individuals. Each individual is represented by a vertical stacked column of color-coded admixture proportions that reflect genetic contributions from ancient Hunter-Gatherer, Anatolian, Levantine, and Iranian individuals.

of reference to assess the shared Iranian origins of Sephardic and Ashkenazic Jews (Wexler, 1996). Moreover, Iranian-speaking Jews in the Caucasus (the so-called Juhuris) and Turkic-speaking Jews in the Crimea prior to World War II called themselves “Ashkenazim” (Weinreich, 2008).

The Rhineland hypothesis cannot explain why a name that denotes “Scythians” and was associated with the Near East became associated with German lands in the Eleventh to Thirteenth centuries (Wexler, 1993). Aptrout (2016) suggested that Jewish immigrants in Europe transferred Biblical names onto the regions in which they settled. This is unconvincing. Biblical names were used as place names only when they had similar sounds. Not only Germany and Ashkenaz do not share

similar sounds, but Germany was already named “Germana,” or “Germamja” in the Iranian (“Babylonian”) Talmud (completed in the Fifth century A.D.) and, not surprisingly, was associated with Noah’s grandson Gomer (Talmud, Yoma 10a). Name adoption also occurred when the exact place names were in doubt as in the case of Sefarad (Spain). This is not the case here, as Aptrout too notes, since “Ashkenaz” had a known and clear geographical affiliation (Table 1). Finally, Germany was known to French scholars like the RaDaK (1160–1235) as “Almania” (Sp. Alemania, Fr. Allemagne), after the Almani tribes, a term that was also adopted by Arab scholars. Had the French scholar Rashi (1040?–1105), interpreted aškenaz as “Germany,” it would have been known to the RaDaK who used Rashi’s symbols.



Therefore, Wexler's proposal that Rashi used *aškenaz* in the meaning of "Slavic" and that the term *aškenaz* assumed the solitary meaning "German lands" only after the Eleventh century in Western Europe as a result of the rise of Yiddish, is more reasonable (Wexler, 2011). This is also supported by Das et al.'s major findings of the only known primeval villages whose names derive from the word "Ashkenaz" located in the ancient lands of Ashkenaz. Our inference is therefore supported by historical, linguistic, and genetic evidence, which has more weight as a simple origin that can be easily explained than a more complex scenario that involves multiple translocations.

## THE GENETIC STRUCTURE OF ASHKENAZIC JEWS

AJs were localized to modern-day Turkey and found to be genetically closest to Turkic, southern Caucasian, and Iranian populations, suggesting a common origin in Iranian "Ashkenaz" lands (Das et al., 2016). These findings were more compatible with an Irano-Turko-Slavic origin for AJs and a Slavic origin for Yiddish than with the Rhineland hypothesis, which lacks historical, genetic, and linguistic support (Table 1) (van Straten, 2004; Elhaik, 2013). The findings have also highlighted the strong social-cultural and genetic bonds of Ashkenazic and Iranian Judaism and their shared Iranian origins (Das et al., 2016).

Thus far, all analyses aimed to geo-localize AJs (Behar et al., 2013, Figure 2B; Elhaik, 2013, Figure 4; Das et al., 2016, Figure 4) identified Turkey as the predominant origin of AJs, although they used different approaches and datasets, in support of the Irano-Turko-Slavic hypothesis (Figure 1A, Table 1). The existence of both major Southern European and Near Eastern ancestries in AJ genomes are also strong indicators of the Irano-Turko-Slavic hypothesis provided the Greco-Roman history of the region southern to the Black Sea (Baron, 1937; Kraemer, 2010). Recently, Xue et al. (2017) applied GLOBETROTTER to a dataset of 2,540 AJs genotyped over 252,358 SNPs. The inferred ancestry profile for AJs was 5% Western Europe, 10% Eastern Europe, 30% Levant, and 55% Southern Europe (a Near East ancestry was not considered by the authors). Elhaik (2013) portrayed a similar profile for European Jews, consisting of 25–30% Middle East and large Near Eastern–Caucasus (32–38%) and West European (30%) ancestries. Remarkably, Xue et al. (2017) also inferred an "admixture time" of 960–1,416 AD ( $\approx 24$ –40 generations ago), which corresponds to the time AJs experienced major geographical shifts as the Judaized Khazar kingdom diminished and their trading networks collapsed forcing them to relocate to Europe (Das et al., 2016). The lower boundary of that date corresponds to the time Slavic Yiddish originated, to the best of our knowledge.

The non-Levantine origin of AJs is further supported by an ancient DNA analysis of six Natufians and a Levantine Neolithic (Lazaridis et al., 2016), some of the most likely Judaean progenitors (Finkelstein and Silberman, 2002; Frenndo, 2004). In a principle component analysis (PCA), the ancient Levantines clustered predominantly with modern-day Palestinians and Bedouins and marginally overlapped with Arabian Jews, whereas

AJs clustered away from Levantine individuals and adjacent to Neolithic Anatolians and Late Neolithic and Bronze Age Europeans. To evaluate these findings, we inferred the ancient ancestries of AJs using the admixture analysis described in Marshall et al. (2016). Briefly, we analyzed 18,757 autosomal SNPs genotyped in 46 Palestinians, 45 Bedouins, 16 Syrians, and eight Lebanese (Li et al., 2008) alongside 467 AJs [367 AJs previously analyzed and 100 individuals with AJ mother) (Das et al., 2016) that overlapped with both the GenoChip (Elhaik et al., 2013) and ancient DNA data (Lazaridis et al., 2016). We then carried out a supervised ADMIXTURE analysis (Alexander and Lange, 2011) using three East European Hunter Gatherers from Russia (EHGs) alongside six Epipaleolithic Levantines, 24 Neolithic Anatolians, and six Neolithic Iranians as reference populations (Table S0). Remarkably, AJs exhibit a dominant Iranian (88%) and residual Levantine (3%) ancestries, as opposed to Bedouins (14% and 68%, respectively) and Palestinians (18% and 58%, respectively). Only two AJs exhibit Levantine ancestries typical to Levantine populations (Figure 1B). Repeating the analysis with *qpAdm* (AdmixTools, version 4.1) (Patterson et al., 2012), we found that AJs admixture could be modeled using either three- (Neolithic Anatolians [46%], Neolithic Iranians [32%], and EHG [22%]) or two-way (Neolithic Iranians [71%] and EHG [29%]) migration waves (Supplementary Text). These findings should be reevaluated when Medieval DNA would become available. Overall, the combined results are in a strong agreement with the predictions of the Irano-Turko-Slavic hypothesis (Table 1) and rule out an ancient Levantine origin for AJs, which is predominant among modern-day Levantine populations (e.g., Bedouins and Palestinians). This is not surprising since Jews differed in cultural practices and norms (Sand, 2011) and tended to adopt local customs (Falk, 2006). Very little Palestinian Jewish culture survived outside of Palestine (Sand, 2009). For example, the folklore and folkways of the Jews in northern Europe is distinctly pre-Christian German (Patai, 1983) and Slavic in origin, which disappeared among the latter (Wexler, 1993, 2012).

## THE LINGUISTIC DEBATE CONCERNING FORMATION OF YIDDISH

The hypothesis that Yiddish has a German origin ignores the mechanics of relexification, the linguistic process which produced Yiddish and other "Old Jewish" languages (i.e., those created by the Ninth to Tenth century). Understanding how relexification operates is essential to understanding the evolution of languages. This argument has a similar context to that of the evolution of powered flight. Rejecting the theory of evolution may lead one to conclude that birds and bats are close relatives. By disregarding the literature on relexification and Jewish history in the early Middle Ages, authors (e.g., Aptroot, 2016; Flegontov et al., 2016) reach conclusions that have weak historical support. The advantage of a geo-localization analysis is that it allows us to infer the geographical origin of the speakers of Yiddish, where they resided and with whom they intermingled, independently of historical controversies, which provides a data driven view

on the question of geographical origins. This allows an objective review of potential linguistic influences on Yiddish (Table 1), which exposes the dangers in adopting a “linguistic creationism” view in linguistics.

The historical evidence in favor of an Irano-Turko-Slavic origin for Yiddish is paramount (e.g., Wexler, 1993, 2010). Jews played a major role on the Silk Roads in the Ninth to Eleventh century. In the mid-Ninth century, in roughly the same years, Jewish merchants in both Mainz and at Xi’an received special trading privileges from the Holy Roman Empire and the Tang dynasty court (Robert, 2014). These roads linked Xi’an to Mainz and Andalusia, and further to sub-Saharan Africa and across to the Arabian Peninsula and India-Pakistan. The Silk Roads provided the motivation for Jewish settlement in Afro-Eurasia in the Ninth to Eleventh centuries since the Jews played a dominant role on these routes as a neutral trading guild with no political agendas (Gil, 1974; Cansdale, 1996, 1998). Hence, the Jewish traders had contact with a wealth of languages in the areas that they traversed (Hadj-Sadok, 1949; Khordadbeh, 1889; Hansen, 2012; Wexler TBD), which they brought back to their communities nested in major trading hubs (Rabinowitz, 1945, 1948; Das et al., 2016). The central Eurasian Silk Roads were controlled by Iranian polities, which provided opportunities for Iranian-speaking Jews, who constituted the overwhelming bulk of the world’s Jews from the time of Christ to the Eleventh century (Baron, 1952). It should not come as a surprise to find that Yiddish (and other Old Jewish languages) contains components and rules from a large variety of languages, all of them spoken on the Silk Roads (Khordadbeh, 1889; Wexler, 2011, 2012, 2017).

In addition to language contacts, the Silk Roads also provided the motivation for widespread conversion to Judaism by populations eager to participate in the extremely lucrative trade, which had become a Jewish quasi-monopoly along the trade routes (Rabinowitz, 1945, 1948; Baron, 1957). These conversions are discussed in Jewish literature between the Sixth and Eleventh centuries, both in Europe and Iraq (Sand, 2009; Kraemer, 2010). Yiddish and other Old Jewish languages were all created by the peripatetic merchants as secret languages that would isolate them from their customers and non-Jewish trading partners (Hadj-Sadok, 1949; Gil, 1974; Khordadbeh, 1889; Cansdale, 1998; Robert, 2014). The study of Yiddish genesis, thereby, necessitates the study of all the Old Jewish languages of this time period.

There is also a quantifiable amount of Iranian and Turkic elements in Yiddish. The Babylonian Talmud, completed by the Sixth century A.D., is rich in Iranian linguistic, legalistic, and religious influences. From the Talmud, a large Iranian vocabulary has entered Hebrew and Judeo-Aramaic, and from there spread to Yiddish. This corpus has been known since the 1930s and is common knowledge to Talmud scholars (Telegdi, 1933). In the Khazar Empire, the Eurasian Jews, plying the Silk Roads, became speakers of Slavic—an important language because of the trading activities of the Rus’ (pre-Ukrainians) with whom the Jews were undoubtedly allied on the routes linking Baghdad and Bavaria. This is evident by the existence of newly invented Hebröidism, inspired by Slavic patterns of discourse in Yiddish (Wexler, 2010).

We advocate for implementing a more evolutionary understanding in linguistics. That includes giving more attention to the linguistic process that alter languages (e.g., relexification) and acquiring more competence in other languages and histories. When studying the origin of Ashkenazic Jews and Yiddish, such knowledge should include the history of the Silk Roads and Irano-Turkish languages.

## INFERENCE OF GEOGRAPHICAL ORIGINS

Deciphering the origin of human populations is not a new challenge for geneticists, yet only in the past decade high-throughput genetic data were harnessed to answer these questions. Here, we briefly discuss the differences between the available tools based on identity by distance. Existing PCA or PCA-like approaches (e.g., Novembre et al., 2008; Yang et al., 2012) can localize Europeans to countries (understood as the last place where major admixture event took place or the place where the four ancestors of “unmixed” individuals came from) with less than 50% accuracy (Yang et al., 2012). The limitations of PCA (discussed in Novembre and Stephens, 2008) appear to be inherent in the framework where continental populations plotted along the two primary PCs cluster in the vertices of a triangle-like shape and the remaining populations cluster along or within the edges (e.g., Elhaik et al., 2013). There is therefore reason to question the applicability of ambitious PCA-based methods (Yang et al., 2012, 2014) aiming to infer multiple ancestral locations outside of Europe. Overall, accurate localization of worldwide individuals remains a significant challenge (Elhaik et al., 2014).

The GPS framework assumes that humans are mixed and that their genetic variation (admixture) can be modeled by the proportion of genotypes assigned to any number of fixed regional *putative ancestral populations* (Elhaik et al., 2014). GPS employs a supervised ADMIXTURE analysis where the admixture components are fixed, which allows evaluating both the test individuals and *reference populations* against the same *putative ancestral populations*. GPS infers the geographical coordinates of an individual by matching their admixture proportions with those of *reference populations*. *Reference populations* are populations known to reside in a certain geographical region for a substantial period of time in a time frame of hundreds to a thousand years and can be predicted to their geographical locations while absent from the *reference population panel* (Das et al., 2016). The final geographic location of a test individual is determined by converting the genetic distance of the individual to *m reference populations* into geographic distances (Elhaik et al., 2014). Intuitively, the *reference populations* can be thought of as “pulling” the individual in their direction with a strength proportional to their genetic similarity until a consensus is reached (Figure S1). Interpreting the results, particularly when the predicted location differs from the contemporary location of the studied population, demands cautious.

Population structure is affected by biological and demographic processes like genetic drift, which can act rapidly on small, relatively isolated populations, as opposed to large



non-isolated populations, and migration, which occurs more frequently (Jobling et al., 2013). Understanding the geography-admixture relationships necessitates knowing how relative isolation and migration history affected the allele frequencies of populations. Unfortunately, oftentimes we lack information about both processes. GPS addresses this problem by analyzing the relative proportions of admixture in a global network of *reference populations* that provide us with different “snapshots” of historical admixture events. These global admixture events occurred at different times through different biological and demographic processes, and their long-lasting effect is related to our ability to associate an individual with their matching admixture event.

In relatively isolated populations the admixture event is likely old, and GPS would localize a test individual with their parental population more accurately. By contrast, if the admixture event was recent and the population did not maintain relative isolation, GPS prediction would be erroneous (Figure S2). This is the case of Caribbean populations, whose admixture proportions still reflect the massive Nineteenth and Twentieth centuries’ mixture events involving Native Americans, West Europeans, and Africans (Elhaik et al., 2014). While the original level of isolation remains unknown, these two scenarios can be distinguished by comparing the admixture proportions of the test individual and adjacent populations. If this similarity is high, we can conclude that we have inferred the likely location of the admixture event that shaped the admixture proportion of the test individual. If the opposite is true, the individual is either mixed and thereby violates the assumptions of the GPS model or the parental populations do not exist either in GPS’s reference panel or in reality. Most of the time (83%) GPS predicted unmixed individuals to their true locations with most of the remaining individuals predicted to neighboring countries (Elhaik et al., 2014).

To understand how migration modifies the admixture proportions of the migratory and host populations, we can consider two simple cases of point or massive migration followed by assimilation and a third case of migration followed by isolation. Point migration events have little effect on the admixture proportions of the host population, particularly when it absorbs a paucity of migrants, in which case the migrants’ admixture proportions would resemble those of the host population within a few generations and their resting place would represent that of the host population. Massive demographic movements, such as large-scale invasion or migration that affect a large part of the population are rare and create temporal shifts in the admixture proportions of the host population. The host population would temporarily appear as a two-way mixed population, reflecting the components of the host and invading populations (e.g., European and Native American, in the case of Puerto Ricans) until the admixture proportions would homogenize population-wise. If this process is completed, the admixture signature of this region may be altered and the geographical placement of the host population would represent again the last place where the admixture event took place for both the host and invading populations. GPS would, thereby, predict the host population’s location for

both populations. Populations that migrate from A to B and maintain genetic isolation would be predicted to point A in the leave-one-out population analysis. While human migrations are not uncommon, maintaining a perfect genetic isolation over a long period of time is very difficult (e.g., Veeramah et al., 2011; Behar et al., 2012; Elhaik, 2016; Hellenthal et al., 2016), and GPS predictions for the vast majority of worldwide populations indicate that these cases are indeed exceptional (Elhaik et al., 2014). Despite of its advantages, GPS has several limitations. First, it yields the most accurate predictions for unmixed individuals. Second, using migratory or highly mixed populations (both are detectable through the leave-one-out population analysis) as *reference populations* may bias the predictions. Further developments are necessary to overcome these limitations and make GPS applicable to mixed population groups (e.g., African Americans).

## CONCLUSION

The meaning of the term “Ashkenaz” and the geographical origins of AJs and Yiddish are some of the longest standing questions in history, genetics, and linguistics. In our previous work we have identified “ancient Ashkenaz,” a region in northeastern Turkey that harbors four primeval villages whose names resemble Ashkenaz. Here, we elaborate on the meaning of this term and argue that it acquired its modern meaning only after a critical mass of Ashkenazic Jews arrived in Germany. We show that all bio-localization analyses have localized AJs to Turkey and that the non-Levantine origins of AJs are supported by ancient genome analyses. Overall, these findings are compatible with the hypothesis of an Irano-Turko-Slavic origin for AJs and a Slavic origin for Yiddish and contradict the predictions of Rhineland hypothesis that lacks historical, genetic, and linguistic support (Table 1).

## AUTHOR CONTRIBUTIONS

EE conceived the paper. MP processed the ancient DNA data. RD and EE carried out the analyses. EE co-wrote it with PW and RD. All authors approved the paper.

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## SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: <http://journal.frontiersin.org/article/10.3389/fgene.2017.00087/full#supplementary-material>

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The reviewer PF declared a past co-authorship with one of the authors to the handling Editor, who ensured that the process nevertheless met the standards of a fair and objective review.


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Print 

## Genomics



'Genome of European Jews is a tapestry of ancient populations' Photo: Jupiter

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### Debate on European Jews' origin settled?

**Gene study says Jews of European descent are mix of ancestries, with many hailing from tribes in Caucasus who converted to Judaism and created empire that lasted half a millennium**  
AFP

Jews of European origin are a mix of ancestries, with many hailing from tribes in the Caucasus who converted to Judaism and created an empire that lasted half a millennium, according to a gene study.

The investigation, its author says, should settle a debate that has been roiling for more than two centuries.

Jews of European descent, often called Ashkenazim, account for some 90% of the more than 13 million Jews in the world today.

According to the so-called Rhineland Hypothesis, Ashkenazim descended from Jews who progressively fled Palestine after the Muslim conquest of 638 AD.

They settled in southern Europe and then, in the late Middle Ages, about 50,000 of them moved from the Rhineland in Germany into eastern Europe, according to the hypothesis.

But detractors say this idea is implausible.

Barring a miracle – which some supporters of the Rhineland Hypothesis have in fact suggested – the scenario would have been demographically impossible.

It would mean that the population of Eastern European Jews leapt from 50,000 in the 15th century to around eight million at the start of the 20th century.

That birth rate would have been 10 times greater than that of the local non-Jewish population. And it would have occurred despite economic hardship, disease, wars and pogroms that ravaged Jewish communities.

Seeking new light in the argument, a study published in the British journal *Genome Biology and Evolution*, compares the genomes of 1,287 unrelated individuals who hail from eight Jewish and 74 non-Jewish populations.

Geneticist Eran Elhaik of the Johns Hopkins School of Public Health in Baltimore, Maryland, trawled through this small mountain of data in search of single changes in the DNA code that are linked to a group's geographical origins.

Such telltales have been used in past research to delve into the origins of the Basque people and the pygmy people of central Africa.

### Further Research

#### Genetic map of Jewish Diasporas defined / Ynetnews

Findings of new study support historical record of Middle Eastern Jews settling in North Africa during Classical Antiquity, proselytizing and marrying local populations, forming distinct populations that stayed largely intact for more than 2,000 years

[Full story](#)



Among European Jews, Elhaik found ancestral signatures that pointed clearly to the Caucasus and also, but to a smaller degree, the Middle East.

The results, said Elhaik, give sound backing for the rival theory – the "Khazarian Hypothesis."

### **Backed by archaeological findings**

Under this concept, eastern European Jews descended from the Khazars, a hotchpotch of Turkic clans that settled the Caucasus in the early centuries AD and, influenced by Jews from Palestine, converted to Judaism in the 8th century.

The Judeo-Khazars built a flourishing empire, drawing in Jews from Mesopotamia and imperial Byzantium.

They became so successful that they sent offshoots into Hungary and Romania, planting the seeds of a great Diaspora.

But Khazaria collapsed in the 13th century when it was attacked by the Mongols and became weakened by outbreaks of the Black Death.

The Judeo-Khazars fled westwards, settling in the rising Polish Kingdom and in Hungary, where their skills in finance, economics and politics were in demand, and eventually spread to central and western Europe, according to the "Khazarian Hypothesis."

"We conclude that the genome of European Jews is a tapestry of ancient populations including Judaized Khazars, Greco-Roman Jews, Mesopotamian Jews and Judeans," says Elhaik.

"Their population structure was formed in the Caucasus and the banks of the Volga, with roots stretching to Canaan and the banks of the Jordan."

Many things are unknown about the Khazars, whose tribal confederation gathered Slavs, Scythians, Hunnic-Bulgars, Iranians, Alans and Turks.

But, argues Elhaik, the tale sketched in the genes is backed by archaeological findings, by Jewish literature that describes the Khazars' conversion to Judaism, and by language, too.

"Yiddish, the language of Central and Eastern European Jews, began as a Slavic language" before being reclassified as High German, he notes.

Another pointer is that European Jews and their ancestral groups in the Caucasus and Middle East share a relatively high risk of diseases such as cystic fibrosis.

The investigation should help fine-tune a fast-expanding branch of genomics, which looks at single-change DNA mutations that are linked with inherited disease, adds Elhaik.

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## DNA study reveals 130,000 Hungarians are at least 50% Jewish

*At least 7.6% of 4,981 people living in Hungary who took MyHeritage DNA test found to have 25% or more Ashkenazi Jewish ethnicity*

By [ILANIT CHERNICK](#)

**Published:** AUGUST 14, 2019 04:04

A MyHeritage DNA study has revealed that Hungary's population has the highest percentage of Jewish ancestry outside of Israel. In total, 100 countries were included in the research.

At least 7.6% of the 4,981 people living in Hungary who took the DNA test were found to have at least 25% or more Ashkenazi Jewish ethnicity.

"This is equivalent to having at least one grandparent who is fully Ashkenazi Jewish," MyHeritage said. "This is a significantly higher percentage than the 3.5% observed in DNA test-takers living in the USA and 3% in Canada."

Based on UN estimates, Hungary's population is 9.7 million.

"MyHeritage discovered that 4.2% of DNA test-takers in Hungary have 50% or more Ashkenazi Jewish ethnicity," it added.

The online genealogy platform worked on this research together with Dr. Daniel Staetsky, director of the European Jewish Demography Unit at the London-based Institute for Jewish Policy Research.

The study also found that 12.5% of the people tested in Hungary had 10% or more Ashkenazi Jewish ethnicity, compared to only 4.7% of people in the USA and 4.0% in Canada.

Staetsky explained that, "commercial genetic testing is an activity where the most educated and well-to-do classes of a society will be over-represented.

Bearing this in mind, he said that, "the number of people with 50% or more Ashkenazi Jewish ethnicity in Hungary amounts to 130,000."

MyHeritage explained that this is significantly higher than recent estimates. Official statistics set the number of Jews in Hungary at only 10,965, according to the 2013 national census.

MyHeritage explained that this is significantly higher than recent estimates. Official statistics set the number of Jews in Hungary at only 10,965, according to the 2013 national census.

According to Hebrew University of Jerusalem demographer, Prof. Sergio Della Pergola, 47,500 people in Hungary, or 0.49% of the population, identify as Jewish.

But sociologist Andras Kovacs of the Central European University in Budapest estimated “a range of 73,000 to 138,000 people with at least one Jewish parent” in Hungary.

“This outcome lends credibility to both traditional demographic methods and to the novel estimates based on genetic testing,” Staetsky said. “The MyHeritage data is fascinating and eye-opening,” he said, adding that this is a new way to understand Jewish demography.

“Nothing prepared me for the realization that in my lifetime, the very textbook of Jewish demography will have to be rewritten, that it will happen pretty much overnight and that I will play a role in rewriting it,” he explained. “So far, in figuring out how many Jews are out there, demographers have relied on self-declaration of people as Jews. This method brought and still brings good results, but it is not without shortcomings.” Staetsky said that as scientists, “We are committed to improving the validity and reliability of our estimates. Results of commercial genetic testing allow us to do exactly that – we have moved up a gear in demographic science.”

The family research platform stressed that “beyond Hungary, a challenging factor for demographers examining the total global Jewish population has been Jews’ concealment of their identity before and during the Holocaust.

“Even after the Second World War, it has long been suspected that many were either discouraged from revealing their Jewish identity and have kept it hidden, or have been completely unaware of their Jewish ancestry,” it said.

MyHeritage made it clear that this study is solely based on the number of Hungarians who have Jewish ancestors as determined by genetic testing, and without regard to the determining principles of Jewish religious law, which is based on the maternal line.

Several Hungarian clients who discovered that they had Jewish ancestry through the MyHeritage DNA test shared both shock and surprise.

Gyula Nemeth, a 41-year-old illustrator from Budapest, said he knew that his grandfather was Jewish and assumed that he’d see some of that in his results.

“But I was surprised to actually get 25% Ashkenazi Jewish ethnicity – exactly as I knew I have.” Nemeth knew that his maternal grandfather was Jewish, but he “never lived a Jewish life,” and neither did his great-grandparents. Nemeth’s grandfather avoided deportation to Auschwitz by escaping the Nazis with forged papers. “Antisemitism is becoming very common these days,” he said, adding that “I hope that research like this might change the attitude of people who are prejudiced.”



József Belányi, also from Budapest, said that he had received a MyHeritage DNA test as a present, “to complement my family tree research.” He explained that among the different aspects of his genealogical research, he was particularly interested in a family legend that there were Jewish ancestors. His DNA confirmed this family lore, and revealed that he was 37.6% Ashkenazi Jewish. “Suddenly this legend became reality,” he said. “But the results were even more interesting because they indicate that my Jewish heritage is much closer than I thought. “To me, it’s not a sin to be partly Jewish, and I am actually going to ask my parents to take the DNA test, so we can understand and do further research,” he added.

A Roman Catholic in his 70s, also from Budapest, who only identified himself as A.K., discovered through his MyHeritage DNA results that he has 98% Ashkenazi Jewish heritage, with the remaining percentage being Sephardi Jewish. “Finding out I am 100% Jewish is a surprise, so I am now just trying to digest it,” he said. “No one in my family talked about their Jewish origins, because it was more like a family legend. I am holding my parents responsible for not raising me as Jewish. But on the other hand, I can understand their decision because my father was in a labor camp in Russia.”

For many years, demographers believed that the countries outside of Israel with the highest proportion of Jewish inhabitants are, in order, the USA, Canada, France, Hungary and Uruguay. However, this study has challenged these assumptions, discovering that after Israel, the top countries in terms of significant Ashkenazi Jewish ethnicity were Hungary and Russia, followed by Argentina, South Africa, Ukraine and then the US. This is based on countries with a sufficiently large DNA sample sizes.

The full study will be released by MyHeritage and Staetsky at a later date.

## How DNA traced the Ashkenazic Jews to northeastern Turkey

Eran Elhaik is a lecturer at the University of Sheffield in the UK. He is interested in population genetics, molecular evolution, paleo-genomics and biogeography. -Edited by Sam Haselby  
[<https://aeon.co/ideas/how-dna-traced-the-ashkenazic-jews-to-northeastern-turkey>]

Northeastern Turkey has not received much attention from scholars of Jewish history. It was not an area of dispute nor a region known to host famous schools such as the Jewish academies (*yeshiva*) in Babylon, where the Talmud was written. There was only fragmented historical records of Jewish settlement in this area. But genetics can now track DNA 1,500 years into the past, with village-level geographical accuracy. This accuracy was made possible with Geographical Population Structure (GPS) technology, which works in a similar way to the satnav geolocation system, and uses DNA instead of satellites to predict the most recent geographical origins of a DNA sample. To study the geographical origins of Yiddish, the native language of Ashkenazic Jews, my lab at the University of Sheffield has applied this GPS technology to the DNA of Ashkenazic Jews. Surprisingly, the results led us to northeastern Turkey, a finding that contradicts the orthodox view that the Ashkenazic Jewry emerged in Germany. [Go here for the study <https://academic.oup.com/gbe/article/8/4/1132/2574015>]



**GPS positioned nearly all Ashkenazic Jews (AJs) on the southern coast of the Black Sea in northeastern Turkey adjacent to the southern border of ancient Khazaria.** There we located four primeval villages that bear names that may derive from “Ashkenaz”—**İskenaz** (or Eskenaz) at (40°9’N, 40°26’E) in the province of Trabzon (or Trebizond), **Eskenez** (or Eskens) at (40°4’N, 40°8’E) in the province of Erzurum, **Ashanas** (today Üzengili) at (40°5’, 40°4’E) in the province of Bayburt, and **Aschuz** (or Hassis/Haza, 30 B.C.–A.D. 640) ( Bryer and Winfield 1985 ; Roaf et al. 2015 ) in the province of Tunceli—all of which are in close proximity to major trade routes. These names might be derived from the word ‘Ashkenaz’, and are **unique to northeastern Turkey**. There are no other such place names anywhere in the world. However, this area had a rich history.

Until the first century BCE, the region was part of the Greek Kingdom of Pontus. It had been established by Greek settlers in the early first millennium. At that time, Iranian Jews were the largest Jewish community in the world. They held a monopoly on trading on the Silk Roads, and were known to Judaise the people they encountered.

Traces of the Iranian conversion of the Ashkenazic population can be found in the genetic similarity of the two populations, the residues of Iranian in Yiddish, and by certain genetic disorders common to Iranian and Ashkenazic people today, which is of crucial importance to medical research. These findings are of great interest to historians, geneticists, linguists and the large community of genealogists.

But genealogy was not always a popular hobby. It was not until the early civil rights movement of the late 19th century that non-elites began researching their ancestry and celebrating their newly found identities. Before then, genealogy had been something elites used to legitimate political rule.

Digital technology has recently improved the accessibility of genealogical records. But even in the best-case scenario, genealogical records could take us back only about 500 years. Now, genetic research allows us to establish findings far beyond five centuries.

Genetic tools for genealogical research initially consisted of classifying individuals into paternal and maternal haplogroups, each prevalent in a different part of the world (eg, western Europe or Oceania). However, these haplogroups allowed for only very imprecise chronological placement or identification within the past 2,000 to 20,000 years. By 2003, new genetic genotyping technology enabled a newly comprehensive – and affordable – analysis. This new technique drew on the remaining 22 chromosomes (called autosomal), which reveal a great deal more information than techniques based only on haplogroups. Analysis based on autosomal characteristics tells us more about the genome, allowing broader and more specific inferences of the past. Comprising of more than 90 per cent of our genomes, autosomal chromosomes enable major advances in genealogical research. Since they are inherited from both parents, they also preserve their genetic signatures, allowing us to learn about our family’s genetic history.

It is important to bear in mind that genealogical research into the past can answer only certain questions. Importantly, it cannot tell the significance for our time of genealogical findings. Interpreting the meaning of millions of mutations is also a different kind of challenge from interpreting the meaning of a 300-year-old diary record of a remote ancestor who had 10 pigs and five roosters. Biogeography aims to provide contextual meaning by tracing both the geographical origin of DNA and the particular time it originated in the population. As scientists' understanding of genealogical mutations has improved, so too have we been able to develop biogeographical tools to trace the origin of the DNA with more precision.

And so, in 2014, we developed GPS, capable of tracing the geographical origins of individuals with an accuracy, in the best-case scenario, down to village of origin. At present, the technology works best for no more than 1,000 years in the past. Beyond that, the results become more imprecise and speculative.

But can GPS help generate new knowledge? Can it illuminate the history of past cultures and languages? In 2016, we attempted to answer this question by applying GPS to the genomes of nearly 400 Ashkenazic Jews. Half of them came from families who speak solely Yiddish. The language is at least 1,100 years old yet, even after centuries of research, its geographical origins remain uncertain. But since geography and genetics are connected with language (as evidenced by GPS), we surmised that predicting the origin of Yiddish-speaking Ashkenazic Jews would also indicate where Yiddish originated. Linguistic studies had pointed at either Germany or the western Khazarian Empire - in modern-day Ukraine - as potential points of origins.

Our research, however, led us to conclude that the origin of the Ashkenazic DNA signature derives from the encounter of Iranians Jews, Greeks and other peoples in northeastern Turkey.

This region might hold the answers to the origins of the Ashkenazic culture, customs and rituals, but it was never systematically scrutinized for ancient Jewish remains. We hope that the findings enabled by our GPS technology will stimulate further investigation. Follow-up research can help provide more answers to one of the most mysterious and secretive chapters in history: the ancient origin of the Ashkenazic Jewish community and the Yiddish language.