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The origin of East European Ashkenazim via a southern route

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Abstract: In der Literatur werden zwei Populationen als Vorfahren der osteuropäischen Aschkenazim erwähnt: Deutsche Juden und Chasaren. Ein deutscher Ursprung ist demografisch nicht möglich, eine Chasarische Herkunft kann ebenfalls nicht nachgewiesen werden und ist auch nicht plausibel. Der Verfasser schlägt das Denkmodell vor, dass die Vorfahren der osteuropäischen Aschkenazim zunächst um den Kimmerischen Bosporus angekommen sind, vorwiegend aus Anatolien und Südeuropa. Er führt Beweise an, dass es schon vor der Zeitwende eine jüdische Anwesenheit auf der Krim gab, die bis zum 7. Jahrhundert dauerte. Hinzu kamen während des 7. und 8. Jahrhunderts noch Juden aus Byzanz. Diese These wird unterstützt durch genetische Beweise, die einen Unterschied zwischen west- und osteuropäischen Aschkenazim zeigen. Der Verfasser erklärt die Umwandlung von einer Slawisch zu einer Yiddisch sprechenden jüdischen Population mit dem »language-cum-ethnic shift« Modell nach Ehret.

Introduction

The origin of Ashkenazi Jewry has been a controversial subject. This is not only due to historical, but also to demographic and genetic aspects. There are two specific events, the switch from Judeans to Jews, pertaining to all of today's Jews, and the change of the definition of Ashkenazim, that should be taken into account when the origin of Ashkenazim is discussed. Insufficient light has been shed on both of them, if they have been mentioned at all in the literature pertaining to the current subject, while both have genetic implications.

Before roughly the second century CE, we are dealing with Judeans, inhabitants of Judea, who are supposed to be the ancestors of the Jews. A person with a Judean father was a Judean.¹ The woman could be a non-Judean, as she became a member of the man's clan. We find quite a few examples in the Bible of »for-

¹ SHAYE J. D. COHEN: The beginnings of Jewishness: boundaries, varieties, uncertainties. Berkeley 1999, p. 266.

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eign« women.² One may consider the word »Judean« as indicating a toponym or a nationality.

Around the 2nd century CE, the rabbis decided to switch to »Jews«.³ A Jew being someone whose mother has the Jewish religion, *but also*, and this is essential, someone who converted to Judaism. Conversion – for whatever reason – is important because in those days, and also later until the Church became strong enough to implement heavy penalties imposed on converts to Judaism, conversion to Judaism was very easy. Actually, it was considered a good deed (Hebrew: *mitsva*) to convert people to Judaism.⁴ Thus, the rabbis introduced a cultural-religious community whose members did not necessarily have to originate from the Land of Israel. They abandoned a system based on men and nationality, and replaced it by a system based on women plus a non-measurable inflow of converts. The rationale for the switch is unknown.⁵ The rabbinical definition is applied in Israel as well.

For many centuries it has been hard to convert to Judaism, and this led scientists to conclude that Jews hardly intermarried with non-Jews. This conclusion is rather strange in view of the fact that today's Jews physically (phenotypically) resemble the populations in the midst of which they live. Jews from China, India, Ethiopia, and Europe look like non-Jewish Chinese, Indians, Ethiopians, and Europeans, respectively.

In order to differentiate between the differently defined Judeans and Jews, »Judeans« will be used for the period before roughly the second century CE because it agrees with the word the Greeks used, for example συναγωγή των Ἰουδαίων (the community of the Judeans). The same holds true for the Roman literature, for example *Iudaeorum seditio* (the uprising of the Judeans). The use of »Judeans« or »Jews« in this paper has nothing to do with the cultural aspects involved. It only pertains to the composition of the group. The Romans considered Judeans and Jews as a cultural group because of their religion, but used the geographical name for both of them. A similar use of words is found in the Netherlands where Dutch-born children of Moroccan immigrants are still called Moroccans by many people. The precise date is not important either. If the rab-

2 CATHERINE HEZSER: Slavery and the Jews. In: The Cambridge world history of slavery. Vol. 1: the ancient Mediterranean world. Ed. by KEITH R. BRADLEY and PAUL CARTLEDGE. Cambridge 2011, pp. 438–455.

3 Cohen, The beginnings of Jewishness (see note 1), p. 263.

4 MOSHE SAMET: Hagiur be-me'ot har'ishonot lasfirah [Conversions to Judaism during the first centuries CE; text in Hebrew]. In: Yehudim veyahadut bimey bayit sheni, hamishna vehatalmud. Ed. by AHARON OPPENHEIMER, ISAIA GAFNI and MENAHEM STERN. Jerusalem 1993, pp. 316–343.

5 COHEN, The beginnings of Jewishness (see note 1), pp. 285–307.

binical ruling would have been accepted later, for example in some remote areas, it would only have been easier for Judean/Jewish men to marry foreign women, as had been the custom for centuries. They would still be seen as belonging to a cultural group. The problem is only the genetic aspects of the rabbinical switch, leading from a geographically well-defined group to an ill-defined group.

Around the 10th century CE, rabbis, for unknown reasons, introduced the name *Ashkenaz* for Germany. As a result, German Jews are called Ashkenazim. The word *Ashkenaz* appears in Jeremiah 51:27 as a kingdom, together with the kingdoms of Minni and Ararat. It is not Hebrew for German. German Jews had specific rites (Hebrew: *nusah ashkenaz*) that in time were followed by Jews in other European countries. Ashkenazim are thus not only descendants of German Jews. The present situation is such that Jews following Ashkenazi rites are called Ashkenazim.⁶ The demographic data will show that this is correct. Thus, Ashkenazi Jews are not *a priori* a genetically homogeneous group because there are Ashkenazim by descent (originally from Germany) and Ashkenazim by rites (not from Germany).

In this publication Eastern Europe is defined as the area pertaining to the calculation of the size of the East European Jewish population in 1897 (the year of the Russian census): the Russian part of the Pale of Settlement, European Russia outside the Pale, the 10 annexed Polish provinces, Galicia, and the former German eastern regions (ehemalige deutsche Ostgebiete), East Prussia, West Prussia, Pomerania, Posen, and Silesia.⁷

The generally accepted view about the origin of East European Ashkenazim tells us that due to the pogroms during the Crusades, the plague, and the expulsions from the cities, German Ashkenazim fled to Poland and Lithuania, and formed the nucleus of East European Jewry. The origin from Germany has as a consequence that the number of East European Ashkenazim in 1500 must have been low, because there weren't that many Jews in Germany during this period. This is exactly why one finds the following small Jewish population sizes in 1500: 30,000,⁸ and 10,000 to 15,000.⁹ According to Baron the 30,000 Jews increased to

6 MARK G. THOMAS, MICHAEL E. WEALE, ABIGAIL L. JONES, et al.: Founding mothers of Jewish communities: geographically separated Jewish groups were independently founded by very few female ancestors. In: *American Journal of Human Genetics* 70 (2002), pp. 1411–1420.

7 JITS VAN STRATEN: Early modern Polish Jewry: The Rhineland hypothesis revisited. In: *Historical Methods* 40 (2007), pp. 39–50.

8 SALO W. BARON: *A social and religious history of the Jews*. Vol. 16: Poland-Lithuania, 1500–1650. New York 1957, p. 4.

9 BERNARD D. WEINRYB: *The Jews of Poland: a social economic history of the Jewish community in Poland from 1100–1800*. Philadelphia 1972, p. 32.

450,000 in 1650,¹⁰ Weinryb's Jewish population increased to 200,000 in 1650.¹¹ DellaPergola modified the size of the Jewish population slightly to 50,000 in 1490, but also his population size remains low.¹² Most geneticists dealing with Ashkenazi Jewry follow DellaPergola's population sizes in 1490 and later.¹³ However, not every historian or linguist agrees with a German origin. We are actually dealing here with a difference in historiography between German Jewish historians (e.g. the authors of *Germania Judaica*) and East European Jewish historians (e.g. Baron, Weinryb, Ankori, Stampfer). Examples of linguists who, on demographic grounds, disagree with a German origin are Mieses and King.¹⁴ They are not quoted in this respect. There is no evidence for migrations from Germany during the pogroms, German Ashkenazim remained mostly in their own country.¹⁵ There is no evidence for a slow permanent migration of Jews to Eastern Europe up to ca. 1650 either.

The population increases between 1500 and 1650 lead to exponential growth rates of 1.7 to 2.0 per cent. The small population sizes and their growth rates

10 BARON, A social and religious history of the Jews (see note 8), p. 207.

11 WEINRYB, The Jews of Poland (see note 9), p. 197.

12 SERGIO DELLAPERGOLA: »Some fundamentals of Jewish demographic history«. In: Papers in Jewish demography 1997. Ed. by SERGIO DELLAPERGOLA and JUDITH EVEN. Jerusalem 2001, pp. 11–33.

13 RICHARD M. GOODMAN: Genetic disorders among the Jewish people. Baltimore, London 1979, pp. 5–17; NEIL RISCH: Molecular epidemiology of Tay-Sachs disease. In: *Advances in Genetics* 44 (2001), pp. 233–252; THOMAS, Founding mothers of Jewish communities (see note 6); DORON M. BEHAR, DANIEL GARRIGAN, MATTHEW E. KAPLAN, et al.: Contrasting Patterns of Y Chromosome Variation in Ashkenazi Jewish and Host Non-Jewish European Populations. In: *Human Genetics* 114 (2004), pp. 354–65; MONTGOMERY SLATKIN: A population-genetic test of founder effects and implications for Ashkenazi Jewish diseases. In: *American Journal Human Genetics* 75 (2004), pp. 282–293; AVSHALOM ZOOSMANN-DISKIN: The origin of Eastern European Jews revealed by autosomal, sex chromosomal and mtDNA polymorphisms. In: *Biology Direct* 5 (2010), p. 57; HARRY OSTRER: Legacy: a genetic history of the Jewish people. New York 2012; PIER FRANCESCO PALAMARA, TODD LENCZ, ARIEL DARVASI, et al.: Length distributions of identity by descent reveal fine-scale demographic history. In: *American Journal of Human Genetics* 91 (2012), pp. 809–822.

14 MATTHIAS MIESES: *Die Jiddische Sprache*. Berlin, Vienna 1924; ROBERT D. KING: Migration and Linguistics as Illustrated by Yiddish. In: *Reconstructing Languages and Cultures*. Ed. by EDGAR C. POLOMÉ and WERNER WINTER. Berlin, New York 1992, pp. 419–439.

15 ISMAR ELBOGEN, ARON FREIMANN and HAIM TYKOCINSKI: *Germania Judaica*, [I:] Von ältesten Zeiten bis 1328. Breslau 1934; ZVI AVNERI: *Germania Judaica* II: Von 1238 bis zur Mitte des 14. Jahrhunderts. Tübingen 1968; ARYE MAIMON: *Germania Judaica* III 1350–1519. Vol. 1: Ortschaftsartikel Aach–Lychen. Tübingen 1987; ARYE MAIMON, MORDECHAI BREUER, and YACOV GUGGENHEIM: *Germania Judaica* III 1350–1519. Vol. 2: Ortschaftartikel Mährisch-Budwitz–Zwolle. Tübingen 1995; JITS VAN STRATEN: Jewish migrations from Germany to Poland: the Rhineland hypothesis revisited. In: *The Mankind Quarterly* 44 (2004), pp. 367–383.

have become almost a dogma in East European Jewish history. The small population sizes are defended by Jewish historians and geneticists, despite the fact that according to experts in the field of demography, there were no population increases of 1 per cent or more in Europe before 1800. Also DellaPergola's East European Jewish population sizes lead to exponential growth rates of more than 1 per cent between 1500 and 1800. As these growth rates have become a hot issue, they warrant a more extensive discussion.

A first question that might arise is, if the Jewish growth rates are not plausible, how come almost no historian criticized them? There are two answers:

- a. Baron and Weinryb showed the Jewish population increase only. If they had shown the growth rate of the total population between 1500 and 1650, 0.22 per cent, the reader probably would have become suspicious because the Jewish population lived under the same environmental conditions as the non-Jewish population. Figure 1 shows how unlikely the Jewish increases are.
- b. As said before, these population sizes and growth rates have become more or less a dogma.

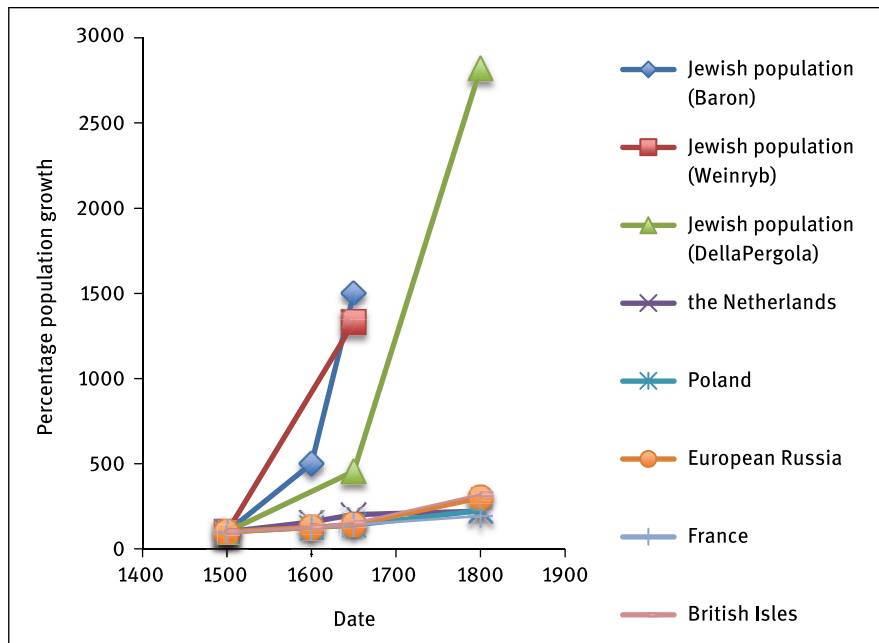


Fig. 1: Jewish population growth in the Polish-Lithuanian Commonwealth, 1500–1650, according to Baron (1957–1976b) and Weinryb (1972, 32) and 1500–1800, according to DellaPergola (2001, 22); population growth of the Netherlands, Poland, European Russia, France, and the British Isles, 1500–1800 (1500=100 per cent; based on van Straten, 2007).

The situation becomes even more incomprehensible when one realizes that there are no reliable numerical data about the size of the Jewish population in Eastern Europe before the census of 1897. Russian non-Jewish historians like Novoselsky and Kabuzan who dealt with Jewish population increases don't have numerical evidence for their high Jewish growth rates either.¹⁶ As they don't add anything to the discussion, they will not be discussed here. Most arguments used to defend the high growth rates between 1500 and 1800 were refuted in an earlier publication.¹⁷ One of these arguments, the use of model life tables, should be explained a bit more extensively, in addition to the arguments used in an earlier publication.¹⁸ DellaPergola defends the exceptionally high growth rates by referring to the West model life tables of Coale and Demeny because »they better fit populations with relatively low child mortality.«¹⁹ The West models »were based on mortality experience recorded in populations known to have relatively good vital statistics [...] the tables underlying the ›West model‹ are a residual collection after the ›East‹, ›South‹, and ›North‹ tables have been removed.«²⁰ Half the number of life tables underlying the West model are from the 20th century (52 per cent). The remaining ones are taken from the period between 1870 at the earliest and 1960 at the latest. The environmental conditions, in the broadest sense of the word, before 1800 were so much worse than those in the 20th and late 19th centuries that one cannot use the model for the determination of growth rates between 1500 and 1800. In addition, the registration of vital data in Russia was so unreliable that there are no underlying life tables from Russia in the East model. Finally, there are no reliable vital statistics of the Jewish community in Eastern Europe, including child mortality before 1800. Thus, a model is chosen according to some preconceived idea that lacks the necessary vital statistics, and that results in implausible growth rates of one per cent or more. It is amazing that these growth rates that are two to four times as high as those of the total population are accepted by historians (and geneticists) without question.

16 B. BINSTOCK and SERGEY ALEKSANDROVICH NOVOSELSKY: *Materialy o Estestvennom Dvizhenii Evreiskogo Naseleniya Evropeiskoi Rossii* (in Russian), (Materials on the natural movement of the Jewish Population of the European Russia). Petrograd, Russia 1915; VLADIMIR MAKSIMOVICH KABUZAN: *Narody Rossii v pervoi polovine XIX v.: Chislennost i etnicheskij sostav* (in Russian) (Peoples of Russia in the first half of the XIX century: Population and Ethnic Composition). Moscow 1992.

17 VAN STRATEN, Early modern Polish Jewry (see note 7).

18 ANSLEY JOHNSON COALE and PAUL DEMENY: Regional model life tables and stable population. Princeton 1966; VAN STRATEN, Early modern Polish Jewry (see note 7).

19 DELLAPERGOLA, Some fundamentals of Jewish demographic history (see note 12), p. 22.

20 COALE and DEMENY, Regional model life tables (see note 18), p. 14.

There is just one more argument used to make the high growth rates plausible that should be mentioned. Stampfer defends a Jewish annual growth rate of 1.7 per cent in Eastern Europe between 1500 and 1700 through a comparison with the high growth rates of the ancestors of the French Canadians.²¹ »These numbers [on which the growth rates are based] do not *prove* that the Jewish population grew at a similar rate. They show only that such growth is possible.« Obviously such growth is possible, but not under completely different, worse environmental conditions (the same holds for the Afrikaners he mentions). Anthony Wrigley of Cambridge University in response to a question about a growth rate of more than 1 per cent before 1800 (personal communication):

It was very rare to reach such a rate in pre-industrial times. There are a few exceptions. Rates of growth in colonial North America were such as to double the population in about 30 years, a combination of high fertility brought about by early marriage and low mortality with the bulk of the population widely scattered at low densities, and with unlimited new land to be taken up. But back in Europe rates of increase of 1 % p. a. were rare and not long sustained. If the Jewish population which you have in mind was largely urban such a rate is even less plausible. Most towns and cities were dependent on substantial in-migration flows even to maintain their numbers.

The Jewish population in Eastern Europe was indeed mainly urban. The problem with historians who allow for these kinds of high growth rates is that they do not seem to realize that there is a strong relationship between environmental conditions and growth rate.

Further on, Stampfer mentions that East European Jewry originated mainly from the Czech lands, Silesia as well as the eastern German lands.

[...] about three thousand Jews lived in the Czech lands in the mid-sixteenth century [...] These numbers mark the upper limit as to how many migrants could have come from this particular country. The Jewish population of Prague and in the Czech lands grew in the sixteenth and seventeenth centuries. Therefore only a small minority of the population could have migrated to the east [...] this would have been enough.

Does this hypothesis make a migration from western or central Europe more acceptable? In table 1 the development of East European Jewry is proposed in relation to the development of the total population.

21 SHAUL STAMPFER: Violence and migration of Ashkenazi Jews to Eastern Europe. In: Jews in East European borderlands: essays in honor of John D. Klier. Ed. by EUGENE M. AVRUTIN and HARRIET MURAV. Boston 2012, p. 136.

Tab. 1: The total and Jewish population in Russia and Poland: 0–1800.²²

Year	Total population		Jewish population		
	Number	Percentage growth	Number (same growth as the total population)	Number (fast growth)	Percentage (of the total population)
1800	48,193,000		2,050,000		4.3
		0,6			
1700	26,000,000		1,108,100	919,399 ^a	3.5
		0.3			
1600	20,000,000		852,400	705,800	3.5
		0.2			
1500	16,000,000		681,900	467,400	2.9
		0.2			
1000	5,200,000		221,400	56,300 ^b	1.1
		0.08			
0	2,450,000		105,400	3,700	0.2

a Growth of Jewish population_{1700–1800}/1.0062¹⁰⁰ (growth of total pop._{1700–1800}) = 1.013¹⁰⁰ (growth of Jewish pop._{1800–1900})/1.011¹⁰⁰ (growth of total pop._{1800–1900}) = 2.2. Between 1700 and 1800, the Jewish population increased 2.2 times.

b Growth of Jewish pop._{1000–1500}/1.0023⁵⁰⁰ (growth of total pop._{1000–1500}) = 1.013⁵⁰⁰ (growth of Jewish pop.)/1.011⁵⁰⁰ (growth of total pop.) = 8.3. Between 1000 and 1500, the Jewish population increased 8.3 times.

The population sizes of the Jewish population at different years differ slightly from those in an earlier table.²³ According to Livi-Bacchi, estimates of population sizes in 1500 may be off by 20 per cent.²⁴ Assuming that this also holds for 1550,

²² Total population according to ANGUS MADDISON: *The world economy: a millennial perspective*. Paris 2002, p. 232; Jewish population according to my own calculation.

²³ VAN STRATEN, *Early modern Polish Jewry* (see note 7).

²⁴ MASSIMO LIVI-BACCI: *The population of Europe: A history*. Translated by Cynthia de Nardi Ipsen and Carl Ipsen. Oxford 1999, p. 191.

the number of East European Jews would be $574,360 \pm 114,870$. This would leave us with 459,500 or 689,300 East European Jews in 1550, assuming fast growth. Critics of these calculations will not be interested in the upper limit, not to mention the population size by slow growth. All the 459,500 ancestors and their descendants are needed to end up with the 2 million Jews in Eastern Europe in 1800.

As to Silesia and the eastern German lands, Silesia is part of the former German territories. As to the eastern German lands, there are two options: these regions are part of Eastern Europe, or they are not part of Eastern Europe. In the former case, we are dealing with a migration within Eastern Europe, and we have to ask where did the Jews in these territories come from. In the second case one has to know the size of the migration to Eastern Europe. In either case Stampfer's reference for the migration *from* these territories, the Ph. D. thesis of Bürstenbinder,²⁵ is of no help because he does not provide information about the number of Jews in these territories, where they came from, or where they went to.

Let us assume, for the sake of argument, that all of these 459,500 would have moved to Eastern Europe in 1550. It doesn't make a difference as to the exponential growth rate whether they all go at once, or via a continuous slow migration, as long as all the descendants contribute to the 2 million. In 1550, the size of the Jewish population in Germany was somewhere between 51,200 and 86,000 with fast and slow growth, respectively.²⁶ To the best of my knowledge, there are no reliable data about the size of the Jewish population in the former German territories or about their migrations. The maximum number of German Jews that could have migrated is $86,000 - 51,200 = 34,800$. This would leave enough Jews in Germany to maintain a realistic growth rate of the German Jews. In addition, 3,000 Jews came from the Czech lands, and 421,700 or 651,500 must have come from the former German territories only if they are considered as not being part of Eastern Europe. These numbers cannot be taken seriously, and they become even larger when fewer Jews migrated from Germany. If only a small number of all these Jews would have migrated as Stampfer proposes, we would again end up with implausible exponential growth rates. His proposal does not make a migration from western or central Europe more acceptable.

Finally, Stampfer mentions that the basis for a Silesian origin are German surnames indicating a city, »that are rare enough to be noteworthy«. However, such a name does not necessarily mean that the bearer of the surname originated from that city. The name may be used because the bearer of the name had com-

25 JÜRGEN BÜRSTENBINDER: Judenschutz und Eigennutz. Auseinandersetzungen um die Juden an der Ostgrenze des Römisch-Deutschen Reiches im 13. und 14. Jahrhundert. Berlin 2010, pp. 233–250.

26 VAN STRATEN, Early modern Polish Jewry (see note 7).

mercial or other ties with that city.²⁷ To be certain one should carry out genealogical research about the name bearer.

A second phenomenon that must be mentioned with regard to Jewish population increases is the so-called Jewish demographic miracle of the nineteenth century.²⁸ This miracle refers to the fact that in both Eastern and Western Europe, the Jewish population increased twice as fast as the non-Jewish population. The miracle and the data of the earlier Ashkenazi population increases have one significant point in common: in neither case the growth rate of the non-Jewish population is shown. But the miracle has the advantage that it can be checked. There appeared to be no such miracle.²⁹ In regions with reliable Jewish population sizes, the Jewish population increased somewhat faster than the non-Jewish population, but not twice as fast (see also Silbergleit and Toury).³⁰

In view of the small number of Ashkenazim in other parts of Western (or Central) Europe during the Middle Ages, East European Ashkenazim cannot have originated there either. This assessment reinforces the existence of Ashkenazim by descent and Ashkenazim by origin, and is not appreciated by historians and geneticists who treat Ashkenazim as a genetically homogeneous group. Most of today's Ashkenazim in the United States, England, and Israel originate from Eastern Europe. This means that for good genetic research among Ashkenazim, thorough genealogical research is necessary. In most cases this is hard to accomplish, and normally the researcher doesn't get any further back than the grandparents. However, the fact that it may be difficult to get good genealogical data doesn't mean that therefore all Ashkenazim should be treated as a genetically homogeneous group.

27 ALEXANDER Dietz: *Stammbuch der Frankfurter Juden: geschichtliche Mitteilungen über die Frankfurter jüdischen Familien von 1349–1849 nebst eine Plane der Judengasse*. Frankfurt am Main 1907, p. 8; Hans BAHLOW: *Schlesisches Namenbuch*. Kitzingen/Main 1953, p. 78.

28 HAIM HILEL BEN-SASSON: *A history of the Jewish People*. London 1976, p. 790.

29 JITS VAN STRATEN and HARMEN SNEL: The Jewish »demographic miracle« in nineteenth-century Europe. In: *Historical Methods* 39 (2006), pp. 123–131.

30 HEINRICH SILBERGLEIT: *Die Bevölkerungs- und Berufsverhältnisse der Juden im deutschen Reich auf Grund von amtlichen Materialien*. I: *Freistaat Preussen*. Berlin 1930; JACOB TOURY: *Soziale und politische Geschichte der Juden*. In: *Deutschland 1847–1871. Zwischen Revolution, Reaktion und Emanzipation*. Düsseldorf 1977, pp. 9–27.

Khazars

The view that East European Jews are partly or mainly descendants of Khazars was proposed by a number of authors.³¹ Recently, also geneticist Elhaik favoured a Khazar ancestry.³² The subject is controversial. Most Jewish historians reject the idea. I will discuss only the article by Elhaik.

Elhaik is the first geneticist to compare the Khazar hypothesis with the Rhineland hypothesis, based on DNA research. His conclusions are as follows:

Our findings support the Khazarian Hypothesis depicting a large Caucasus ancestry along with Southern European, Middle Eastern, and Eastern European ancestries, in agreement with recent studies and oral and written traditions. We conclude that the genome of European Jews is a tapestry of ancient populations including Judaized Khazars, Greco-Romans Jews, Mesopotamian Jews, and Judeans and that 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.

The article rejects a mainly Middle Eastern Jewish origin, and thereby deviates from the conclusions by most geneticists.

Before discussing the historical/demographic assumptions on which Elhaik based his conclusions, I would like to mention three methodological problems with the article.

1. A major problem is the very low number of Jewish subjects, for example, one French, three Dutch, and three Austrian Jews.
2. The classification of the Dutch Jews is equivocal. First they are included with Central European Jews, in the admixture analysis they are grouped with East European Jews.
3. The three Austrian Jews are a demographic problem as well. It is known that before Galicia was annexed by Austria in 1772, the Jewish population in Austria proper amounted to about 8,000 people only. The Jewish population of Bohemia, Moravia, and Hungary, which then belonged to Austria as well, together amounted to 150,000. In 1772 another 200,000 to 250,000 Jews entered the area of Hungary, Bohemia, Moravia, and Austria. Also Russian

31 ERNEST RENAN: *Le Judaïsme comme race et comme religion*. Paris 1883; HUGO FREIHERR VON KUTSCHERA: *Die Chasaren*. Wien 1910; AVRAHAM N. POLAK: *Hitgayrut hakuzarim*. In: *Tsion* 6 (1941), pp. 106–112; ARHUR KOESTLER: *The Thirteenth Tribe*. New York 1976; SHLOMO SAND: *The invention of the Jewish people*. London 2009.

32 ERAN ELHAIK: The missing link of Jewish European ancestry: contrasting the Rhineland and the Khazarian hypotheses. In: *Genome Biology and Evolution* 5 (2012), pp. 61–74.

Jews ended up in Austria via Hungary, Bohemia, and Moravia.³³ Of whom are the three Austrian Jews descendants? Without genealogical research it is not known if we are really dealing with Austrian Jews or with originally East European Jews.

Discussion of Elhaik's assumptions

The following arguments were to a large extent published as a letter to the editor of the Jewish Review of Books, Summer 2014.

»The Khazar Empire existed already in the late Iron Age in the central-northern Caucasus«: The first time the Khazars appear in the literature, is in ca. 670 CE when they moved *south* into the region of the Samara river, about 1,000 km *north* of the Caucasus.³⁴ The aforementioned date is far past the late Iron Age (ca. 300 BCE), which means that it is unlikely that the Khazars had an empire in the Caucasus in the late Iron Age.

»The Khazars converted to Judaism in the 8th century«: King Bulan of the Khazars converted to Judaism in 861.³⁵ It is unknown how many Khazars joined in the conversion. Therefore, even apart from the wrong period, there is no evidence for Elhaik's assumption that *the* Khazars converted in any century.

»Caucasus Georgians and Armenians are considered as proto-Khazars«: Considering Georgians and Armenians as proto-Khazars is not based on genetic research, is not so formulated by the authors referred to by Elhaik, and is not in agreement with reliable information about Khazars. Genome-wide data from non-Jews living in the regions where the Khazars presumably lived, showed no evidence for a Khazar ancestry of East European Jews.³⁶ Kopelman et al. keep their options open because they detected some similarity of the Adygei. However,

33 JOSEF KARNIEL: Die Toleranzpolitik Kaiser Josephs II. Gerlingen 1986, pp. 104–105.

34 CONSTANTINE ZUCKERMAN: The Khazars and Byzantium – the first encounter. In: The world of the Khazars. New perspectives. Selected papers from the Jerusalem 1999 international Khazar colloquium hosted by the Ben Zvi Institute. Ed. by PETER B. GOLDEN, HAGGAI BEN-SHAMMAI, and ANDRÁS RÓNA-TAS. Leiden 2007, p. 425.

35 CONSTANTINE ZUCKERMAN: On the date of the Khazars' conversion to Judaism and the chronology of the kings of the Rus' Oleg and Igor: A study of the anonymous Khazar letter from the Genizah of Cairo. In: Revue des Études Byzantines 53 (1995), pp. 237–270.

36 NAAMA M. KOPELMAN, LEWI STONE CHAOLONG WANG, et al.: Genomic microsatellites identify shared Jewish ancestry intermediate between Middle Eastern and European populations. In: BMC Genetics 10 (2009), p. 80; DORON M. BEHAR, MAIT METSPALU, Yael BARAN, et al.: No evidence from genome-wide data of a Khazar origin for the Ashkenazi Jews. In: Human Biology Open Access Pre-Prints. Paper 41 (2013).

it is unknown if the ancestors of today's Adygei had any contact with Khazars. In addition, Costa et al. showed that the major K lineages found among Ashkenazi Jewry do not occur in the Caucasus (including Adygei), and the same holds for the minor Ashkenazi lineages. They concluded that »There is no evidence in the mtDNA pool to support the contention that lineages might have been recruited on a large scale from the North Caucasus [...] as would be predicted by the Khazar hypothesis.«³⁷

»Prior to their exodus, the Judeo-Khazar population was estimated to be half a million in size«: An estimate of half a million Jewish Khazars, or any estimate for that matter, has no factual basis.

»Because, according to both [the Khazar and Rhineland hypotheses], Eastern European Jews arrived in Eastern Europe roughly at the same time (13th and 15th centuries)«: The thirteenth century appears to refer to the collapse of the Khazar Empire. Elhaik seems to be unaware of the Jewish presence in the region of the Black Sea already from the beginning of the Common Era. There are no sources which show that these Jews disappeared during the first millennium CE. The 15th century refers to the expulsions of Jews from the bigger cities in Germany, which according to Elhaik amounted to 50,000 Jews. As mentioned earlier, the expulsions did not lead to migrations to Eastern Europe. Moreover, the number of 50,000 has no factual basis, and would have left virtually no Jew in Germany, while the expulsions continued during the 16th century.

»Following the collapse of their Empire [...] the Judeo-Khazars fled eastwards [...], settling in the rising Polish Kingdom and Hungary [...] and eventually spreading to Central and Western Europe«: Going east one arrives in Kazakhstan and Mongolia. Except for a few Jewish refugees from Khazaria in Toledo around the 11th century,³⁸ nothing is known about Jews migrating from Khazaria to Western Europe. Moreover, Jews from Khazaria do not necessarily have to be converted Khazars.

The historical and demographic inaccuracies by Elhaik together with the conclusions by Behar et al. and Costa et al. refute an important genetic link between (East) European Jews and Khazars.

The only possible conclusion is that the bulk of East European Ashkenazim must have originated from another part within Europe. According to Zooss-

37 MARTA D. COSTA, J. B. PEREIRA, M. PALA, et al.: A substantial prehistoric European ancestry amongst Ashkenazi maternal lineages. In: *Nature Communications* 4 (2013), p. 2543.

38 SIMHA ASSAF: R. Yehuda 'albartseloni 'al 'igereth Yosef melek hakuzarim [R. Yehuda from Barcelona about the Letter of Joseph, King of the Khazars; text in Hebrew]. In: *Jeschurun* 11 (1924), pp. 113–117.

mann-Diskin, East European Ashkenazim started their European migrations in Rome, because of the genetic relationship with today's Italians, and because conversions to Judaism were common in ancient Rome.³⁹

It has been suggested that West European Ashkenazim originated somewhere in the Roman Empire while East European Ashkenazim originated in southern Ukraine (as it is called today) already before the beginning of the Common Era,⁴⁰ with some Jewish inflow from Byzantium in the second half of the first millennium CE.⁴¹ Recently, it was shown that according to mitochondrial DNA (mtDNA) both West and East European Ashkenazim started in Southern Europe, and that there was a genetic difference between West and East European Ashkenazim.⁴²

This article describes a more detailed picture about the origin of East European Ashkenazim, during the period before and after the beginning of the Common Era with a major role for Jewish migrations from Southern Europe.

The following questions should be answered: are there historical data that agree with an early origin from Southern Europe, i. e. the region of Greece (including Western Anatolia) and/or Italy? If the answer is positive, the next problems to be solved are: does this historical approach also agree with genetic data? Are both historical and genetic data then compatible with demographic data? Finally, if East European Ashkenazim did not originate from Germany, why do their descendants speak a German-based language?

Historical data

Judeans in the Greek colonies and in mainland Greece

When we find a Judean presence around the Black Sea before and shortly after the beginning of the Common Era, its immediate origin most likely is the Greek colonial settlement in Anatolia or mainland Greece. Italy is possible from the time the Romans had colonies in the region (end of the first century BCE). Judean migrations from Western Europe are out of the question during this period.

Around 1000 BCE, Greeks from mainland Greece started to migrate to the Western coast of Anatolia.⁴³ Later on, from the 6th century BCE onward, they

39 AVSHALOM ZOOSMANN-DISKIN: The origin of Eastern European Jews revealed by autosomal, sex chromosomal and mtDNA polymorphisms. In: *Biology Direct* 5 (2010), p. 57.

40 JITS VAN STRATEN: The origin of Ashkenazi Jewry: the controversy unraveled. Berlin 2011, pp. 24, 36–37.

41 *Encyclopaedia Judaica*. Berlin 1930, Vol. 5, p. 341.

42 COSTA, A substantial prehistoric European ancestry (see note 37).

43 PETER JOHN RHODES: A history of the classical Greek world: 478–323 BC. Malden/MA 2006.



Fig. 2: Location of Greek cities around the Black Sea and the Sea of Azov (from the Internet Encyclopedia of Ukraine).

founded a number of cities around the Cimmerian Bosphorus (today's Strait of Kerch) and north of the Black Sea, some of which became part of the Kingdom of the Cimmerian Bosphorus (ca. 438 BCE–ca. 370 CE; see Fig. 2). The Greek colonists along the Bosphorus originated from Asia Minor mostly from Miletus in the southern part of Ionia, on the Western coast of Anatolia, but also from the cities of northern Ionia. The emigration was the result of the bad economic situation as a result of the wars against the Lydians and later on, against the Persians. The only solution to solve the problems was through the emigration of part of the Ionic population.⁴⁴

The presence of Jews in Anatolia has been recorded since the third century BCE.⁴⁵ For example, Miletus, Ephesus, Pergamum, and Tralles are known to have had a Jewish community before and after the beginning of the Common Era.⁴⁶ During the time of Philo (20 BCE – 50 CE), Judeans lived not only along the south-

⁴⁴ GUÉNADY KOCHELENKO and VLADIMIR KOUZNETSOV: La colonization grecque du Bosphore cimmérien. In: *Le Pont-Euxin vu par les Grecs: sources écrites et archeology: symposium de Vani (Colchide), septembre-octobre, 1987*. Ed. by TÉA KHARTCHILAVA and EVELYNE GENY. Paris 1990, pp. 8–82.

⁴⁵ Encyclopedia of Jews in the Islamic world. Leiden, Boston 2010, Vol. 3, p. 603.

⁴⁶ Encyclopaedia Judaica. Detroit 2007, Vol. 5, p. 638.

ern and western coast of Anatolia, but also along the northwestern shore in Bithynia, a Roman province that borders on Thrace.⁴⁷

An interesting remark regarding Jewish (Judean) migrations is found in the *Encyclopaedia Judaica*: »Asia Minor (Anatolia) was undoubtedly also a homeland, or at least a transition station, for the Jews who established the Jewish centre on the northern bank of the Black Sea (Panticapaeum).«⁴⁸ It is therefore quite plausible that the Hellenized Judeans found in the Greek colonies around the Black Sea came from Ionia and other regions in Anatolia.

The first time a Judean is mentioned in mainland Greece is between 300 and 250 BCE in Oropos.⁴⁹ At the beginning of the Common Era, Judeans lived in various parts of mainland Greece, such as Thessaly, Boeotia, Macedonia, Attica, Argos, and Corinth, and also on the islands Euboea, Cyprus and Crete.⁵⁰ Therefore, the Judeans around the Black Sea may have come from mainland Greece and/or the islands as well.

Judeans in Italy

During the same period and earlier, Judeans lived in Rome and other parts of Italy. Tacitus, who lived from ca. 56 CE to ca. 117 CE, writes that Judeans and Egyptians were expelled from Rome in 19 CE because of their religious practices. Four thousand young ones (military age) had to be shipped to Sardinia, the others had to leave Italy unless they renounced their religious practices.⁵¹ According to Stern, the number of 4,000 refers to Jews (Judeans) only, and it is an indication of the number of Judeans in Rome. His conclusion is based on the singular form in Tacitus of *ea superstitione*, that superstition.⁵² The conclusion is doubtful though. If Tacitus actually only writes about the Judeans, why would he add the Egyptians? In a thorough article based on the number of tombs, Rutgers shows that the average size of the Jewish community of Rome was 620 people at the most from

47 PHILO JUDAEUS ALEXANDRINUS: *Legatio ad Caium*. Paris 1972, p. 263, [281].

48 *Encyclopaedia Judaica* (see note 46).

49 DAVID M. LEWIS: *Selected papers in Greek and Near Eastern history*. Cambridge 1997, pp. 380–382.

50 PHILO, *Legatio ad Caium* (see note 47), p. [281] and [282].

51 PUBLIUS CORNELIUS TACITUS: *Cornelii Taciti Annalium ab excessu divi Augusti libri / recognovit brevique adnotatione critica instruxit C. D. FISHER*. [Oxford] 1906, nr. 85.

52 MICHAEL STERN: *Greek and Latin authors on Jews and Judaism*. Jerusalem 1980, Vol. 2, p. 72.

the first through the fourth century CE.⁵³ This size makes the number of 4000 Jewish young men unlikely also. Furthermore, for Tacitus, who didn't like the cults of either people, their religions may have been the same superstition.

Judeans and Jews around the Black Sea

Based on one manumission inscription found near Olbia (ca. last century BCE), two near Gorgippia, (first century CE), and two near Kerch, (one from first century CE, one of unknown date), Harkavy concluded that Jews [Judeans] had lived in these towns already from before the beginning of the Common Era, that they had been completely Hellenized, and that they spoke Greek.⁵⁴ From the first century CE onward, there was a strong increase in the cult of *Theos Hypsistos* (θεός Ὑψιστος), the Most High God, in the Kingdom of the Cimmerian Bosphorus. The cult became widespread by the 4th century. »[...] according to the inscriptions, the worship of the Most High God was connected with the Jewish synagogues from the very beginning.« This is particularly clear in inscriptions that contain the word *proseuche* (προσευχή), the Greek word for synagogue. The latest inscription in this respect dates from 306 CE.⁵⁵

Jews were present in the Crimea where they joined the insurrection against the Christian bishops in Chersonesus in 300 CE.⁵⁶ Up to the beginning of the 5th century there is evidence of a Jewish presence in the Kingdom of the Cimmerian Bosphorus.⁵⁷ The Greek historian Theophanes Abbas Agri et Confessor writes that during the 7th century, Jews were living near Phanagoria.⁵⁸

Israel Halpern is quite clear about the Jewish presence in the region north of the Black Sea:

53 LEONARD VICTOR RUTGERS: Reflections on the demography of the Jewish community of ancient Rome. In: *Les cités de l'Italie tardo-antique (IV^e–VI^e siècle)*. Ed. by MASSIMILIANO GHILARDI and CHRISTOPHE J. GODDARD. Rome 2006, pp. 1–14.

54 AVRAHAM ELIAHU HARKAVY: *Hayehudim usfat haslavim* [The Jews and the language of the Slavs; text in Hebrew]. Vilnius 1867, pp. 80, 4.

55 IRINA A. LEVINSKAYA: *The book of acts in its diaspora setting*. Grand Rapids, MI 1996, pp. 108–110.

56 D. I. DAN'SHIN: *The Jewish community of Phanagoria*. In: *Ancient civilizations* 3 (1996), pp. 133–150.

57 IRINA A. LEVINSKAYA and SERGEI R. TOKHTAS'YEV: *Jews and Jewish names in the Bosporan Kingdom*. In: *Studies on the Jewish diaspora in the Hellenistic and Roman periods*. Ed. by BENJAMIN ISAAC and AHARON OPPENHEIMER. [Tel Aviv] 1996, p. 5.

58 THEOPHANES ABBAS AGRI ET CONFESSOR: *Theophanis Chronographia*. [historical account of Thiophanes; text in Greek and Latin]. Bonn 1839, p. 545.

»If the existence of the Jewish settlement in this region during the Hellenistic period is still a matter of conjecture, there is certainty regarding the Roman period, and thereafter this region was seemingly never without a Jewish settlement.«⁵⁹

Jews in Khazaria

After ca. 670, the Khazars appear on the scene, and admixture with them should not be excluded, although we have no information on this. We only know for certain that King Bulan of the Khazars converted to Judaism in 861.⁶⁰ We should realize that Jews had been living in and near the region called Khazaria for more than 850 years before King Bulan of the Khazars converted to Judaism. The following questions seem therefore justified: did his conversion add significantly more converts to the already large Jewish community? Or, was the situation maybe such that the king converted to Judaism because there were so many Jews already living in his kingdom? These questions cannot be answered as long as we don't have more information about the Khazars. And, as mentioned before, a Jew in Khazaria didn't have to be a converted Khazar. Before Halpern discusses the Khazars, he makes the following statement: »For more than 600 years, Jewish settlement existed only in this one corner of Eastern Europe north of the Black Sea.«⁶¹ The long Jewish presence during the first 670 years of the Common Era, may make the Khazars considerably less important for East European Jewry than assumed by some scientists.

In 721–722, the Byzantine Emperor Leo III, the Isaurian, ordered Jews to be baptized. Part of the Jews left Byzantium.⁶² In note 13, the author writes that around 722, »The Jews began to come [to Khazaria] from Baghdad, from Khorasan, and from the land of Greece.« If Jews indeed fled to Khazaria, they must have known that it is safe for them to go there. The most logical reason for them to know this, is the presence of Jews living there already. This is another indication that Jews had been living in the region for quite some time. In 873–74, Jews in southern Italy were baptized, but nothing is known about an emigration. A second migration from Byzantium did take place though: »It is known both from this historian

⁵⁹ ISRAEL HALPERN: *The Jews in Eastern Europe*. In: *The Jews, their history, culture and religion*. Ed. by LOUIS FINKELSTEIN. London 1960, Vol. 1, p. 289.

⁶⁰ ZUCKERMAN: On the date of the Khazars' conversion to Judaism and the chronology of the kings of the Rus' Oleg and Igor (see note 35).

⁶¹ HALPERN, *The Jews in Eastern Europe* (see note 59), p. 290.

⁶² JOSHUA STARR: *The Jews in the Byzantine Empire 641–1204*. Athens 1939, p. 2.

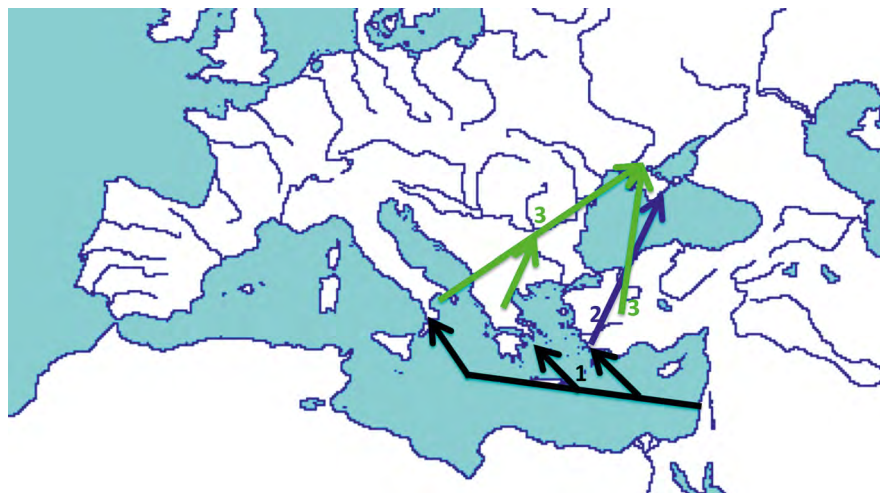


Fig. 3: Major Judean/Jewish migrations leading to East European Jewry: Judean migrations from the Land of Israel to Anatolia, Greece, and Italy (1→) Judean migrations from Anatolia to the Kingdom of the Cimmerian Bosphorus (2→) Jewish migrations from Byzantium (Southern Italy, Greece, Thrace, and Anatolia) to southern Ukraine (3→). The arrows in this figure indicate the beginning and endpoint only, not the routes taken (based on WHKMLA Historical Atlas <http://www.zum.de/whkmla/histatlas/rome/haxromanempire.html>, printed with consent of the author, Alexander Ganse).

[al-Mas'udi] and from a Jewish source that the emperor's policy (Romanos I [919–944]) caused a considerable migration to Khazaria.⁶³ Starr refers to information from ca. 930: »[...] Many Jews had migrated thither [Khazaria], having come from all the cities of the Moslems as well as from Byzantium.«⁶⁴ During this period the Byzantine Empire included not only Greece and Anatolia but also southern Italy and parts of the Balkans. Migrations took place from southern Italy as well:

In the meantime the relatively strong proportion which they [the Jews] undoubtedly constituted in Apulia, e. g., in Oria, and later in Bari and Otranto, must have diminished during the ninth and tenth centuries, primarily as a result of the emigration and destruction caused by the Moslem invasions.⁶⁵

But also in this case, nothing is known about numbers.

⁶³ Ibid., p. 7.

⁶⁴ Ibid., p. 151, note 91.

⁶⁵ Ibid., p. 34.

As historical sources show that Judeans may have come to Greece (including its colonies) and Italy well before the beginning of the Common Era, followed by migrations to the area around the Black Sea (see Fig. 3), the next problem to be tackled is: do genetic data agree with an origin of East European Jews via a southern route?

Genetic data

The main genetic information comes from the publication by Costa et al. who worked with mitochondrial DNA (mtDNA).⁶⁶ Mitochondria are the small organelles that provide us with energy. Originally, mitochondria were bacteria that entered the eukaryotic world. They are effectively haploid, and may have more than one DNA copy (*haplo* is single in Greek; the bacterial genome consists of a single molecule). Mitochondrial DNA is passed on via the mother. This means that we can follow the maternal line. Because mtDNA undergoes mutations, geneticists have been able to make a *family tree* of mtDNA. The tree does not consist of names but of combinations of letters and numbers, and is divided in groups depending on the mutations. Each group starts with a letter. For our discussion, mtDNA of the K-group (haplogroup) is the most important. When different mutations take place in women carrying K, the mtDNAs of the descendants having these different mutations are named subclades K1, K2, K3, etc. When among their descendants again mutations appear they are named subclades K1a, K1b, or K2a, K2b, etc. With more mutations in further generations the naming system continues in such a way that alternately numbers and lower case letters are used, for example K1a1b1, which is a major subclade of K1a. The findings by Costa et al. have a number of points in their favour, compared to those by most other geneticists. In their article, the origin of East European Ashkenazim is not specifically tied to German Ashkenazim. On the other hand, Behar et al. tried to make the confidence intervals of the time to the most recent common ancestor (TMRCA) of the Levites narrower so that it would agree with the history of Jewish settlement in Germany.⁶⁷ Furthermore, Costa et al. do not use sizes of genetic bottlenecks resulting in implausible growth rates. For example, Palamara et al. and Carmi et al. found bottlenecks of some 800 Ashkenazim around 1150, and 350 Ashkenazim

⁶⁶ COSTA, A substantial prehistoric European ancestry (see note 37).

⁶⁷ DORON M. BEHAR, MARK G. THOMAS, KARL SKORECKI, et al.: Multiple origins of Ashkenazi Levites: Y chromosome evidence for both Near Eastern and European ancestries. In: *American Journal of Human Genetics* 73 (2003), pp. 768–79.

around 1300 respectively, resulting in implausible annual growth rates of over 1 per cent (1.2 and 1.8 per cent, respectively).⁶⁸

Thanks to their genealogical approach, Costa et al. found that the four major founder lineages of Ashkenazi mtDNA within haplogroups K and N1b, namely K1a1b1a, K1a9, K2a2, and N1b2 were of European origin. These lineages had been considered as typical Jewish, and were wrongly presented as an indication of a Middle Eastern origin.⁶⁹ Most of the minor mtDNA Ashkenazi lineages investigated by Costa et al., originated in prehistoric Europe as well.

About 11,500 years ago, K1a1b1 arrived in Europe from the Middle East. It dates to about 11,700 years before present (bp). K1a1b1a arose from K1a1b1 some 4400 years ago, due to three mutations. That the ages just mentioned are rather rough estimates, follows from the wide range of the standard deviations (sd), from 6800 – 16700 and from 700 – 8200 years ago, respectively.⁷⁰ From 300 BCE, Judean men came to the Greek colonies in Anatolia and may have married European women carrying K1a1b1a. As a result, a mixed Judean-European community was created. The same may have happened, although somewhat later, in Rome. K1a1b1a constitutes 63 per cent of the Ashkenazi K lineages and 20 per cent of all Ashkenazi mitochondrial lineages. K1a9 and K2a2 account for some 36 per cent of the Ashkenazi K lineages, and date to 2300 (sd: 200–4400) and 8400 (sd: 3200–13700) years bp, respectively.⁷¹

Another finding, one that is particularly interesting with regard to the origin of Ashkenazim, is the difference in haplogroup frequencies between West and East European Ashkenazim, for both the major and most of the minor mitochondrial lineages. As to haplogroup K, among West European Ashkenazim (German/Swiss) almost 50 per cent of the mtDNA belongs to this haplogroup, while this is only 15 per cent among East European Ashkenazim (in Russia).⁷² As long as K1a1b1a survived in Western Europe, it added to the difference in frequency between West and East European Ashkenazim via admixture. The work by Costa et al. reinforces the demographic conclusion that East European Ashkenazim do

68 PIER FRANCESCO PALAMARA, TODD LENCZ, ARIEL DARVASI, et al.: Length distributions of identity by descent reveal fine-scale demographic history. In: *American Journal of Human Genetics* 91 (2012), pp. 809–822; SHAI CARMİ, K. Y. HUI, E. KOCHAV, et al.: Sequencing an Ashkenazi reference panel supports population-targeted personal genomics and illuminates Jewish and European origins. In: *Nature Communications* 5 (2014), p. 4835.

69 DORON M. BEHAR, ENE METSPALU, TOOMAS KIVISILD, et al.: The matrilineal ancestry of Ashkenazi Jewry: portrait of a recent founder event. In: *American Journal of Human Genetics* 78 (2006), pp. 487–497.

70 COSTA, A substantial prehistoric European ancestry (see note 37).

71 Ibid.

72 Ibid.

not originate from Germany. Taking into account that East European Ashkenazim are the large majority among Ashkenazim today in the United States, England, and Israel, it is quite an achievement to show a difference between West and East European Ashkenazim.

It is plausible that among the Judeans who moved to the region around the Black Sea there were women belonging to the Judean-European community in Greece, Italy, or Anatolia who were the source of the major and minor mtDNA lineages in East European Ashkenazim. Later, during the 8th and 10th centuries, Jewish women with their families from Byzantium (Balkans, Italy, and Greece) arrived in Khazaria, who may have been carriers of K1a1b1a (and N1b2) as well.

Founder clades K2a2 and K1a9 also show a difference in distribution between West and East European Ashkenazim. K1a9 originated in Western Europe.⁷³ The question is, who may have brought it to Eastern Europe? The question will be discussed in the section ›Yiddish‹.

There must have been more Jewish males from the Middle East than females, as it is mostly the men who went abroad as merchants or in any other capacity, but it can never have been close to 100 per cent, simply from a practical point of view. It is not feasible that there was a Middle Eastern Jewish man available for every Jewish girl in Europe who wanted to get married during the centuries of a Jewish presence in Europe. And, of course, there is genetic evidence about non-Jewish men entering the Jewish community.

In summary, almost all lineages show a difference between West and East European Ashkenazim, are of European origin, and are compatible with an origin via Southern Europe and the Black Sea.

Numerical development during the first millennium CE

The range calculated in table 1 for the beginning of the Common Era is possibly correct as to numbers, its composition is far from it. We are probably dealing with a mixture of ancestors: Judeans, Judean-Europeans, converts, and also local and foreign non-Jews whose descendants would enter the Jewish community at a later stage (for example, from Byzantium). To circumvent all these unknown quantities, also in this publication the term *ancestors* will be used during the first

⁷³ Ibid.

millennium.⁷⁴ Everybody has ancestors, and this allows for the 11.5 per cent of the European haplogroup R1a-M17 among East European Ashkenazi men,⁷⁵ the 50 per cent converts based on autosomal DNA,⁷⁶ the more than 80 per cent Ashkenazi Jewish women of European descent based on mtDNA.⁷⁷ The consequence is that at the beginning of the Common Era, both the lower and the higher number of ancestors, 3,700 and 105,400, respectively, may be too high if we only look at southern Ukraine. »May be« because in addition to the uncertainty about the ethnic composition, both numbers are obviously rough estimates with possible deviations of 50 per cent or more. With the information we have today, it is not possible to determine which part of the East European Ashkenazim descended from Judeans who had moved to southern Ukraine, which part descended from Jews from Byzantium, and which part entered as converts before or during the first millennium.

Admixture must have been a common phenomenon in Eastern Europe during the first millennium. A careful indication of admixture is the observation by Weissenberg that East European Ashkenazim are physically (phenotypically) of the south Russian type.⁷⁸ It is rather unlikely that admixture was only limited to non-Jewish women. When a Jewish girl marries a non-Jew, the children are automatically Jewish, which would make such a marriage not worth recording. The finding that the European haplotype R1a-M17 found among Belorussians and Ukrainians for example, also occurs at a substantial frequency among Ashkenazi men, affirms the fact that non-Jewish men were involved in admixture as well in the region north of the Black Sea.⁷⁹ It is noteworthy that R1a-M17 entered the Jewish community around 450 CE. The authors suggest that the mutation possibly came from the Khazars. In view of the early date, this is not very likely. The date does agree though with the Jewish presence in the Kingdom of the Cimmerian Bosphorus.⁸⁰ If Nebel's date is correct it might be the first genetic evidence that the descendants of the Judeans/Jews who lived in southern Ukraine from the beginning of the Common Era did not disappear, and that they are partly ancestors of today's East European Ashkenazim. In 2005, nothing was known yet about

⁷⁴ VAN STRATEN, The origin of Ashkenazi Jewry (see note 40), p. 185.

⁷⁵ ALMUT NEBEL, DVORA FILON, MARINA FAERMAN, et al.: Chromosome evidence for a founder effect in Ashkenazi Jews. In: *European Journal of Human Genetics* 13 (2005), pp. 388–391.

⁷⁶ CARMİ et al., Sequencing an Ashkenazi reference panel (see note 68).

⁷⁷ COSTA, A substantial prehistoric European ancestry (see note 37).

⁷⁸ SAMUEL WEISSENBERG: Die südrussischen Juden; eine anthropometrische Studie. In: *Archiv für Anthropologie* 23 (1896), pp. 347–579.

⁷⁹ NEBEL et al., Chromosome evidence (see note 75).

⁸⁰ LEVINSKAYA/TOKHTAS'YEV, Jews and Jewish names in the Bosporan Kingdom (see note 57).

the downstream mutational development of R1a-M17. A detailed analysis of this development of R1a-M17 shows that R1a-M582 is found among 4 Europeans (East/Central) and 22 Ashkenazi Levites. Of the latter, 13 have the same short tandem repeats (STRs) build up as the 4 Europeans, and might be Europeans as well.⁸¹ In any case, at the end of the work just mentioned the authors write: »our data do not enable us to directly ascribe the patterns of R1a geographic spread to specific prehistoric cultures or more recent demographic events.«

The last problem to solve is a Yiddish speaking population that did not originate from a German-speaking region.

Yiddish

Yiddish is a component language, with German as the main component. It also contains Hebrew, Slavic and Romance words. If it is true that East European Jewry started in southern Ukraine, it doesn't look logical that their descendants should speak Yiddish, a German based language. The three major hypotheses concerning the origin of Yiddish are the Rhineland hypothesis,⁸² the Danube hypothesis,⁸³ and the Sorb hypothesis.⁸⁴

According to the Rhineland hypothesis, the Jews of Cologne fled to Gaul when the »barbarians«, Germanic tribes, occupied the city. When, centuries later, they returned to the Rhineland, the Yiddish language had started to develop. Because nothing is known about a Jewish presence in the Rhineland between 331 and 751, but only in Gaul, Weinreich decided that they must have fled when the Germanic tribes, took over the city. In addition, he shows that the name of the river Rhine, used in the Hebrew literature during the tenth century, ריניוס, transcribed as *rinus*, is a mixture of Middle High German, *rîn*, and Latin, *-us*, pointing clearly to Gaul.

81 PETER A. UNDERHILL, G. DAVID POZNIK, SIIRI ROOTSI, et al.: The phylogenetic and geographic structure of Y-chromosome haplogroup R1a. In: *European Journal of Human Genetics* 23 (2015), pp. 124–131.

82 MAX WEINREICH: *History of the Yiddish Language*. Chicago, London 1980, pp. 329–330.

83 ALICE FABER and ROBERT D. KING: Yiddish and the Settlement History of Ashkenazic Jews. In: *The Mankind Quarterly* 24 (1984), pp. 393–425; DOVID KATZ: Hebrew, Aramaic and the Rise of Yiddish. In: *Readings in the Sociology of the Jewish Languages*. Ed. by JOSHUA AARON FISHMAN. Leiden 1985, pp. 85–103.

84 PAUL WEXLER: Yiddish—the fifteenth Slavic language: a study of partial language shift from Jewish-Sorbian to German. In: *International Journal of the Sociology of Language* 9 (1991), pp. 9–150.

The idea that the Jews fled from the Rhineland when the Germanic tribes took over the city is not based on evidence. No group had to leave the city. This makes Weinreich's knowledge of early German history questionable. Moreover, in the 1980s, Faber and King, and Katz showed that linguistically, the Rhineland could not have been the origin of the Yiddish language. In addition, the transcription of רינז as *rinus*, is doubtful. A more logical transcription is *renus*, the Latin name of the river. After all, Latin was one of the languages spoken in Cologne. There is every reason to assume that the Jews spoke the vernacular.

The Danube hypothesis has become the most popular hypothesis, and states that Yiddish originated in south-eastern Germany, where Bavarian was spoken. The idea that Yiddish originated from the Bavarian area had been suggested earlier by Mieses, but he did not use the name »Danube« in this respect.⁸⁵ It appears that the German component of Yiddish is indeed derived from Bavarian.

In 1991 Wexler proposed his Sorb hypothesis: Yiddish is a Slavic language derived from Sorbian, and originated in the land of the Sorbs. Furthermore, East European Jews are mainly descendants from Sorbs, and to some extent from Khazars.⁸⁶ Finally, Wexler is of the opinion that Ashkenaz does not relate to Germany, but to some region in ancient Persia.⁸⁷ In 1998, Eggers published his Habilitationsschrift in which he proposed the Bavarian-Czech hypothesis. Salient details of this hypothesis are: the oldest Slavic words are not Sorbian but Old Czech, originally the German component was Bavarian, and religion played an important role when the language developed.⁸⁸ Bavarian was not only spoken in Bavaria, but also in Bohemia and Moravia. The Bavarian-Czech hypothesis can be considered a modification of the Danube hypothesis. Old Czech is a logical origin for the Slavic words in Yiddish. Bohemia had famous rabbis who obviously spoke Old Czech (and Bavarian). There were students speaking Old Czech (or Old Polish that was very similar) who visited the Talmud schools in France and Germany. For these students the Slavic words probably were included in Hebrew commentaries of the Torah and Talmud. For example, Rashi (acronym for Rabbi Shlomo Yitshaki, 1040–1105) who lived in Troyes, France, and Gershom ben Yehuda (960–1028) in Germany used Old Czech words. It goes without saying that rabbis

⁸⁵ MIESES, *Die Jiddische Sprache* (see note 14), p. 269.

⁸⁶ WEXLER, *Yiddish—the fifteenth Slavic language* (see note 84).

⁸⁷ RANAJIT DAS, PAUL WEXLER, MEHDI PIROOZANIA, et al.: Localizing Ashkenazic Jews in primeval villages in the ancient Iranian lands of Ashkenaz. In: *Genome Biology and Evolution*. Advance Access doi (2016), 10.1093/gbe/evw046.

⁸⁸ ECKHARD EGGER: *Sprachwandel und Sprachmischung im Jiddischen*. Frankfurt am Main 1998.

in Bohemia used Old Czech words in their Hebrew commentaries as well. Eggers was not aware of the use of Old Czech in the Hebrew commentaries.

The importance of religion is shown by the use of Hebrew words for Jewish things, for example, *sejfer* for a Jewish book, *buch* for all other books.⁸⁹ The most plausible assumption is that Yiddish indeed originated from Bohemia (and Moravia) where the rabbis spoke Bavarian, Old Czech and knew Hebrew.

Aptroot mentions in a reaction to the idea that Ashkenaz is some region in ancient Persia: »Wexler's theory did not gain acceptance in the scholarly community.«⁹⁰ Finally, Flegontov *et al*⁹¹ showed that the geographic population system used by Das *et al* to infer ancestry is not suitable for this purpose and that (again) Wexler's Yiddish relexification theory is unsound.

A linguistic phenomenon known as unrounding of vowels (*ü* becomes *i* and *ö* becomes *e*) found in all Yiddish dialects, first occurred around 1200 in parts of Bohemia and Moravia.⁹² This means that Yiddish did not originate before ca. 1200.

There were possibly family relationships between the Bohemian/Moravian and German or French rabbis. Zunz reports that the 12th-century Bohemian rabbis Isaac halaban ben Jacob, Eliezer ben Isaac, and Isaac ben Mordekhai lived in Germany as well.⁹³ Daughters of rabbis normally married sons of rabbis. The Romance words in Yiddish may have come from contacts between the rabbis from Bohemia and Moravia and rabbis from France and Germany.

With a low level of religious knowledge among East European Ashkenazim before 1200, the obvious persons to teach East European Ashkenazim Yiddish would be rabbis and teachers of religion who spoke Yiddish.⁹⁴ At the beginning, these people must have come from Germany or Bohemia and Moravia where the level of Jewish knowledge was very high. It was found that founder clade K1a9 originated in the West, but it amounts only to 6 per cent of all main Ashkenazi lineages in Eastern Europe.⁹⁵ One such source could be some of the women of

⁸⁹ Ibid., p. 386.

⁹⁰ MARION APTROOT: Yiddish language and Ashkenazic Jews: a perspective from culture, language, and literature. In: *Genome Biology and Evolution* 8 (2016), pp. 1948–1949.

⁹¹ PAVEL FLEGONTOV, ALEXEI KASSIAN, MARK G. THOMAS, et al.: Pitfalls of the geographic population structure (GPS) approach applied to human genetic history: a case study of Ashkenazi Jews. In: *Genome Biology and Evolution* 8 (2016), pp. 2259–2265.

⁹² EGGER, Sprachwandel und Sprachmischung im Jiddischen (see note 88), p. 227.

⁹³ LEOPOLD ZUNZ: *Die Ritus des synagogalen Gottesdienstes, geschichtlich entwickelt*. Berlin 1859, p. 73.

⁹⁴ ISRAEL ZINBERG: *A History of Jewish Literature*. Vol. 6: The German-Polish Cultural Center. Cincinnati/OH 1975, p. 6.

⁹⁵ COSTA, A substantial prehistoric European ancestry (see note 37).

the aforementioned rabbis and/or teachers. Women of rabbis from Bohemia and Moravia who went to Eastern Europe may have been a source as well. This means that K1a9 occurred initially in a limited group. It would also explain why, later on, K1a9 occurred in Eastern Europe at a much lower frequency than K1a1b1a. One could possibly explain the differences in frequencies by drift. However, the authors tried to diminish this possibility by using the diversity and the nesting structure in the tree for most of the inferences.

As mentioned above, before and shortly after the beginning of the Common Era, the Judeans around the Black Sea must have spoken Greek. Later on, their descendants must have switched to a Slavic language, because a Slavic language became the vernacular, and the Jews, as everywhere else in those days spoke the vernacular. Do we have evidence that East European Ashkenazim indeed spoke a Slavic language before they spoke Yiddish?

There is indirect information that East European Ashkenazim first spoke a Slavic language. In his book *Kitâb al-masâlik wa'l-mamâlik* (*The book of the roads and the kingdoms*), Ibn Khordadbiḥ (c. 825–ca. 912) tells us about Jewish merchants, Radhanites, who traveled from Western Europe to China and back.⁹⁶ They spoke Arabic, Persian, Romance languages, the Frankish language, Andalusian, and a Slavic language. It is not plausible that every merchant travelled the whole route (more than 8,000 km one way) and spoke all these languages. We may therefore assume that the Slavic-speaking Jewish merchants lived in a Slavic-speaking country. This would not disagree with the finding that the East Asian mitochondrial haplotype M33c, most likely Chinese, was found only among East European Ashkenazim, whose ancestors couldn't have spoken Yiddish during this early period.⁹⁷ But there is direct evidence as well.

1. In a letter, found in the *Geniza* of Cairo, dating from before the 11th century, a Jew is mentioned who only spoke Russian (*sfat kena'an*: the language of Canaan). He spoke neither Hebrew, nor Greek or Arabic.⁹⁸ The Yiddish language still didn't exist.
2. At the beginning of 1600, rabbi Me'ir Kats Ashkenazi complained in a *responsum* »that the majority of our coreligionists, who live in our midst, speaks

⁹⁶ MICHAEL JAN DE GOEJE: *Kitâb al-masâlik wa'l-mamâlik* (Liber viarum et regnorum). Leiden 1889, pp. 114–115.

⁹⁷ JIAO-YANG TIAN, HUA-WEI WANG, YU-CHUN LI, et al.: A genetic contribution from the Far East into Ashkenazi Jews via the ancient Silk Road. *Scientific Reports* 5 (2015). 8377; DOI:10.1038/srep08377.

⁹⁸ JACOB MANN: *The Jews in Egypt and in Palestine under the Fatimid Caliphs: a contribution to their political and communal history based chiefly on Genizah material hitherto unpublished*. Oxford 1969, Vol. 2, p. 192.

Russian.«⁹⁹ When the rabbi says that these Jews speak Russian, he obviously means that they did not speak Yiddish. Why would a rabbi mention the language these Jews spoke? Rabbis don't care what language one speaks as long as one lives according to *halakhah* (Jewish law). It looks as if Yiddish was connected to religion. Did only religious Jews speak Yiddish? The word *Russian* is probably not correct, because the rabbi lived in Mogilev, Belarus, where Belorussian was spoken. For the rabbi who spoke Yiddish, this may just as well have been Russian because the two languages differ no more from each other than two dialects of the same language.

3. Around the middle of the 17th century there were still large areas in Russia where Jews *only* spoke Russian.¹⁰⁰ Use of the word *Russia* by Harkavy should not be taken as what we call Russia today. He means the Russian Empire and that included Ukraine and Belarus as well.

In his analysis of the Jewish translation of the Vilnius Codex 262 into Belorussian, Altbauer writes:

We do know, however, that the Jewish population in the area [Lithuania] included ›autochthonous‹ Jews who had originally migrated to Eastern Europe from the Byzantine periphery. Antedating the great immigration of Yiddish-speaking Jews from Ashkenaz [...] they spoke later Slavic [...] The process of their ›Ashkenazization‹ took many generations [...] the authors of the translations [...] were indeed Jewish, descendants of the ›autochthonous‹ Jews described above.¹⁰¹

The fact that large groups of Jews between 1600 and 1650 did not speak Yiddish yet, shows that it took centuries before East European Ashkenazim spoke Yiddish. After all, Yiddish-speaking rabbis must have been present in Eastern Europe for at least some 200 years before 1600. Moshe Taube of the Hebrew University in Jerusalem wrote the following: »Now of course there were Jews in Eastern Europe before the arrival of the Ashkenazis, and of course, like in every other diaspora, they spoke the local language. This is uncontroversial.« (personal communication). Aslanov uses the Hebrew name *kena'anim* for these Jews.¹⁰²

⁹⁹ MEIR KATZ ASHKENAZI: *Gevurat 'anashim* [Heroism of the people; text in Hebrew/Aramaic]. Dessau 1697, p. 21V^o.

¹⁰⁰ AVRAHAM ELIAHU HARKAVY: *Hayehudim usfat haslavim* [The Jews and the language of the Slavs; text in Hebrew]. Vilnius 1867, p. 2.

¹⁰¹ MOSHÉ ALTBAUER and MOSHE TAUBE: The five biblical scrolls in a sixteenth-century Jewish translation into Belorussian (Vilnius Codex 262); with introduction and notes by Moshé Altbauer; concordance compiled by Moshe Taube. Jerusalem 1992, p. 23.

¹⁰² CYRIL ASLANOV: *Hitgabshut shel hayidish hamizrahit* [The crystallization of Eastern Yiddish; text in Hebrew], In: *Toldot yehudey Rusia*. Ed. by ISRAEL BARTAL. Jerusalem 2010, pp. 312ff.

A difference between Lithuanian Yiddish and the rest of East European Yiddish is the switch that occurred long ago whereby the phoneme [ʃ] became an [s] (*shin* was pronounced as *samekh*). For example *shabbos* is pronounced *sabbos*. Aslanov investigated this phenomenon and concluded that before the *kena'anim* arrived in Lithuania, they spoke Belorussian.¹⁰³ The switch was an adaptation to the vernacular of the region where they arrived in Lithuania.

One could possibly argue that the number of Slavic Jews was smaller than the number of German-Jewish immigrants. The number of East European Jews in the year 1090 was somewhere between 82,400 and 271,100, based on realistic growth rates.¹⁰⁴ This is before the first crusade of 1096 when supposedly Jews fled en masse to Poland and Lithuania. It should be clear that the number of German-Jewish immigrants was not bigger than the Slavic-speaking Jews. Not to mention the fact that there is no proof for mass Jewish migrations from Germany during and after this period, and the fact that there are no numerical data about German Jews fleeing to Eastern Europe. The speed of dissemination of Yiddish, can also not be related to rabbinical families having more children than the common Jews, because we do not have any registration of the number of children of both groups between, say, 1200 and 1650.

We are dealing here with a linguistic replacement. An appropriate model for the replacement of Slavic by Yiddish is provided by Ehret (1988): the »language-cum-ethnic shift«.¹⁰⁵ The Jews in Eastern Europe were mostly living in villages and small towns (*shtetls*).

Communities of those eras adopted objects and practices through direct encounter with people of other communities because of their practical value or because they admired or desired the traits or looked up to the people from whom the traits came, or for both reasons conjoined.¹⁰⁶

The people to whom East European Jews looked up were the rabbis who came from the west. As mentioned before, the level of religious knowledge was very low among East European Jews. The traits in question was the *nusah ashkenaz*, the German Jewish rites, the rabbis brought along. The rabbis spoke Yiddish.

103 CYRIL ASLANOV: Hagyyat ha-*shin* khe-samekh belashon haqodesh ubeyidish etsel yehudey lita: hash'arah bidvar motsa'ah [the pronunciation of the *shin* as *samekh* in the holy language and in Yiddish among the Jews of Lithuania: an assumption as to its origin; text in Hebrew] In: Karmilim leheker halashon ha-ivrit uleshonot semukhot 10 (2014), pp. 45–54.

104 See table 1.

105 CHRISTOPHER EHRET: Language change and the material correlates of language and ethnic shift. In: *Antiquity* 62 (1988), pp. 564–573.

106 Ibid.

Although Ehret speaks of an encounter of whole community to whole community, the influence of the rabbis was probably strong enough to warrant the following

the embedding of the admired features of culture in the wider cultural matrix of the donor society [in this case the rabbis] could trigger off the adoption of additional parts of that matrix, undermining the sense of ethnic distinctiveness among the adopting community and leading over a period of several generations to their adoption of the language and assumption of the self-identification of the donor community [the rabbis].¹⁰⁷

The »language-cum-ethnic shift« fits the situation in Eastern Europe perfectly. It would also explain why East European Jewish historians and linguists maintain that East European Jewry originates from Germany, and why they deny that they are to some extent descendants of the Jews who lived around the Black Sea at the beginning of the Common Era. Stampfer maintains that the latter did not survive the Mongol invasion.¹⁰⁸ As Menache indicates, the Mongols treated the Jews the same way as non-Jews.¹⁰⁹ There is no evidence to believe that Stampfer is right.

Some of the arguments used to defend a German origin are: German and East European Jews share similar genealogies of rabbinical families, similar liturgy, and similar synagogue architecture. Considering that there were hardly any rabbis in Eastern Europe before roughly 1100, and most rabbis and teachers of religion had to come from the West, it is logical that the rabbinical genealogies are similar. As said before, the rabbis brought the *nusah ashkenaz*, the Ashkenazi rites, to Eastern Europe. Should the liturgy then not be similar? The similarity of architecture of the synagogues is certainly no proof. All over Europe one finds the Gothic arch, invented in France. Does that mean that the people in all these countries came from France? As to the synagogues, the builder of a synagogue had to have an example of how to build a synagogue. Surely a rabbi would know what a synagogue looked like. Since, at the beginning the rabbis came from the west, they could have shown the builder how in the west a synagogue was built. Later on these synagogues could be used as examples.

Remains the question, how did women learn to speak Yiddish. It is known that among today's ultra orthodox Jews, (Hebrew: *haredim*) women are taught Jewish law by other women. It is plausible that when rabbis started to go to Eastern Europe, and encountered a more or less ignorant Jewish community, the women were taught Jewish law by, for example, the wives of the rabbis. Espe-

¹⁰⁷ Ibid.

¹⁰⁸ STAMPFER, Violence and migration of Ashkenazi Jews to Eastern Europe (see note 21), p. 128.

¹⁰⁹ SOPHIA MENACHE: Tartars, Jews, Saracens and the Jewish-Mongol »Plot« of 1241. In: History. A Quarterly Magazine and Review for the Teacher, the Student, and the Expert 81 (1996), pp. 319–342.

cially laws pertaining to menstruation (Hebrew: *nida*) and kosher food (Hebrew: *kashrut*) were important and had to be taught. Through such contacts women became acquainted with Yiddish as well.

It is thus possible to explain that East European Ashkenazim spoke Yiddish in the end, with only a small number of them originating from a German-speaking area. A similar development must have taken place in Turkey where Jews switched from the vernacular to Judeo-Spanish. We do not know what the numerical relationship was between the Iberian immigrants and the local Jews. Therefore, it is not possible to say that most of the Turkish Jews were Iberian immigrants, and that this is the reason that they switched to Judeo-Spanish.

In addition to historical and genetic arguments, we now have linguistic arguments as well to support a southern route for the development of East European Ashkenazim.

Conclusions

Archaeological evidence shows the presence of Judeans/Jews in southern Ukraine already from before the beginning of the Common Era. Their most plausible regions of origin are the Greek colonies in western Anatolia and mainland Greece. Somewhat later, Jews from Italy may have arrived. As a result of anti-Jewish measures in Byzantium during the 9th and 10th centuries, also Jews from this region came to southern Ukraine. It is logical to assume that the latter knew that it was safe for them to go to there because Jews lived there without persecutions. Historical information indeed indicates a continuous Jewish presence in Eastern Europe from at least the beginning of the Common Era.

The major and minor mtDNA lineages of East European Ashkenazim show that the origin of most of the women is indeed European. The presence of a European Y chromosome haplotype that entered the Jewish community around 450 CE, and that has a relatively high percentage today, indicates that also admixture with non-Jewish men occurred.

Information from rabbinical and other sources shows that at the beginning of the 17th century, many East European Ashkenazim still spoke a Slavic language. This can be considered as additional evidence that East European Ashkenazim, with small exceptions, did not originate from Germany, that they are Ashkenazim by rites and not by descent, and that they are in fact an autochthonous East European Jewish population, at least for the last 1000 years.

This proposal provides an historical, demographic, genetic, and linguistic explanation for the origin of East European Jewry via Anatolia and Southern

Europe with a link to the Middle East, but without substantial migrations from Germany or Bohemia during the late Middle Ages or later, and last but not least, without implausible population increases.