



## Kristie Sawicki's Results

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**At last, science can help you answer the compelling questions: Who am I? Where does my genetic path begin?**

GPS Origins™ will uncover your ancestry, specifically the journey of your DNA which shaped who you are today.

Learn about the distinct genetic communities that share your origins, the routes your DNA traveled, and why it settled in particular places. Your DNA reflects exciting events throughout evolutionary history!

GPS Origins unique algorithm, developed by Dr Eran Elhaik and his team at the University of Sheffield, identifies with unprecedented accuracy where and when the key parts of your genetic makeup were formed.

Let's begin your journey.....

## **HUMAN ORIGINS : OUR SHARED HISTORY TO YOUR STORY**

The questions of who we are and where we come from have been asked for throughout our history. Once we explained our origins with mythology and folklore but now we utilize modern science to answer them.

Genetics help us tell the story of our origins from the beginning, through the formation of the human gene pools and to the last 2000 years of history.

The test results you have just received, along with the following information, will help you understand your personal story, from the shared history of all humans to your unique family story.

### **From Sea to Land: Our Shared History**

Our origins lie far beyond the first appearance of humans, with an evolutionary story common to many forms of life on earth. About 360 million years ago fish-like creatures ventured out of the Devonian Sea and became the first reptiles. After hundreds of millions years of evolution the mammals emerged after the extinction of the dinosaurs 65 million years ago thrust them into the evolutionary spotlight, and allowed them to expand into the world the dinosaurs left vacant.

Our human story really begins with the origin of primates, which split away from the other mammalian groups between 65 and 80 million years ago. It would be at least another 60 million years before the appearance of the species Ardipithecus, an ape that evolved from the Old World Monkeys and is regarded as the first fossil human ancestor.

Fossil finds from Ardipithecus in Ethiopia date it to between 4 and 6 million years ago.<sup>12</sup> This species could walk on two legs like humans but shared other characteristics with chimpanzees. Ardipithecus further developed into a number of lineages found throughout East Africa and South Africa that are known as the

Over the next 3 million years, many Australopithecine species appeared in Africa but they evolved little; their brains remained roughly the same size as those of chimpanzees and they did not use tools. Around 3 million years ago, the subspecies *Homo habilis*<sup>14</sup> began using stone tools, and by 1.5 million years ago the fire-mastering *Homo erectus* appeared. Fossils reveal that *Homo erectus* had a much bigger brain than its Australopithecine ancestors. This subspecies began spreading across much of Africa, Asia, and the Middle East, while the Australopithecines began to disappear.<sup>15</sup>

Next, a new human subspecies, the Neanderthals, appeared. They evolved from a *Homo erectus* relative outside of Africa and had spread widely throughout Europe and the Middle East 500,000 years ago.<sup>16</sup> Neanderthals had stocky builds and thick limbs and were specially adapted to the Ice Age conditions. There is evidence that Neanderthals buried their dead, a practice once thought exclusive to modern humans,<sup>17,18</sup> which raises questions about the nature of the Neanderthal's genetic contribution to modern humans.<sup>19</sup>

## **Africa: The First Modern Humans**

It is thought that the ancestor of modern humans is one of the *Homo erectus* relatives, which appeared in East Africa sometime between 100,000 to 200,000 years ago.

Many different ancient human species also evolved outside Africa, and persisted for more than a million years of geologic time. Their fossils have been unearthed in Europe, Southeast Asia, and China. Yet this diversity had all but disappeared by 100,000 years ago, and human fossils became remarkably uniform across the globe.<sup>23</sup>

The theory that has become known as the Out of Africa model began with a study in the late 1980s, investigating small changes in the DNA carried by the mitochondria - the DNA passed down by the mother.<sup>24</sup> The study analyzed DNA changes in the mitochondrial genome, and surmised that all humans diverged from a single ancestor living 200,000 years ago in Africa. While this does not indicate that there was just one mother, or 'African Eve', for all humanity, the results suggested that all humans alive today descended from a single population residing in Africa more recently than any of the previously mentioned early human species.

The Out of Africa model has also been applied to research on the Y chromosome.<sup>25,26</sup> This chromosome is found only in male lineages and passed down through the generations, unchanged for the most part. A recent study estimates that the 'African Adam' lived 208,000 years ago.<sup>27</sup>

## **Beyond Africa: Colonizing the Continents**

Mitochondrial and Y chromosomal DNA have been our primary tools for deciphering the human story because each person receives only one copy from each parent. Mitochondrial DNA is passed down from the mother and Y chromosomal DNA from the father, allowing scientists to track the ancestry of both the maternal and paternal lines. Perhaps one of the most interesting stories told by the mitochondrial and Y chromosomal DNA is how humans colonized the world.

The earliest human migrants appear to have reached Southern China some 80,000 years ago<sup>28</sup>, and DNA studies suggest they may have interbred with Neanderthals on their way through the Middle East.<sup>29</sup> They then spread to the rest of Asia along a route that probably tracks south of the Himalayas and into East Asia between 50,000 and 60,000 years ago,<sup>30</sup> possibly interbreeding with another subspecies known as the Denisovians.<sup>31</sup>

Archaeological and genetic evidence indicate that modern humans crossed the ocean from Southeast Asia and reached the islands near the tropical Pacific area of Oceania as far back as 50,000 years ago, probably in

small water craft.<sup>32</sup> At the same time, populations spread to Europe through Turkey and into Central Asia. Some of these Central Asian migrants subsequently moved westward from the Ural Mountains and may be represented today by the peoples of Northern Europe and of the Baltic region, such as the Sami people.

Climate and geography delayed further migrations of modern humans into other areas of the world. Much of northern Eurasia was extremely cold during the last Ice Age (11,000 to 12,000 years ago) and human populations remained small and isolated. A small group of people from Siberia, however, managed to reach North America around 18,000 years ago<sup>33</sup> by way of a land bridge that existed when sea levels were lower. They moved south, and by 15,000 years ago, began to populate South America.

There were several more migratory waves to the Americas with the most recent being the Inuit, who colonized the Arctic of North America between 4,000 and 6,000 years ago.

Asian migration also continued eastwards to Oceania. The large islands of Oceania that are closest to Asia have been inhabited for at least 30,000 years, while the most isolated islands of Northeastern Oceania remained uninhabited until just 3,500 years ago.<sup>34,35</sup> The people who made the first voyages into this region were Austronesians, a group that emigrated from an area around present day Taiwan and are today known as Polynesians.

But as the last Ice Age came to an end and the climate warmed, a human cultural revolution was about to start, and it began in the Middle East.

## **Agriculture and the Growth of Civilization**

The transition from hunter-gathering to farming occurred in the Middle East between 10,000 and 12,000 years ago,<sup>36</sup> and between 9,000 and 10,000 years ago in China<sup>37</sup> and parts of the Americas.<sup>38,39</sup> By 5,000 years ago agriculture had facilitated the rise of some of the first large civilizations such as Mesopotamia in West Asia,<sup>40</sup> the Maya in Central America,<sup>41</sup> and the earliest Chinese civilizations along the Yangtze.<sup>42</sup>

Early farming cultures then expanded into new areas. Farmers from the Middle East brought agriculture to Europe and rice farming travelled with groups across East Asia. This expansion was accompanied by a genetic reshuffling as different groups came into contact and reproduced. Such reshuffling has been a continuous process over the last 10,000 years.

Genetic research has played a key role in understanding the migrations that took place during this period. Mitochondrial DNA lineages have been used to confirm and enhance archaeological interpretations such as tracing the ancestry of Norse and Gaelic populations, and Y chromosomal studies have been used to track male lineages in studies of Oceania.

## **Genetic Origins (Gene Pools): The Key to Identifying Your Ancestral Communities**

As humans traversed the globe and colonized different continents, each group accumulated small differences in their DNA. Most of these differences or mutations occurred in the X-chromosome and autosomal chromosomes that are inherited from both parents and allows us to follow the particular journeys made by each human group.

Some genetic roads diverged, not meeting again until modern times, while others led back to one another as genetically distinct groups. The accumulations of mutations in people from different areas of the world are what allow us today to distinguish various groups from one another.

DNA mutations may have occurred by the custom of marrying within a tribe, class, or social group, creating a group of people who were more similar to one another genetically than they were to their ancestors and neighboring groups - in other words, creating a new gene pool or genetic origin..

It's hard to know exactly how many gene pools there are because every genetic background includes “gene puddles” where small, isolated groups of people married only within their local group, acquiring and maintaining unique mutations over time. At this time, scientists have identified about forty gene pools from all over the world. Over time, some of these gene pools spilled toward each other, particularly those in Eurasia, whereas other pools remained more constant.

## **Recent History and the Genetic Melting Pot**

As ancient peoples traded, conquered, enslaved and fell in love, they spread their genes, along with their unique mutations, across larger areas at an increasingly rapid pace, interweaving previously distinct parts of the original gene pools. If in the past, human groups diverged from one another and became genetically distinct, populations coming together creating new genetic tapestries out of the original genetic origin. Today, every one of us is the product of these historical genetic exchanges: it is extremely rare to find individuals whose DNA belongs to a single gene pool.

Because the X and autosomal chromosomes contain the accumulated mutations that correspond with different gene pools, they provides a more nuanced picture of historical interactions in the past. Your genetic origin results will show you how your genome is linked to the human story of the populations who lived 60,000-15,000 years ago.

## **Empires, Pandemic and More Migration: Your Story in the Modern World**

The past 2,000 years of human history have seen the rise and fall of empires that spanned entire continents, such as the Persian, Roman, Mongol, Arab Caliphate and most recently, the British Empire.

The expansion of European empires brought European DNA to many different parts of the world such as Australia, Asia and particularly the Americas, where the intermingling of Europeans and native tribes has led to many central and south Americans having mixed ancestry.

Pandemics, such as the Black Death in Europe and smallpox in the Americas caused widespread devastation. Conquests by Viking raiders reshaped entire cultures and identities. All of these events have left their mark in the DNA of present-day populations.

Countries such as the United States, which have experienced large waves of migration from different areas in the last two hundred years have facilitated the further mixing of many different gene pools.

Between the 17th and 19th centuries, slave trade brought as many as 650,000 Africans to the United States along with nearly 4.5 million Irish people who escaped famine and poverty between 1820 and 1930. Other groups to entered the United States between the mid-19th and early 20th centuries which included about 5 million Germans, over 2 million European jews, 4 million Italians, and up to 300,000 Chinese.

Consequently, these migrations merged gene pools that had, thus far, remained largely separate due to geographical barriers. Many Americans and British now share genetic origins with up to a dozen different gene pools, some of which have diverged more than 60,000 years ago, such as the European and Native American gene pools.

Your GPS Origins results reveal your genetic origins and the journey your DNA has made with end-points

recorded each time the DNA has markedly changed through intermarriages.

For example, if you have Scottish ancestry your results could show that you are a descendant of the Viking ancestors who arrived in the Medieval era, but did not mix with Scots and retained their Danish origin. If you are African American, you may learn about connections to the Bantu peoples and the pre-colonial trading kingdoms in West Africa. If you are an Ashkenazic Jew, you might find your path leads to the ancient Ashkenaz in northeastern Turkey.

Ongoing genetic research of archaeological remains could mean that, in the future, you may be able to match your background with a range of individuals - whether that is an ancient Mayan King found in a temple complex in Guatemala, a warrior from a Viking boat burial or a flint-knapping craftsman from Mesolithic Germany. The human story, as told through our genes, is only the beginning.

You are now ready to discover your genetic path.

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## Kristie Sawicki's Gene Pool %'s Complete Results

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### # 1 Fennoscandia 19.6%

**Origin:** Peaks in the Iceland and Norway and declines in Finland, England, and France

### # 2 Orkney Islands 17.8%

**Origin:** Peaks in the Orkney islands and declines in England, France, Germany, Belarus, and Poland

### # 3 Southern France 14.8%

**Origin:** Peaks in south France and declines in north France, England, Orkney islands, and Scandinavia

#### **# 4 Basque Country 9.2%**

Origin: Peaks in France and Spain Basque regions and declines in Spain, France, and Germany

#### **# 5 Southeastern India 9.1%**

Origin: Endemic to south eastern india with residues in Pakistan

#### **# 6 Western Siberia 9%**

Origin: Peaks in Krasnoyarsk Krai and declines towards east Russia

#### **# 7 Sardinia 8.5%**

Origin: Peaks in Sardinia and declines in weaker in Italy, Greece, Albania, and The Balkans

#### **# 8 Tuva 7.5%**

Origin: Peaks in south Siberia (Russians: Tuvinian) and declines in North Mongolia

#### **# 9 Northern India 2.5%**

Origin: Peaks in North India (Dharkars, Kanjars) and declines in Pakistan

#### **# 10 Pima County: The Sonora 1.2%**

Origin: Peaks in Central-North America and declines towards Greenland and Eskimos

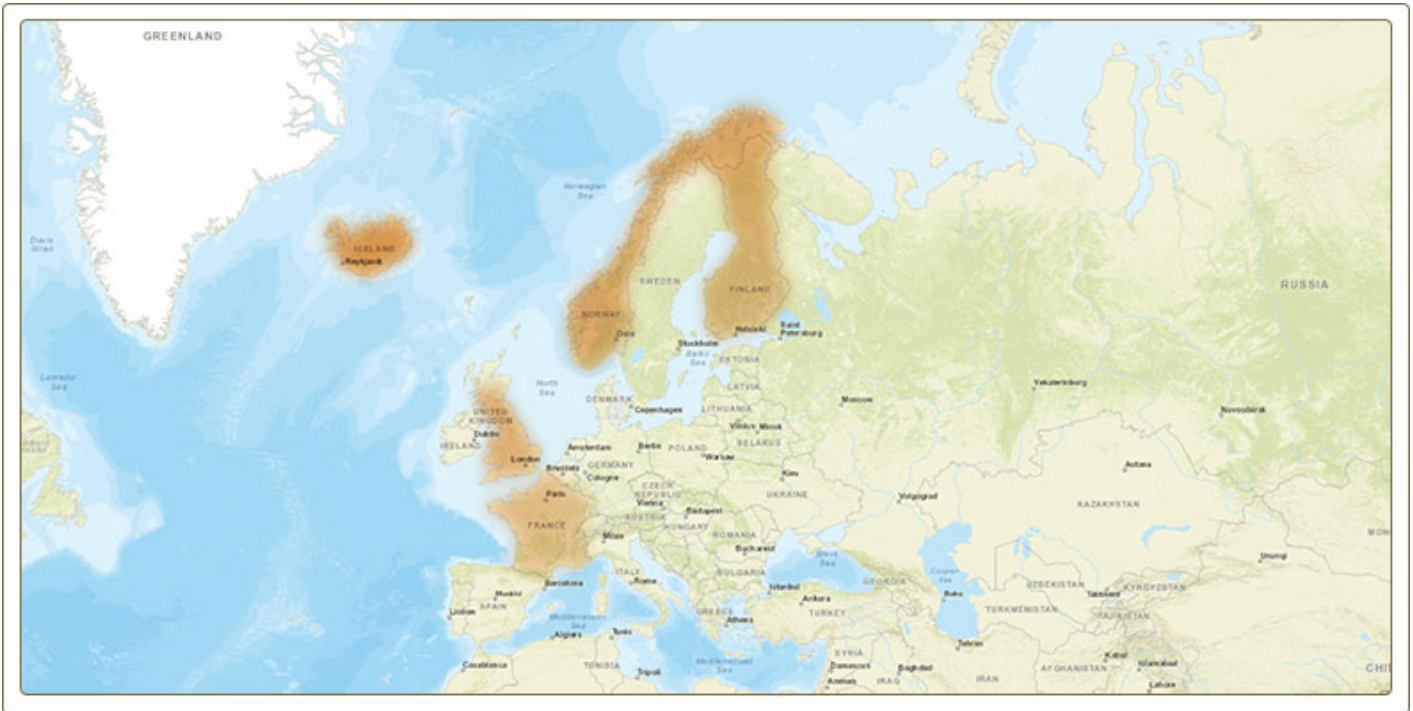
#### **# 11 Central America 0.6%**

Origin: Peaks in Mexico and Central America with residues in Peru

## **Kristie Sawicki's Gene Pool Stories**

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### **1.Fennoscandia Story**



The area known as Fennoscandia encompasses the countries of Norway, Sweden, Finland, and a part of Russia known as the Kola Peninsula. It also included Denmark during the Viking Age, which forms part of greater Scandinavia. The people of this region are known for their extensive voyages, which took them beyond the bitter winters of northern Europe to conquer lands further afield within the continent, and even briefly to North America.

At the end of the last Ice Age, the glaciers retreated and hunter-gatherers arrived in northern Europe between 11,000 and 12,000 years ago.<sup>1</sup> The presence of hunter-gatherers is known from archaeological evidence and likely came from populations similar to the early, small bands of hunter-gatherers that moved into Europe during the Paleolithic period.

Agriculture appeared in Scandinavia between 4,000 and 6,000 years ago.<sup>3-6</sup> Archaeological evidence has shown that this farming culture originated in Central Europe and spread north into Fennoscandia.<sup>7</sup> Similar to other regions in Europe, there has been a considerable debate as to whether this evidence for farming meant that immigrants arrived and pushed out the local ancient hunter-gatherers, or whether farming culture was adopted by the people already living in the area.

Recent genetic studies looking at samples of ancient DNA from preserved bones have found differences between prehistoric people and later farming populations,<sup>2</sup> suggesting that immigrants may have replaced the locals. There are two major language groups in Scandinavia: the Germanic language of Norway, Sweden, and Denmark, and the Finno-Ugric languages of Finland. The division between the Germanic and Finno-Ugric speaking areas has been used as evidence to support the theory that the Baltic region may have been a refuge for earlier hunter-gatherers.<sup>2,8</sup> Analysis of Y-chromosome ancestry from Finno-ugric speakers in Scandinavia and areas in north Eurasia points to a high level of diversity. The potential ancient origins of these people dates from 12,000 to 14,000 years ago, when they would have travelled on an ancient Paleolithic migration route that may have gone through Central Asia before turning west to Europe.<sup>9</sup>

The consensus among researchers today is that the genomes of the people of Fennoscandia are of a mixed ancestry, which is a combination of ancient hunter-gatherers and more recent Germanic farmers. In areas with more extreme cold climates, there remains more original hunter-gatherer influence, likely due to the marginal nature of farming under such conditions. In Finland, some genetic studies have noted potential historic population crashes as evidence for regional genetic distinctiveness, possibly occurring about 3,900 years ago.<sup>10</sup> Surviving on farming alone was very difficult in such an extreme climate and there is evidence that farming and foraging cultures coexisted in Finland.<sup>1</sup>



Between 600 and 700 AD, social changes in Scandinavia marked the start of a migration event that saw the cultures of Scandinavia make their mark on the rest of Europe. It is thought that economic and political stress, as well as a rapid period of agricultural expansion, led people to seek resources and land further afield, catalyzing the start of the Viking Age.<sup>11</sup> Various small kingdoms and chiefdoms invaded and colonized many countries within Europe. Vikings raided, and invaded much of Northern and Western Europe, taking over lands in England, Scotland, and France. They moved east into Russia and further to the west into Iceland, Greenland, and ultimately North America. They briefly settled in what is now Canada's province of Newfoundland.<sup>12,13</sup> They often mixed in with the local populations, as shown by the mixed British Celtic and Norse origins of Iceland that have been identified both through historical and genetic research.<sup>14,15</sup>

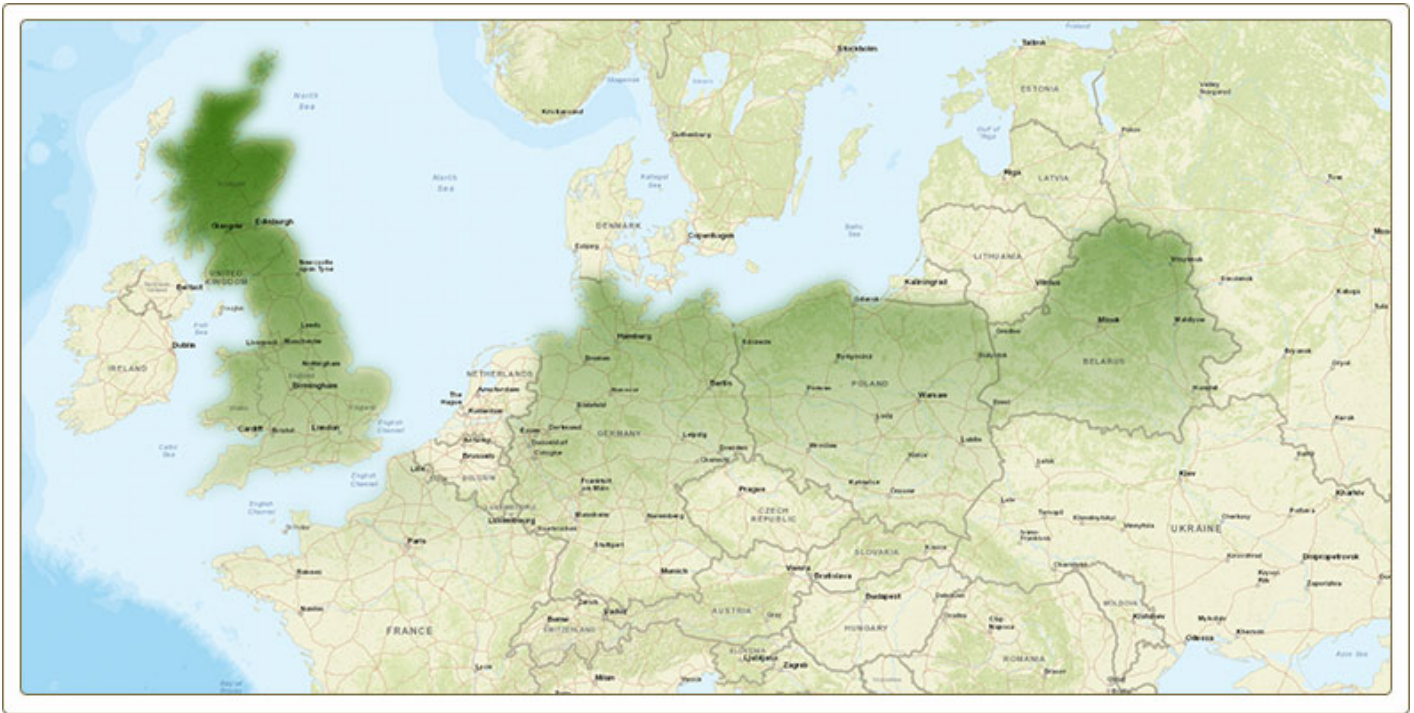
Viking migration ended in the medieval era but the movement of people from Scandinavia has continued to the present day. In recent centuries there have been migrations to parts of the United States and Canada, with people often moving into the Mid-West, for example to Northern Michigan, where a distinct Finnish immigrant community is well established.<sup>16</sup>

In the future, we can envision genetic tests that will be able to distinguish between the ancient hunter-gatherer and more recent Germanic farming components. There may also be tests that can link individuals back to ancient DNA extracted from archaeological skeletal material. What may also prove fascinating for historical enthusiasts is the possibility of tests in the future that are able to distinguish specific migrations of Viking settlers to different areas of Europe.

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## 2.Orkney Islands Story



The Orkney Islands are a small group of islands that lie off the North Coast of Scotland. They have a unique history of interaction with Neolithic populations to the south and by Viking Scandinavian populations from the east. The people of this region pride themselves in their Viking and Scottish roots.

The earliest evidence for human habitation of the Orkney Islands dates to the Neolithic period, around 6,000 years ago. This period is associated with many-chambered tombs and distinctive ceramics, which linked these people to mainland Scotland where they are thought to have originated.<sup>1,2</sup> Evidence for prehistoric hunter-gatherer cultures in the north of the British Isles predates the arrival of agriculture and is limited to a few archaeological sites in the Hebrides and the Western Isles of Scotland. Dating of these sites places human habitation back as far as 8,500 years ago.<sup>3</sup> Challenging environmental conditions at the end of the last Ice Age may have prevented earlier human occupation.

Early Neolithic societies appeared in Scotland about 5,000 years ago.<sup>4</sup> The shift to agriculture is thought to have been slowed by the relatively cold climate and short growing season. In many areas of Northern Britain, archaeological evidence also suggests foraging for food remained long after the arrival of agriculture. The arrival of agriculture brought changes to buildings, which help us identify the transition from Neolithic to Iron Age between 2,500 and 2,000 years ago. Chambered tombs were replaced by circular tombs and drystone towers known as Brochs appeared.

Archaeological evidence - such as stone monuments of a similar style across the Orkneys and other parts of the British Isles - tells us that there was contact between Orkney and the rest of Scotland during the Neolithic and Iron Age. It also shows clear cultural continuities with the Picts, an ethnic group that inhabited a large part of northeast Scotland,<sup>9</sup> during the Iron Age.<sup>8</sup> The strong links between the Orkney Islands and the Scottish mainland would change when Scandinavian invaders, called the Norse, arrived around 800 AD.<sup>10</sup> These invaders took over the islands and maintained control for several centuries. The Norse influx clearly had an impact on the population but archaeological evidence points towards cultural continuity and assimilation between the Norse and the local people.<sup>11,12</sup> Migration to the islands from the Scottish mainland continued both during and after the period of Scandinavian colonization.

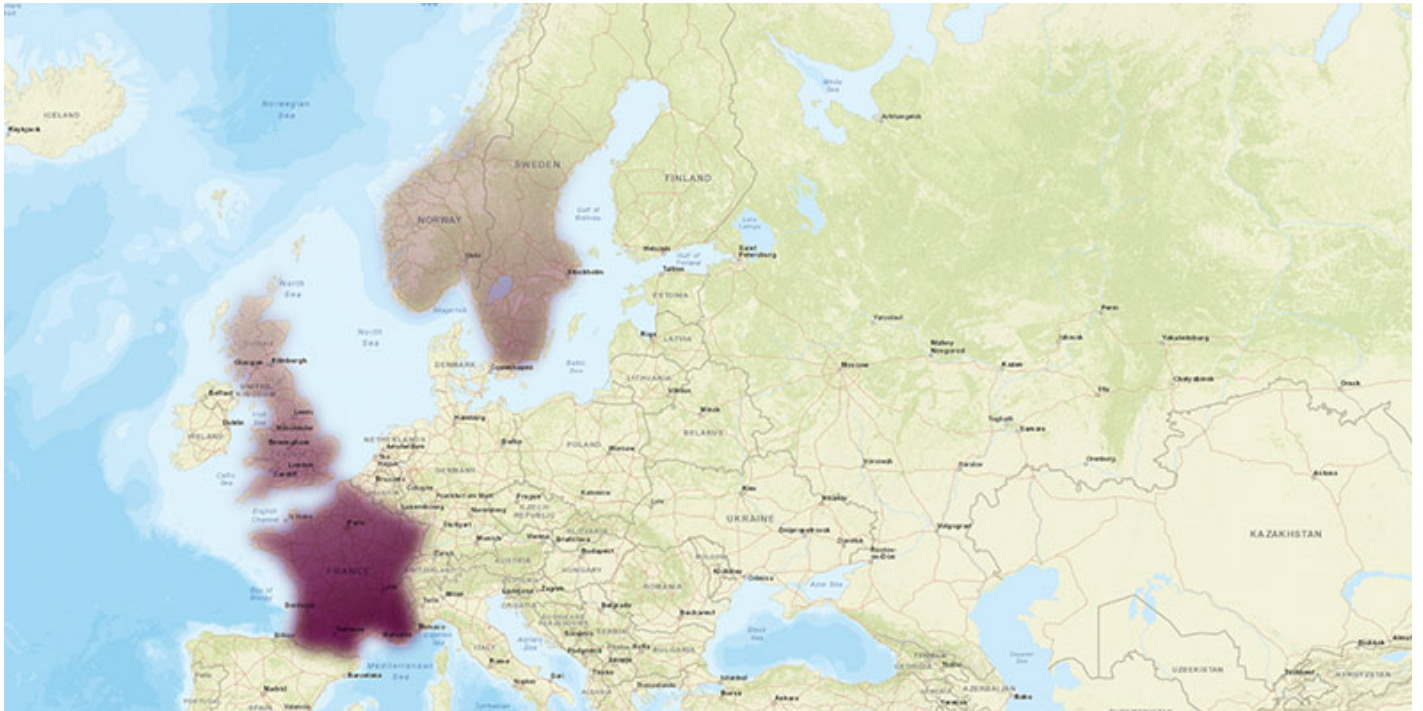
The Orkney Islands eventually rejoined Scotland and have been a permanent part of the country from the 15th century to the present day. While distinguishing between ancient and historic migration from Scotland is currently not possible, recent genetic data supports there is no more than a 40 per cent Nordic contribution in the genetic makeup of Shetland and the Orkney Islands as we know them now.<sup>13</sup>

Future testing may reveal Viking or Pictish ancestry, as well as genes from the more recent movement of people. Separate Y-chromosome and mitochondrial DNA lineages may also reveal mixed maternal and paternal ancestries. Genetic testing of ancient mummies found in the Orkneys may also lead to links with ancient DNA.

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## 3.Southern France Story



Southern France was a major crossroads of Europe with multiple waves of human migration. The people of Southern France today appear to share many common features in appearance with their Mediterranean neighbors. At the same time, the region's position within Europe to the west of the Alps made it easier for people to move between north and south.

Southern France and much of the surrounding area was inhabited by Neanderthals during the Paleolithic era, who became extinct upon the arrival of modern humans between 35,000 to 50,000 years ago.<sup>1</sup> The area was situated at the edge of the Paleolithic ice sheets and was a refuge for people pushed back by worsening climate conditions further north, creating constant movement in and out of the region. The earliest modern humans that arrived in Southern France were Ice Age hunter-gatherers. These people are famous for producing some of the earliest cave paintings known to exist - in the limestone caves of the Pyrenees.<sup>2</sup>

Hunter-gatherer migration persisted for thousands of years and population density remained low. The development of agriculture in the Middle East and its spread into Europe - which started about 12,000 years ago<sup>3</sup> - brought major changes to the region, as large-scale migration of people occurred along the southern corridor of the Alps. These people brought with them their languages, which are believed to be part of the Indo-European language family which exists all over Europe today.<sup>4,5</sup> Nearly all of the currently spoken languages in Europe are thought to relate to this expansion of early farmers. In Southern Europe, this migration south of the Alps links the Latin languages of Italy, Spain, and France, while Germanic languages are found north of the Alps.<sup>6</sup> This suggests that the early farming cultures that arrived in France came through the south and proceeded north.

A Bronze Age culture developed by 1000 BC,<sup>7,8</sup> with settlements throughout Southern France. Over the next thousand years, Iron Age societies began to appear throughout all of France, and became unified as a culture known as the Celts.<sup>9</sup> These Celtic societies formed strong links throughout France and into other parts of Northern Europe. These societies were eventually overwhelmed by the Romans who conquered all of present day France, turning it into the Roman province of Gaul.<sup>10</sup> After the breakup of the Roman Empire, the southern area of France has generally remained within the borders of the Kingdom of France, with economic practices firmly rooted in the cultures of the Mediterranean.

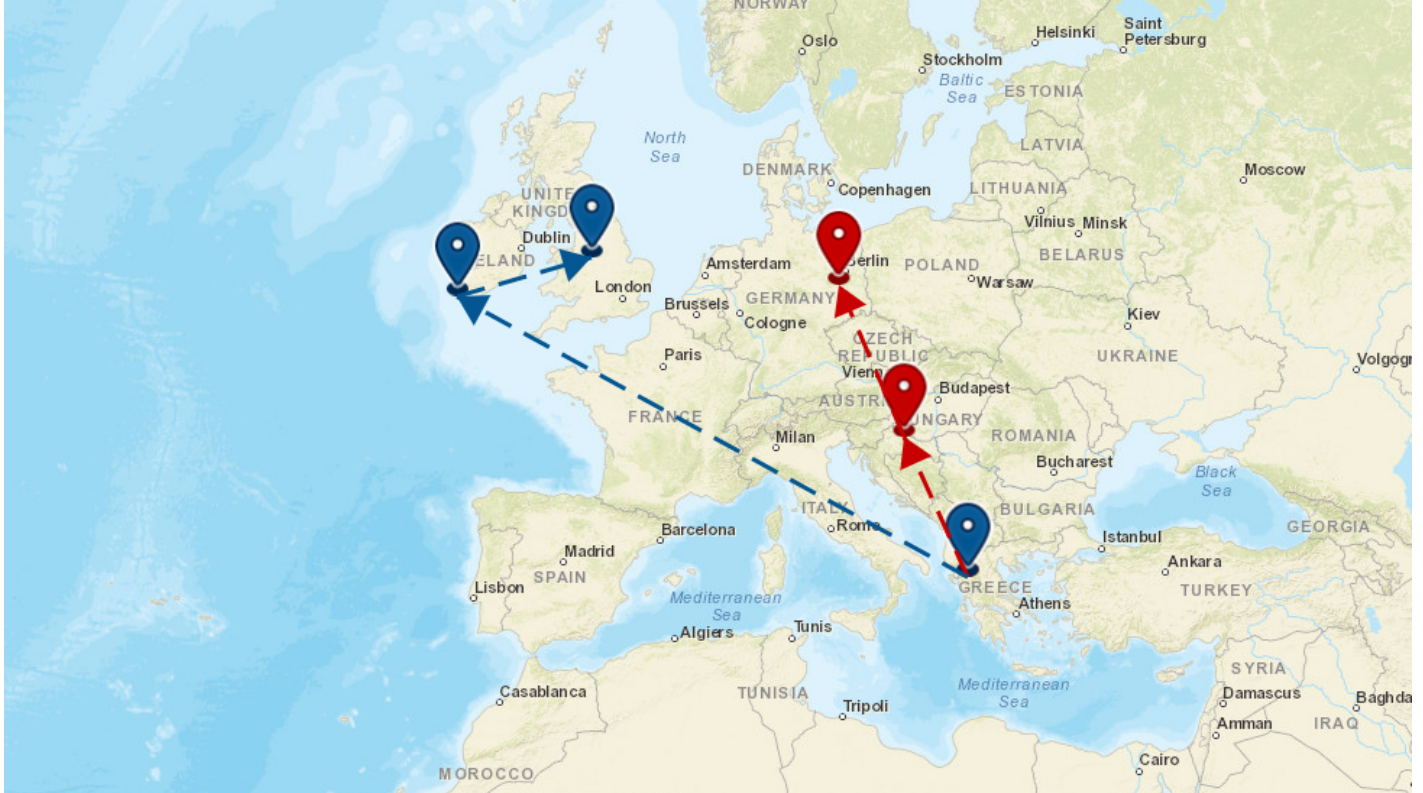
The diversity of languages in the region may hint at populations that were ethnically and culturally distinct from one another. Catalan, Aragonese, and Gascon are Indo-European languages related to the French that are spoken in other areas of the Pyrenees today.<sup>11</sup> Aragonese and Gascon have been in decline in recent centuries. While it may not be possible to link these populations back to the earliest societies in the area, they do provide some grounds for investigating local genetic ancestry.

Future genetic testing may be able to distinguish between early hunter-gatherer influences and later agriculturalists. There have been some studies that have found links between Southern France and its Mediterranean neighbors.<sup>12</sup> Research has also found genetic contributions from other Semitic and North African migration events. In the future, we may be able to distinguish these genes as well. It may also be possible to determine which specific Southern France groups (Catalan, Aragonese, or Gascon) an individual may be related to and what languages their ancestors used to speak.

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# Kristie Sawicki's DNA Migration Routes



## Migration Story A

Date: 582 AD - 1377 AD

Radius: 70.9074miles

Latitude: 39.728

Longitude: 20.832

### Ancient ancestry in Greece

Your ancestors came from Greece prior to 696 AD, so let's take a look at what was going on in Greece up to this point:

#### *The Macedonian Kingdom*

Between 323 BC and 146 BC, Greece was ruled by local leaders in a period known as the Hellenistic period. Greek power was at its height under Alexander the Great, but after his death it was divided into the Ptolemaic Kingdom, the Seleucid Empire and the Macedonian Kingdom. The Greek city-states had a degree of autonomy, but king Philip V failed to unite them against the threat of Rome. By 146 BC, after the First and Second Macedonian Wars, Rome had conquered Greece, made Philip its ally and granted the city-states nominal freedom. At the same time, populations moved from Greece to places like the Balkan peninsula,

Eastern Europe, and the Middle East and Italy during the conquests of Alexander the Great and the subsequent emigration of Greeks across the empire and Europe for trade and colonization activities.

### ***Roman Greece***

Between 145 BC and 330 AD, Greece was ruled by local leaders in a period known as Roman Greece. After the Battle of Corinth, Greece became part of the Roman Empire. Some Greek city-states managed to maintain independence and avoid taxation and the Romans did not replace pre-existing Grecian political and administrative systems. Under Roman rule Greek arts, education and culture continued to flourish and in 212 AD the Roman Empire granted citizenship to all adult men in the Roman world. People migrated from Italy, Albania, Cyprus, Macedonia, Georgia, Bulgaria, and Kosovo and movement around the former Greek Empire to Greece as a result of Roman invasion. At the same time, populations moved from Greece to places like Turkey, Armenia, Albania, and Cyprus and across the Byzantine Empire as Greeks spread widely and were especially respected as teachers and doctors by the Byzantines.

### ***Greece Suffers under the Byzantines***

Between 331 AD and 726 AD, Greece was ruled by local leaders in a period known as the Early Byzantine period. The newly Christian Orthodox Greece and the Byzantine Empire prospered as the Roman Empire declined until, in 364 they split. Greece entered a period of prosperity and progressive reform but from the 4th century onwards, was raided by various tribes including Goths, Vandals, Huns, Slavs and Bulgars. Despite improving fortifications, the Byzantine emperors struggled to keep settlers out of the Greek Peninsular and Greece suffered extensive economic damage. People migrated from Romania, Ukraine, Moldova, Bulgaria, and Turkey and other Byzantine countries to Greece due to the immigration and settlement of Slavic people across Greece and the resettlement of Greek-speaking people from Asia Minor to the Greek peninsula. Skilled laborers, traders and artists moved around the Byzantine Empire looking for work. Bulgars were encouraged to settle across Greece by the Byzantine Emperor. At the same time, populations moved from Greece to places like Kosovo, Macedonia, Montenegro, Albania, and Italy and the Balkan states in response to the expulsion of Slavic people from many Balkans country leaving vacant land and opportunities. The Byzantines frequently moved Greeks around the Empire, as teachers, slaves, soldiers and farmers.

## **Migration Story A**

Date: 979 AD - 1698 AD

Radius: 18.8273miles

Latitude: 45.93

Longitude: 16.966

### **Movement from Greece to Croatia**

At some point before 696 AD your ancestors moved to Croatia. These are the events your ancestors would have lived through in Croatia.

### ***Roman Croatia***

Between 32 BC and 475 AD, Croatia was ruled by local leaders in a period known as the Roman era. In 32 BC Croatia was conquered by the Romans and divided into the province of Pannonia in the north and Dalmatia in the south. The final uprising against Roman rule was suppressed in 9 AD and Croatian

administration and politics underwent Romanizing reforms. As Croatia was a Roman frontier, frequently threatened by raiding barbarian tribes, it had a strong military presence and many fortresses were erected. People migrated from Italy, Greece, Macedonia, Montenegro, Albania, Kosovo and, in smaller numbers, and the rest of the Roman Empire to Croatia as new Roman citizens migrated around the Roman world in search of new opportunities. At the same time, populations moved from Croatia to places like countries within the Roman Empire as Roman the Croats newly acquired Roman citizenship allowed them to seek trade and employment across the Roman Empire.

### ***The Ostrogothic Kingdom***

Between 476 AD and 613 AD, Croatia was ruled by local leaders in a period known as the Ostrogothic period and the Byzantine era. During the Great Migration of tribes across Europe, Emperor Marcian allowed Ostrogoths to settle Croatia under Byzantine authority. In 535 AD the Byzantine Emperor Justinian fully reclaimed the country and established the Theme of Dalmatia. However, in the 560s, waves of Avars from Central Asia, Croats from southern Poland and Slavs decimated many Roman towns and forced Roman Croats to flee to the coast and mountains. People migrated from Scandinavia and Central and Eastern Europe and Asia to Croatia as the nomadic Ostrogoths, Croats, Avars and Slavs began to settle and colonize Croatia.

### ***Christianity and the Carolingian Empire***

Between 614 AD and 809 AD, Croatia was ruled by local leaders in a period known as the Dark Ages. In the 7th century the Croats defeated the Avar Khaganate - a federation of Avars and Slavs in Croatia. Whether the Croats were invited by the Byzantine Empire or waged war on the Avars of their own accord is debated. Around this time Christianity began to spread in Croatia. In the late 8th century the Frankish Carolingian Empire began to expand into Croatia and by 810 the west of the country was under Frankish vassalage. People migrated from Germany, Poland, France, and Czech Republic and Slovenia to Croatia with the arrival of the Croats and the subsequent invasion by the Franks. At the same time, populations moved from Croatia to places like Bosnia and Herzegovina looking for new, uncultivated lands. These Croats were rapidly assimilated with native Romans and Illyrians.

## **Migration Story A**

Date: 696 AD - 1935 AD

Radius: 80.3806miles

Latitude: 52

Longitude: 13

### **Movement from Croatia to Germany**

At some point after 696 AD your ancestors moved to Germany and once they reached there this is what they would have experienced:

### ***Early Germanic Tribes***

Between 100 BC and 394 AD, Germany was ruled by local leaders in a period known as the Archaic period and Late Antiquity. Germany was home to multiple Germanic tribes who frequently emerged victorious against Roman military campaigns, preventing Roman advance into Germany. At the end of the 4th century AD the Huns invaded Germany and many of the native Germanic tribes began to migrate westwards to

escape the rule of the Hunnish Empire. People migrated from Scandinavia and Poland and Eastern Europe to Germany as part of the mass migration of tribes into Germany. Many Danes moved south seeking new lands after crop failures in Denmark. At the same time, populations moved from Germany to places like neighboring European countries as Germanic tribes continued to migrate across the continent.

### ***The Great Tribal Migration***

Between 395 AD and 799 AD, Germany was ruled by local leaders in a period known as the Migration period . During this period there was mass migration of many Germanic tribes throughout Europe; Slavic tribes entered Germany from the east, while the Visigoths sacked Rome and then established a kingdom covering Iberia. The Ostrogoths settled in Italy and the Franks in France and West Germany. Over the proceeding centuries, the Franks came to dominate all of the Germanic tribes and built a vast empire under the Merovingian kings. People migrated from Romania, Ukraine, Moldova, and Belarus and Russia to Germany as a Slavic tribal migration swept across Eastern and Central Europe. Many Slavs settled in the eastern regions of Germany. At the same time, populations moved from Germany to places like Spain, Portugal, Italy, and France and other Western European countries The movement of tribes across Western Europe such as the Suebi who settled in Spain and Portugal, the Visigoths in Iberia, the Ostrogoths in Italy and the Franks in France.

## **Migration Story B**

Date: 582 AD - 1377 AD

Radius: 70.9074miles

Latitude: 39.728

Longitude: 20.832

### **Ancient ancestry in Greece**

Your ancestors came from Greece prior to 224 AD, so let's take a look at what was going on in Greece up to this point:

#### ***The Macedonian Kingdom***

Between 323 BC and 146 BC, Greece was ruled by local leaders in a period known as the Hellenistic period. Greek power was at its height under Alexander the Great, but after his death it was divided into the Ptolemaic Kingdom, the Seleucid Empire and the Macedonian Kingdom. The Greek city-states had a degree of autonomy, but king Philip V failed to unite them against the threat of Rome. By 146 BC, after the First and Second Macedonian Wars, Rome had conquered Greece, made Philip its ally and granted the city-states nominal freedom. At the same time, populations moved from Greece to places like the Balkan peninsula, Eastern Europe, and the Middle East and Italy during the conquests of Alexander the Great and the subsequent emigration of Greeks across the empire and Europe for trade and colonization activities.

#### ***Roman Greece***

Between 145 BC and 330 AD, Greece was ruled by local leaders in a period known as Roman Greece. After the Battle of Corinth, Greece became part of the Roman Empire. Some Greek city-states managed to maintain independence and avoid taxation and the Romans did not replace pre-existing Grecian political and administrative systems. Under Roman rule Greek arts, education and culture continued to flourish and in 212 AD the Roman Empire granted citizenship to all adult men in the Roman world. People migrated from Italy,



Albania, Cyprus, Macedonia, Georgia, Bulgaria, and Kosovo and movement around the former Greek Empire to Greece as a result of Roman invasion. At the same time, populations moved from Greece to places like Turkey, Armenia, Albania, and Cyprus and across the Byzantine Empire as Greeks spread widely and were especially respected as teachers and doctors by the Byzantines.

## **Migration Story B**

Date: 367 AD - 1872 AD

Radius: 98.2481miles

Latitude: 51.583

Longitude: -10.156

### **Movement from Greece to Ireland**

At some point before 224 AD your ancestors moved to around Ireland. These are the events your ancestors would have lived through in Ireland.

#### ***The Irish Dark Age***

Between 100 BC and 299 AD, Ireland was ruled by local leaders in a period known as Irish Dark Age. During this period the Celtic tribes residing in Ireland saw a period of stagnation in economic and cultural progress.

## **Migration Story B**

Date: 224 AD - 1950 AD

Radius: 158miles

Latitude: 53

Longitude: -2

### **Movement from Ireland to England**

At some point after 224 AD your ancestors moved to England and once they reached there this is what they would have experienced:

#### ***The Roman Invasion***

Between 43 AD and 410 AD, England was ruled by local leaders in a period known as Roman Britain. In the 1st century AD, England was invaded by the Romans who, having landed in Kent and defeated local tribal leaders, began to expand northwards. Although England became a Roman province, Roman expansion was frequently met with resistance and revolts from native rulers, such as the warrior-queen Boudicca. In the middle of the 4th century AD, Roman rule began to breakdown. People migrated from Italy and Ireland and the Netherlands to England due to the Romans conquest of England and subsequent settlement, the Gaelic invasions from Ireland in 300 AD and the arrival of Dutch Frisii tribes who settled in Kent.