

Chapter 9

Complexity: A geographic “big idea” and some consequences in Europe

Complex shapes and environments are important, because any big invention will make some places more valuable, depending on their local conditions and connections.

That fact has consequences that can be seen when you look at many maps of Europe - e.g., maps that show cave paintings, ancient empires, forts and battles, mineral and energy resources, factories, trade routes, languages, religions, and especially political history.



The Acropolis of ancient Greece, one of the early civilizations that was located on a peninsula with a narrow connection to the mainland

Introduction – two notes that changed people’s lives

*Dear uncle Toby:
I'm still in shock. Yesterday, a man came to our house. He said the Superhuge Oil Company would give us \$80,000 for the right to drill a test hole. If it strikes oil, the company will pay us \$3000 every month. Can you believe it?*

On the same day, this note was on a desk in another house.

*My dearest family:
Ever since the factory closed, I have been trying to find another job. No one wants to hire an older man with only a high-school education. I don't know any way to solve this problem, so I'm going to leave. I am truly sorry. Maybe the church or the government can help you.*

Can you imagine anything worse than a father running away from his family?

Can you think of anything better than free money?

These two notes seem to be at opposite ends of a good-to-bad scale. They actually have something in common, however. They both describe people who gained or lost as a result of something that happened somewhere else – a big discovery, invention, or company decision.

Question: what does this have to do with geography?

Answer: The same thing happens to places.

This fact is basis for the big geographic idea of this chapter:

In a complex world, every big discovery or invention tends to add value to some places and take value away from others.

This idea has an important consequence: People often get lucky just because they happen to be in the right place at a key time. Other people get hurt because they were in the wrong place. This is the common message in the two notes at the beginning of this chapter.

Remember the basic principle:

Any discovery or invention can help people in some places and hurt people in other places.

You can find examples of this basic principle all over the world.

You can also find examples all through human history.

It is especially obvious in Europe, for reasons we will explore in this chapter. We will not focus on inventors, government officials, military leaders, or other people. You can get that kind of information from a history book or website.

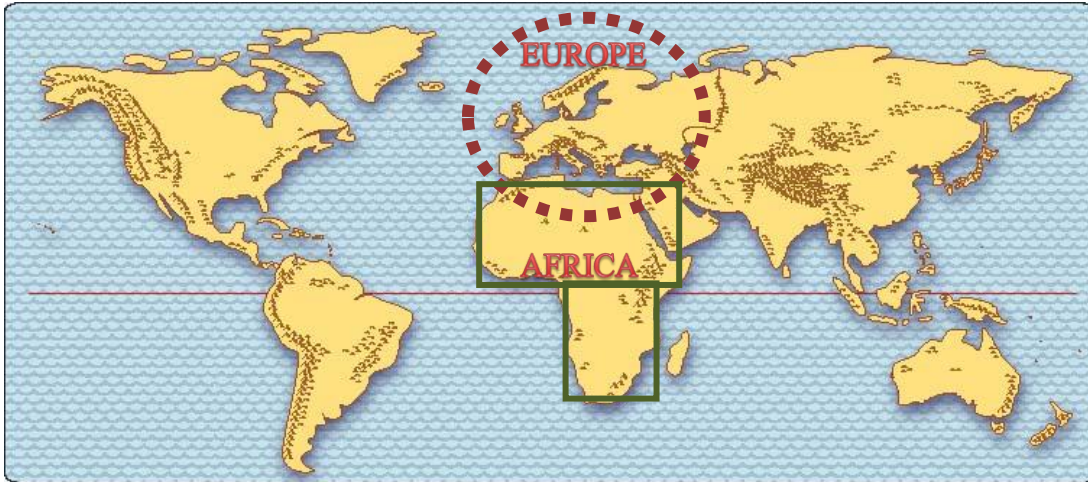
We will focus on the places that gained or lost as a result of discoveries or inventions.

Our goal is to see if we can uncover a few key ideas about the effects of inventions.

These ideas might help us deal with similar changes if they happen to us.

Europe is a good place to explore the importance of inventions. It is a complicated area.

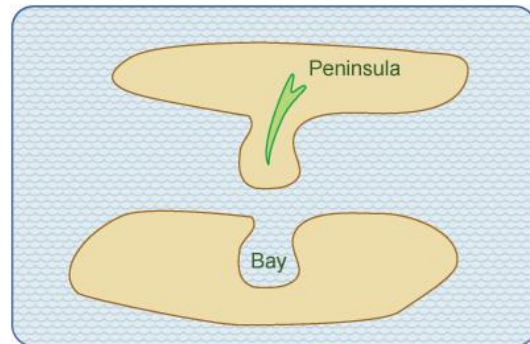
Look at Africa on a map. It has a fairly simple shape. It is basically two boxes – a big one north of a smaller one. Now look at Europe. It has a long coastline with many “ins and outs.” You could say that it looks like an old glove, with fingers sticking out in several directions.



Fingers of land that stick out into water are called *peninsulas*. Areas of water between them are called *bays* or *gulfs* or sometimes *seas*. (Don't try to figure out the logic in the way people use these three names. I'm not sure there is any!)

Definitions: a **bay** is like an arm of an ocean or lake that reaches into the land. It has land on three sides and is connected to the lake or ocean on only one side.

A **peninsula** is like a mirror image of a bay. It is a piece of land that has water on three sides. It is attached to land on only one side.



Compared to Africa, Europe has a lot of bays and peninsulas. Consider these two facts.

1. Europe is less than one-third as big as Africa.
2. Europe has as many miles of coastline as Africa, *plus* Australia, *plus* South America.

Question: Why is the idea of shape important?

Answer: Because a peninsula is like a room with only one door. It's easier to defend against an enemy army, because there is only one way for an enemy to come in. (Attacking a peninsula is easier today, because we have boats, airplanes, helicopters, and drone missiles. This is one reason why these inventions changed history!)

Throughout most of its history, Europe was a good place for different groups of people to live. Each group could have its own peninsula. Safer from attack, they could try to invent things to make life on their little peninsula better. Studying those inventions can help us understand the history of Europe.

It can also help us predict the effects of inventions today. That is a useful skill!

So what are some consequences of life on a peninsula?

Consequence #1: The invention of good ships made life easier on peninsulas and islands.

The ancient Greek people lived on a small peninsula. The shape of their country helped the Greeks defeat a much larger force from Persia. Persia was an empire in Southwest Asia. It was located in the area that is now called Iran. In the year 300 BCE, Persia was the military “superpower” of the world. Most people were afraid of the Persian army.

History books describe a famous battle near a place called Thermopylae. This battle was fought in a narrow area between a high mountain and the seashore. It is marked by a red triangle on this map.

The mountain acted like a “wall” across the “entrance” to the Greek peninsula.

Thermopylae was the “door.”

A small Greek army chose to fight in this narrow gap. They were able to stop a much larger Persian army long enough to give Greek cities time to prepare.

In short, Thermopylae is a good example of the basic principle: a location on a peninsula can help national security.

The big victory came later, and it depended on a key invention: ships with sails and oars that can push in any desired direction.



These ships made it easier for the Greek people to get around in their country. Using their knowledge of the ins and outs of their country, the Greek navy was able to trap a much larger Persian fleet in a narrow bay just west of Athens. In this small area, the Greeks could attack the Persian ships one by one and destroy them.

Their ships also helped the Greeks build forts and trading posts on other islands and places across the sea. Their trading network helped the Greeks get even more wealth and power. Eventually, the Greek people formed one of the great civilizations of the ancient world. History books describe the Greeks as one of the very first *democracies*.

Definition: a **democracy** is a government that allows people to choose their rulers.

We are not saying that democracy *had* to develop in a country of islands and small peninsulas. History is way too messy for a simple cause-and-effect statement like that.

Here is what we are saying. If people want to try a different kind of government, it would help if their country consists of a bunch of peninsulas and islands. That kind of land would be easy to defend (before airplanes, which can cross mountains or bays as easily as flat land).

Can you think of another ancient empire that started on a peninsula in southern Europe?

Consequence #2: The Romans used concrete to make life on their peninsula better.

Shortly after the Greeks, the Roman Empire started. It became the largest empire the world had known up to that time. This empire also started on a peninsula in Europe.

Their peninsula became a much better place to live after the Romans invented concrete.

Seriously!

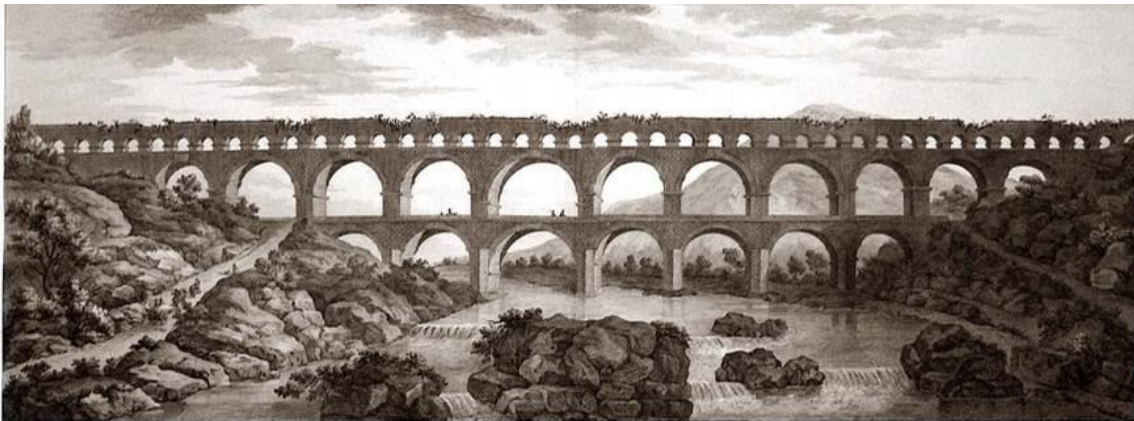
The Roman Empire was famous (and feared) for its powerful army and navy. It was well known for its good roads. It had trading connections with places as far away as the British Isles and China. But something as ordinary as concrete was a key part of Roman civilization.

After they invented concrete, Roman people could build larger buildings than ever before. They could build high walls. They could build a dome for a roof. They could build strong stone bridges. Some Roman buildings have survived storms and earthquakes for 2000 years.

Perhaps even more important, concrete could help people build cities in a place where the summer is really dry. Italy has a climate that is like California. Both places are located near the coast. Both places are about 35 to 40 degrees of latitude away from the Equator. As a result, both places have mild, rainy winters and long, hot, dry summers.

The invention of concrete made it possible to build two really useful structures:

1. **Leakproof tanks** could store water safely, even in a place that has earthquakes.
2. **Aqueducts** could carry water long distances. Here is an old painting of a Roman one.



The Pont du Gard aqueduct was part of a system to carry water 31 miles from a mountain spring to a Roman city on the shore of the Mediterranean Sea. To get an idea of its size, notice the people walking on the road on the left side of the painting. (This is a photograph of a famous 1804 painting by Charles Louis Clerisseau. Do an internet search if you want to see pictures of the Pont du Gard aqueduct today.)

Aqueducts like this helped make the peninsula of Italy a good place to live, in spite of the hot, dry summers. Ancient cities like Rome and Naples are like the modern cities of Los Angeles and San Diego. They all depend on aqueducts to bring water from distant mountains.

In short, the invention of concrete was really important. It helped make it easier to live in a place that has a pleasant winter but a long, dry summer. A long aqueduct can also be used as an illustration of the next effect of a complex environment. This consequence is the simple fact that a small peninsula seldom has all of the resources that people want.

Consequence #3: If you live on a small peninsula, you have to trade (or raid) in order to get things you cannot grow or make in your homeland.

A small peninsula is easy to defend against attacking armies. On the other hand, a small area is not likely to have a lot of different natural resources. It might have some good farmland, or some coal, or iron ore, or tall trees. It is not likely to have all of these resources. As a result, people who live on a peninsula usually have to trade (or raid!) to get the things they want.

Both Greece and Rome built trading posts in many places around the Mediterranean Sea. This simple map shows these with small G's and R's.

Eventually, Roman trading networks reached halfway around the world.

Roman traders brought

- tin from the island country we now call Great Britain,
- copper from Spain,
- grain from North Africa,
- gold from West Africa,
- perfume from southern Arabia,
- pepper and spices from India,
- horses from central Asia, and
- silk from China

The Romans also recruited soldiers, builders, artists, and other workers from distant lands. Many of the strongest and smartest people in the ancient world moved to Rome to make their fortunes.

Roman citizens also moved away to many other places. They went to do jobs as governors, traders, builders, and tax collectors.



Big Point: *Long-distance trading always involves more than just the exchange of goods.*

Trading also helps the spread of people and ideas to other places.

The big question is: who gains the most when people trade? That place will become more powerful as a result of the trades.

We need to ask the same question when we look at the effects of trade in the modern world!

The main point of this page is simple: trade was an important part of the Roman economy. It continues to be an important part of economic geography today.

A lot of Roman trade was by ship on the Mediterranean Sea. In fact, the Romans had a nickname for the Mediterranean. They called it “Mare Nostrum” – which means “our sea.” They traded by ship because it was hard to travel from Italy on land. This is because of the next consequence on our list.

Consequence #4: The same geologic forces that made peninsulas and bays also gave Europe a lot of mountains. These divide the region into many small areas.

Look at a simple map that shows the mountains on each continent.

You can see that Australia has only one big mountain range. These mountains are called the Dividing Range. They form a long line near the eastern edge of the continent. Almost all of the land to the west of the Dividing Range is low. It is also dry. Very few people live there.

The high mountains of South America are in a long line near the west coast. The chapter on South America explained how these mountains were made. Much of the rest of South America is a low, flat plain, covered by the tall trees of the Equatorial rainforest.

Africa has only a few high mountains, in little bunches near the coasts. Most of Africa is a fairly level plateau between two and four thousand feet above sea level.

In short, these three continents have fairly simple patterns of mountains. None of them has high mountains that cut across the middle of the continent and divide one part from another.



Europe is different. It has many separate mountain ranges. Some are like the “backbones” of peninsulas. For example, the Apennine hills are the “spine” of the Italian Peninsula. The Scandinavian peninsula has a line of mountains on the border between Norway and Sweden.

Other mountain ranges are like “fences” that cut across peninsulas. Remember Thermopylae, the only way around a mountain that blocked the “entrance” into Greece? The Alps are a much higher wall that separates the Italian peninsula from the rest of Europe. The Pyrenees are like a fence between the main continent and the Iberian Peninsula (Spain and Portugal.)

Still other mountain ranges cut across eastern Europe. The Carpathian Mountains, for example, form a backwards “C” shape on the map. These mountains now mark the border between Poland and Slovakia. The Dinaric Alps make travel difficult in southeastern Europe. The Transylvanian Alps are an east-west barrier across Romania. And so forth

You do not have to memorize all these names. You can always look them up in an atlas. It is important, however, to realize that Europe has many separate groups of mountains – more than most other areas of similar size. These mountains helped to divide Europe into small areas where people could live in separate groups. This fact was important many times in European history. To see why, we might look at what happened in places that were not protected by mountain barriers. But first, here is a note about mountainous countries.

The Small Mountainous Countries of Europe

Compared to Africa, Australia, or South America, Europe has more separate areas of rugged mountains. You could picture every small valley in a mountainous area as a kind of peninsula. Mountain valleys usually have only one easy entrance.

Putting those facts together can help you understand another fact about Europe:

Europe has always had a number of small mountainous countries. These could stay independent while large empires struggled for power.

Switzerland is the most famous small, independent country. It is a land of snow-capped mountains, glacier-made lakes, ski resorts (and a world banking center!) Switzerland is an unusual country, because it does not have its own language. Instead, it has three official languages. Each one is shared with a neighboring country – Germany to the north, France to the west, and Italy to the south.

Even though Switzerland does not have a common language to unify it, this mountainous country has been an independent democracy for centuries. It also has one of the highest standards of living in the world.

Other small mountainous countries include

1. Andorra, in the Pyrenees between Spain and France,
2. Luxembourg, in the Ardenne Hills between Belgium, France, and Germany,
3. Liechtenstein, in the Alps between Austria and Switzerland,
4. Slovenia, Serbia, Croatia, Bosnia, Kosovo, Albania, and Macedonia in the highlands between Greece and the rest of Europe,
5. And, to the east of this map, Armenia, Azerbaijan, and Georgia are located in the Caucasus Mountains between European Russia and the Asian countries of Iran and Turkey.



You do not have to memorize the names and locations of every tiny country in the world. It is important, however, to realize that small, independent countries are more common in rugged mountainous areas than in large flat plains.

You already know one reason why. It is easier to defend that kind of land.

Consequence #5: Places located on fertile plains tend to be vulnerable to attack

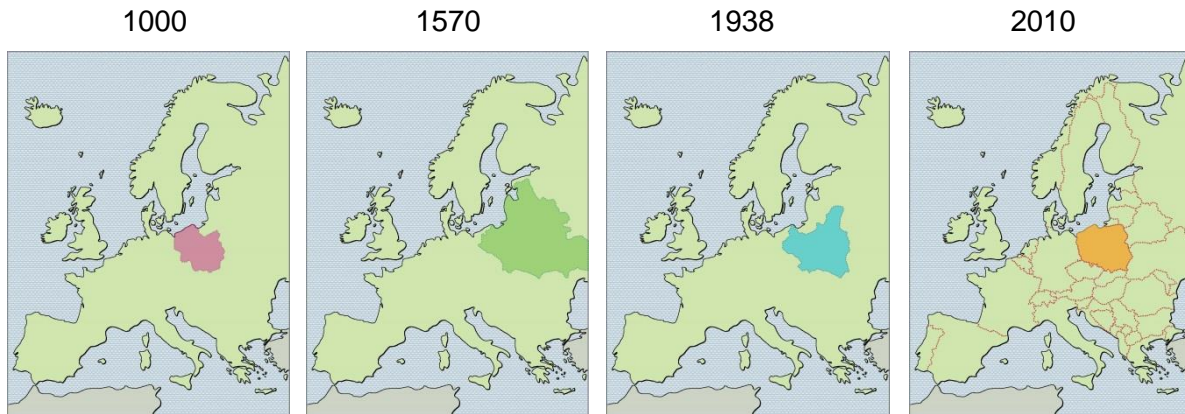
So far, we have seen that ancient people often liked to live on a peninsula or in a mountain valley. Why? Because a homeland was easier to defend when attackers could come from only one direction. (Remember, this was long before helicopters and guided missiles.)

To see the value of a protected location, we could look at some places in Europe that were *not* on a peninsula or in a mountain valley.

One classic example is the country we now call Poland. The Polish people live on the North European Plain. The weather there is good for growing basic foods. The people of Poland had plenty of wheat for bread and cattle for milk and meat. Unfortunately, their land is a nearly flat plain. As a result, enemies could attack from many directions.

The list of people who conquered Poland in the past is like a top-ten list of great historic conquerors. The list includes Saxons, Goths, Huns, Slavs, Vikings, Mongols, Hapsburgs, Napoleon, the Nazis, and the Soviet Union. You can read more about them in a history book or website. Here, we want to make a geographic point. The Polish people ruled their own homeland for only a small fraction of the last 2000 years. The rest of the time, they were part of the empire of some outside power. It was just too easy for armies to invade their land.

These maps show Poland at four key times in its history.



Southeastern Europe has a similar story. It has several areas of rich, flat land. Many outside powers invaded these areas. The invaders included Scythians, Huns, Vikings, Mongols, Ottoman Turks, Nazis, and the Soviet Union.

Several inventions made it easier to attack people on flat land. These inventions include horse saddles, chariots, bows, and arrows. All of these were invented (or improved) by people who lived in grasslands or deserts. These people often had to move great distances in order to find food. Later, people invented cannons, rifles, and tanks. All of these military inventions are easy to use in open, treeless areas. They are less effective in dense forests or steep mountains.

This chapter might give you the impression that European people spent a lot of time fighting wars. That is exactly right. The geographic point is that this long history of war was “helped” by the complex shape of Europe. This shape made it easier for people to form many small independent countries on peninsulas and in mountain strongholds. They could defend their land from other armies, and they could attack people living in places that had less protection.

Two new inventions, however, will change the balance of power in Europe in the 1400s.

Consequence #6: Navigation tools helped several coastal European countries to become worldwide colonial powers.

A magnetic compass is piece of iron that points generally toward the north. Chinese people discovered the scientific idea more than 2000 years ago.

Science note: At first, people did not use compasses for navigation. Rather, they used them to help align houses with “the great forces of the world.” This is a practice called *feng shui* (fung shWAY). There is some evidence that the Olmec people of ancient Mexico also invented something like a compass. They used it in a similar way. A web search can show you how feng shui is having a kind of revival in modern times.

In the Middle Ages, Chinese people began to use compasses to aid travel. Chinese sailors traveled to Africa, Arabia, and Australia. They maybe even went to South America. The idea of the compass reached Europe by about the year 1200.

A compass can point north, but it cannot tell you where you are. To find your latitude, you need to measure the angle of the sun above the horizon. This measurement can tell you how far north or south of the equator you are.

The first angle-measuring tool was described in ancient Greece, about 150 BCE. It was called an *astrolabe*. At first, the only people who used them were astronomers. In the Middle Ages, Muslim people used a similar tool to figure out how to face toward Mecca in order to pray. Europeans borrowed the idea and made it lighter and more rugged.

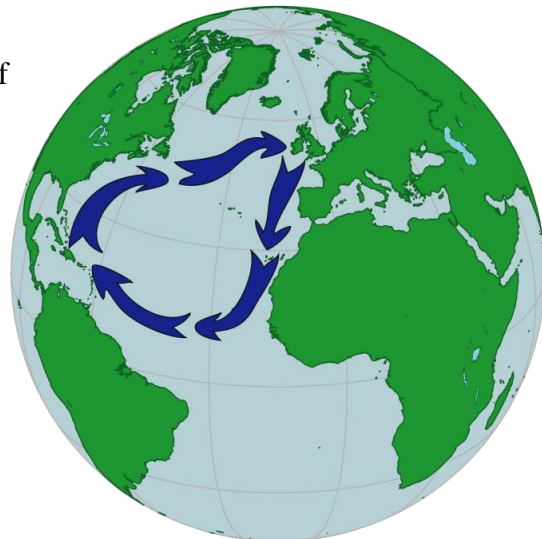
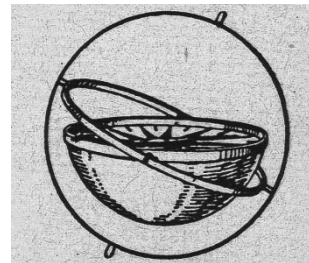
Along with better sails, the new navigation tools allowed long-distance ocean travel. That, in turn, tipped the balance of power in Europe. It made places with good harbors more valuable.

The first ocean explorers came from old Mediterranean port cities like Venice or Genoa. Around 1400, people who lived on the west coast of Europe started to take advantage of one fact: They were located close to “good” ocean currents.

Look at the map. Sailors from Europe could start by “riding the current” south along the coast of Africa. Then, the Trade Winds and currents could push them across the ocean to America.

Then they rode the Gulf Stream north and east along the coast of North America. Winds from the west then pushed the ships back to Europe.

Or they could continue south around Africa (to get valuable spices from India and Indonesia).



By the middle 1500s, European countries were claiming *colonies* on all continents from North America to Australia.

Definition: a **colony** is a distant area that a country captures and claims as its own.

Global comparison: In the 1500s, Europe had dozens of small countries. Things were very different in other world regions. Far to the east, the Ming Dynasty ruled much of what we now call China. The Mughal Empire was gaining control over most of South Asia. The Songhai Empire ruled much of West Africa. In these places, a lack of mountains or other natural barriers made it easier for a single ruler to control a large area. Large empires, in turn, had plenty of resources. As a result, they did not need to travel across the oceans to find more land.

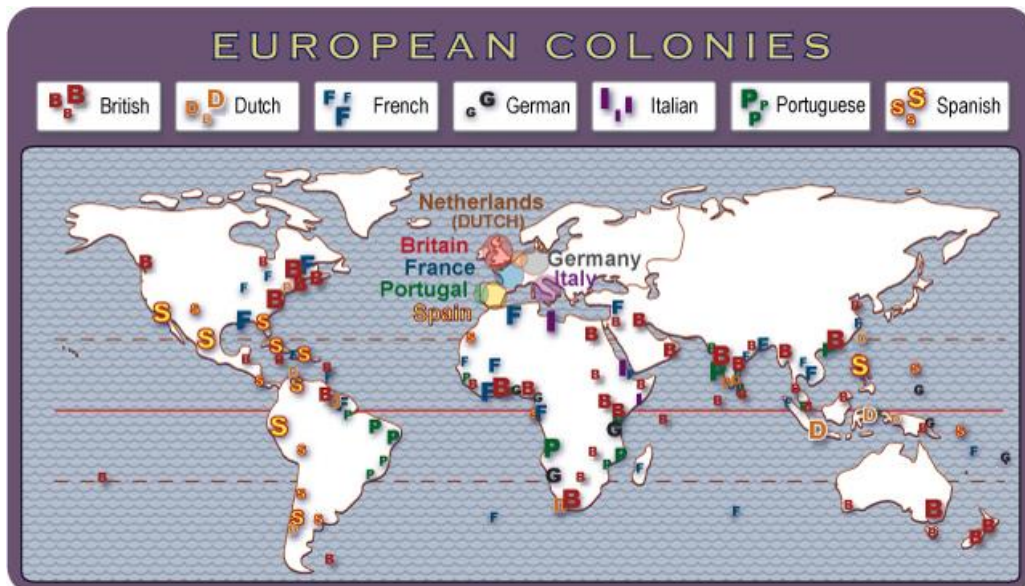
Conclusion: At a time when large empires ruled many parts of the world, Europe was a bunch of small, separate countries. They had a long history of fighting with each other. With new navigation equipment, however, fleets from small coastal European countries could sail all around the world.

Ships and colonies changed the balance of power in Europe. People from coastal countries could cross the oceans to get things they could not get at home. These things included gold, silver, cotton, and spices. They also wanted wood from rainforest trees. (This kind of wood was good for building ships, because it did not rot as fast as wood from European forests.)

People may still argue about the details, but no one can question the overall result:

Starting in the 1400s, European countries fought to claim colonies on other continents.

Worldwide exploration and colonial conquest is a historic fact. It has many effects that we can still observe today. For example, the political borders and economies on every other continent are partly shaped by the colonial activity of European countries.



This map is based on a clickable computer file. This file lets you turn the colonies of individual countries on and off. You can study their patterns separately, or show pairs together. This makes it easier to see where wars were likely (like between Britain and France in Canada or Southeast Asia).

Consequence #7: Steam engines and power looms tipped the balance of power again.

Different areas in Europe were not just separate politically. They also had separate economies. As a result, they did not all follow the same path during the Industrial Revolution.

Definition: In the **Industrial Revolution**, people began using power tools in factories. This started in the middle 1700s, when steam engines became widely used.

Economic growth was based on resources and inventions. (The chapter on Southwest Asia has more about resources.) In just a few centuries, inventors in Europe built the first steam engines and power looms (England), weaving machines (France), microscopes and telescopes (the Netherlands), electric batteries (Italy), diesel engines (Germany), and many other inventions.

Inventions do not happen in a vacuum. They occur in places that have certain conditions. If conditions are good, inventions can help business grow. But conditions are not equally good everywhere. We have already seen that mountains can make travel difficult. This effect was important in European history, but it is not the only effect of mountains. The geologic forces that make mountains can also form deposits of valuable minerals. (The chapter on South America has more about this.)

In short, a complicated geologic history gave Europe two things:

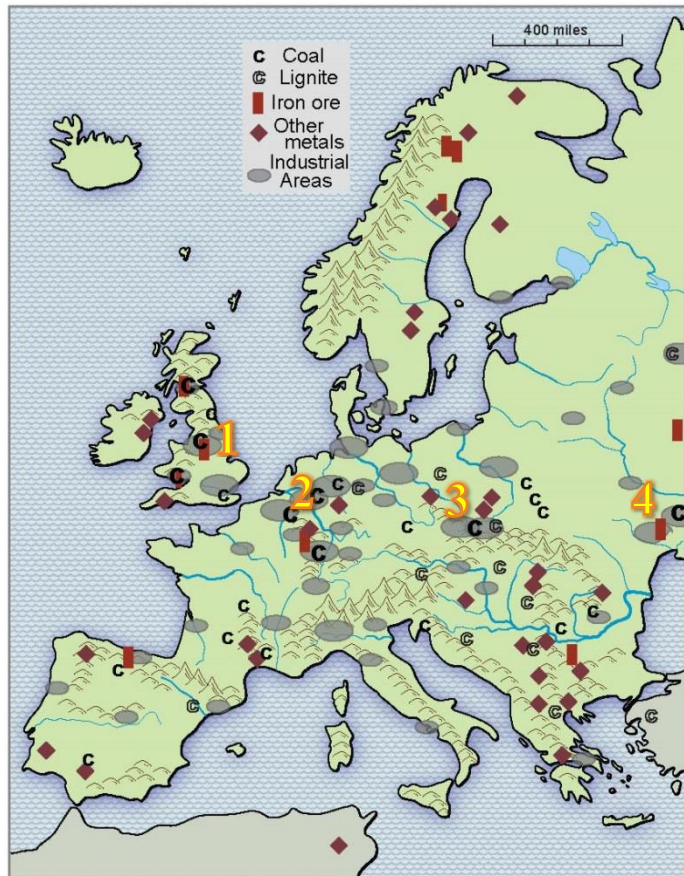
- a lot of mountains, bays, and peninsulas, and
- many separate mineral deposits.

Coal mines, for example, are important in 10 different countries of Europe. People in 16 European countries mine significant amounts of metals. Many of these mines supported separate industrial areas.

Europe had four “big winners” during the Industrial Revolution. These are numbered on the map:

1. the Midlands area of England,
2. the Ruhr Valley of Germany,
3. Silesia in southern Poland, and
4. the Donbas area in Ukraine.

These places had coal and metal ores that were close to each other and easy to mine.



In time, European factories helped European armies and navies to become stronger than the military forces in other parts of the world. This helped Europe during the age of colonialism, but it became a problem in the 20th century. This is the next consequence on our list.

Consequence #8: European rivalries started two World Wars in the 20th century.

In this chapter, we have examined the historic influence of inventions in a complex area. Europe became a bunch of small but powerful countries, rather than a single large empire. From their strongholds on islands, peninsulas, or areas surrounded by mountains, European people often fought against other countries. During these wars, different rulers often gained control of places that were harder to defend. These places include Poland, the Low Countries (Belgium and the Netherlands), or the flat lands around the Black Sea.

In time, people invented better weapons. The balance of power shifted. Coastal places with good ports became more important. Countries fought to claim colonies on other continents.

Then, with the invention of steam engines and blast furnaces, places that had coal and metal ore became more powerful. The wars between European powers became more deadly.

The stage is now set for the World Wars in the 20th century.

Both World Wars started as struggles between European countries. Their armies included soldiers from their colonies. The war also spread through trade links. Finally, some countries joined the wars in other regions. One example is the Japanese invasion of mainland Asia. (Here, it is worth noting that Japan was an island power like Great Britain. Like Britain, Japan was fairly safe from attack for thousands of years, until people made stronger navies.)

The policy of the United States at this time was *isolationist* (“like, don’t get involved”). Then came the sneak attack on Pearl Harbor in 1941. That attack used a new invention – ships that could carry airplanes. Aircraft carriers are another example of this chapter’s big idea!

This big idea is *the geographic effect of inventions*. We’ve already noted some examples:

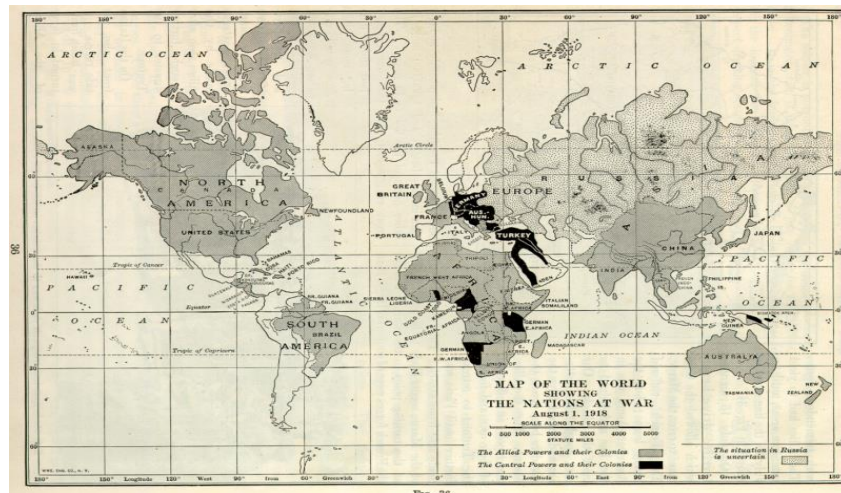
- Sailing ships made the Greek peninsula a better place to live.
- Concrete helped make large Roman cities possible.
- Bows and arrows, horses, and cannons made flat countries like Poland easy to attack.
- New navigation tools helped coastal countries get colonies across the ocean.
- Coal mining, iron furnaces, and steam engines started the growth of industrial areas.
- Aircraft carriers made it possible to attack even isolated islands like Hawai’i.

As noted above, both World Wars started in Europe. Europe in the 1900s was still a region of separate countries that often fought. In the 1900s, however, Europeans had connections with other places all around the world. Troops from America fought in Europe, Africa, Asia, and the Pacific Islands.

1918 government map showing the countries in World War I.

People from the gray areas on the map were on one side.

People from the areas with black color were on the other.

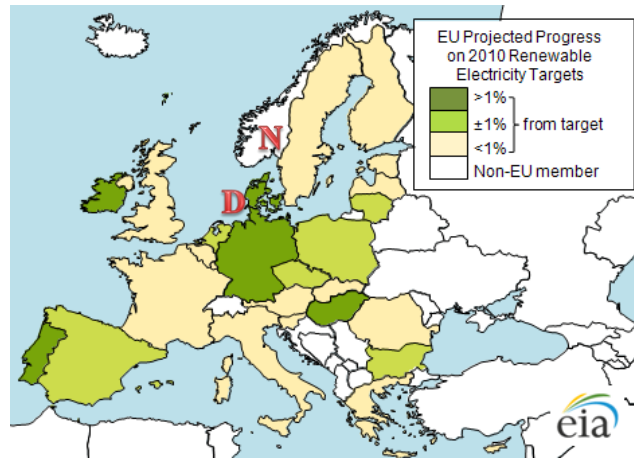


Consequence #9: Ancient divisions make it harder to unite Europe in the 21st century.

After the horrors of World War II, many European leaders decided that things had to change. They tried to invent a new kind of government, in order to prevent future wars. The result was the European Union. The EU removed trade barriers. It made it easier to travel from one country to another. It even made new money for people to use anywhere in Europe.

Some people would like to see a kind of United States of Europe. They think Europe needs a “supra-national” union (a government that has authority above individual countries). Others point out that the countries of Europe still have their own languages and cultures. They are more independent than states in the U.S.

This map, from the EIA (Energy Information Agency), shows how countries of the European Union are cooperating to solve problems (like the fact that Europe has to import a lot of its oil and gas).



Building the European Union is complicated by the old divisions within Europe. While I was writing this chapter, the southern countries (Greece, Italy, Spain, and Portugal) had trouble paying their debts. They asked the EU for help. The governments of Germany, France, and other northern countries are debating how much they should pay to solve the debt problem. Meanwhile, several eastern countries recently joined the Union. They were asking for more help from western countries. They were afraid of threats from Russia, still farther to the east.

At the same time, all of Europe has some new challenges. These include energy, climate change, terrorism, and the flow of migrants and refugees from poorer parts of the world.

Consider the energy issue. Most European countries have to buy oil from other countries. As a result, many people are trying to find ways to heat houses and run cars with less oil.

One answer is a recent agreement between Denmark and Norway (D and N on the map). These peninsulas were the homelands of the Vikings!) Today, Norway is a major oil producer. Even so, it has decided to have a high tax on gasoline. This tax encourages people to use less oil.

Meanwhile, Denmark also has high taxes on gasoline. It used some of this tax money to build wind turbines. These now produce more than half of the electricity used by the Danes.

On windy days, Denmark can sell electricity to Norway. This allows Norway to reduce the power output of its hydroelectric dams. Then, on days when the wind is weak, Norway can release water through the dams and make electricity to sell back to Denmark.

Designing, building, and maintaining this system has created many high-paying jobs. Ideas like this are part of the reason why these countries have high income and low unemployment. Other countries will have to find other solutions, however. That is another consequence of the big idea of this chapter: *Complex problems require solutions that fit local conditions.*

Conclusion – how can the idea of complexity help us understand the historical and modern geography of Europe?

Ultimate cause: The region called Europe had a complex geologic history. As a result, it has many mountain ranges of different ages. Compared to other continents, Europe also has a much longer coastline, with more “ins and outs” (deep bays and long peninsulas).

Big idea: Europe has many different kinds of environment. In a complicated area like this, any big discovery or invention can increase the value of some places and decrease the value of other places.

Consequence #1: The invention of good ships made it easier to live in (and defend) a country made out of peninsulas and islands.

Consequence #2: The Roman invention of concrete made life on the peninsula of Italy better.

Consequence #3: If you live on a small peninsula, you probably have to trade for things you cannot grow or make in your homeland.

Consequence #4: The same geologic forces that made peninsulas and bays also gave Europe a lot of separate mountain ranges. These divide the area into many small areas.

Consequence #5: Places located on flat, fertile plains tend to be vulnerable to attack.

Consequence #6: The invention of navigation tools helped several coastal European countries become worldwide colonial powers.

Consequence #7: The invention of steam engines and power looms tipped the balance of power in Europe. These inventions helped make Germany and England more powerful.

Consequence #8: Long-standing rivalries in Europe started two World Wars in the 20th century.

Consequence #9: Ancient divisions make it hard to build a united Europe in the 21st century.

Putting it all together: The small subcontinent of Europe has a complicated geologic history. This gave it a complex shape with many peninsulas and bays. It also made several mountain ranges that divide Europe into separate areas. The geologic complexity also provides a lot of mineral resources.

Conditions were good in different parts of Europe at different times in history. As a result, the balance of power in Europe has shifted many times in the past.

A long history of political independence and struggle with neighbors, however, can pose problems in the 21st century. As a result, people in Europe are trying many kinds of political and economic cooperation. One goal is to prevent future wars. Another goal is to keep high standards of living. To do this, Europeans must solve problems of energy, climate change, terrorism, and the flow of migrants and refugees from poorer parts of the world.



Putting American History into Global Perspective

In 1776, thirteen North American colonies declared independence and became the United States. At that time, Europe had five coastal countries with powerful navies and overseas colonies. The interior of Europe was a jumble of smaller political areas. Many of them were part of two land-based empires:

The **Hapsburg Empire** had its capital in Vienna. It controlled much of central Europe.

The **Ottoman Empire** had its capital in Istanbul, in modern-day Turkey. It extended eastward into Asia, westward across North Africa, and northward into Europe.

The colonial powers next to the Atlantic Ocean had different physical environments.

- Spain and Portugal shared a large peninsula south of the steep Pyrenees.
- Great Britain was a large island. This was hard for armies from the continent to invade.
- The so-called Low Countries (modern Belgium and the Netherlands) started as a group of coastal ports. These cities had a trade alliance with a navy to protect their interests.
- France was still going through civil wars and military takeovers. It was protected from Spain by the Pyrenees, from Italy by the Alps, and from Britain by the English Channel.

Despite these differences, all of the coastal powers had overseas colonies. With less access to goods from other parts of the world, the interior countries of Europe fell farther and farther behind. If the colonial powers had joined together, they could have ruled the entire world.

But they did not. They remained enemies and fought each other on land and sea.

The American Revolution happened during a time of global struggle between Britain and France. Each country had several allies. A history book or website can give you the details. Here, we just note that many countries were eager to help the Americans against Britain:

- A German officer helped train American troops at Valley Forge.
- A Polish officer trained and led the American cavalry.
- The French navy protected the coast from British attack.
- Spain sent an army to capture Florida and another to attack British forts in the interior.

Later, the French navy helped trap the British army at Yorktown. The British surrendered to an army that was led by George Washington. This army was multi-national, with divisions led by French and German officers. Meanwhile, Spain and Portugal were fighting another war in South America. That war kept Portugal from helping its ally, Britain, in North America. The Dutch fleets fought several battles with British fleets in the North Sea. Another British fleet was fighting the Spanish near Gibraltar. Still another British fleet was fighting near South America. And another British fleet had a series of four battles with the French near India. And Spain and Britain were fighting near the Philippine Islands in the Pacific Ocean.

And so on . . .

In short, in the late 1700s the European colonial powers were fighting each other in many places around the world. The American Revolution was just part of a global struggle, which was the beginning of the end of the colonial era.