Introduction

During the fifteenth and the sixteenth century the states of Europe began their modern exploration of the world with a series of sea voyages. The Atlantic states of Spain and Portugal were foremost in this enterprise though other countries, notably England and the Netherlands, also took part. These explorations increased European knowledge of the wider world, particularly in relation to sub-Saharan Africa and the Americas. These explorations were frequently connected to conquest and missionary work, as the states of Europe attempted to increase their influence, both in political and religious terms, throughout the world.

Causes of the Age of Exploration

The explorers of the fifteenth and sixteenth centuries had a variety of motivations, but were frequently motivated by the prospects of trade and wealth. The earliest explorations, round the coast of West Africa, were designed to bypass the trade routes that brought gold across the Sahara Desert. The improved naval techniques that developed then allowed Europeans to travel further afield, to India and, ultimately, to the Americas.

The early explorations of Spain and Portugal were particularly aided by new ship designs. Prior to the fifteenth century Spain and Portugal largely relied on a ship known as the galley. Although gallies were fast and maneuverable, they were designed for use in the confined waters of the Mediterranean, and were unstable and inefficient in the open ocean. To cope with oceanic voyages, European sailors adapted a ship known as the cog, largely used in the Baltic and North Sea, which they improved by adding sail designs used in the Islamic world. These new ships, known as caravels, had deep keels, which gave them stability, combined with lateen sails, which allowed them to best exploit oceanic winds.

The astrolabe was a new navigational instrument in Europe that borrowed from the Islamic world, which used it in deserts. Using coordinates via the sky, one rotation of the astrolabe's plate, called a tympan, represented the passage of one day, allowing sailors to approximate the time, direction in which they were sailing, and the number of days
passed. The astrolabe was replaced by the sextant as the chief navigational instrument in the 18th century. The sextant measured celestial objects in relation to the horizon, as opposed to measuring them in relation to the instrument. As a result, explorers were now able to sight the sun at noon and determine their latitude, which made this instrument more accurate than the astrolabe.

**Portuguese Roles in Early Exploration**

In 1415, the Portuguese established a claim to some cities (Ceuta, Tangiers) on what is today the Kingdom of Morocco, and in 1433 they began the systematic exploration of the west African coast. In August 1492, Christopher Columbus, whose nationality is still today subject to much debate, set sail on behalf of Ferdinand and Isabella whose marriage had united their crowns forming what is still today the Kingdom of Spain, and on October 12 of that same year, he eventually reached the Bahamas thinking it was the East Indies. In his mind he had reached the eastern end of the rich lands of India and China described in the thirteenth century by the Venetian explorer Marco Polo.

As a result, a race for more land, especially in the so-called "East Indies" arose. In 1481, a papal decree granted all land south of the Canary Islands to Portugal, however, and the areas explored by Columbus were thus Portuguese territories. In 1493, the Spanish-descendant Pope Alexander VI, declared that all lands west of the longitude of the Cape Verde Islands should belong to Spain while new lands discovered east of that line would belong to Portugal. These events led to increasing tension between the two powers given the fact that the king of Portugal saw the role of Pope Alexander VI Borgia as biased towards Spain. His role in the matter is still today a matter of strong controversy between European historians of that period.

The resolution to this occurred in 1494 at the Treaty of Tordesillas, creating, after long and tense diplomatic negotiations between the Kingdoms of Spain and Portugal, a dividing line 370 leagues west of the Cape Verde Islands. Portugal received the west African Coast and the Indian Ocean route to India, as well as part of the Pacific Ocean waterways, while Spain gained the Western Atlantic Ocean and the lands further to the west. «Unknowingly», Portugal received Brazil. King John II of Portugal, however, seems to have had prior knowledge of the location of that Brazilian territory for in the difficult negotiations of the Treaty of Tordesillas managed, in a move still open for debate amongst historians of the period today, to push the dividing line further to the west, making it possible to celebrate the official discovery of Brazil and the reclaiming of the land only in 1500, already under the auspices of the treaty.
Important Portuguese Explorers

Bartolomeu Dias
Bartolomeu Dias, the first European to sail around the Cape of Good Hope, also found that India was reachable by sailing around the coast of the continent. As a result, trade with Asia and India was made considerably easier because travellers would no longer have to travel through the Middle East. Thus, there was a rise in Atlantic trading countries and a decline in Middle East and Mediterranean countries.

Vasco da Gama
Vasco da Gama was the first to successfully sail directly from Europe to India in 1498. This was an important step for Europe because it created a sea route from Europe that would allow trade with the Far East instead of using the Silk Road Caravan route.

Pedro Álvares Cabral
On April 21, 1500, Pedro Álvares Cabral accidentally discovered Brazil while trying to find a western route to the Indies. He first landed in modern-day Bahia.

Ferdinand Magellan
Magellan was a Portuguese explorer sailing in a Spanish expedition, and was the first person to sail the Pacific Ocean and around South America. He attempted to circumnavigate the globe but died in the Philippines, although his crew successfully completed the voyage. One of his ships led by Juan Sebastian Elcana, who took over after Magellan died, made all the way around the globe!

Francis Xavier
Francis Xavier was a Spanish missionary, born in the castle of Xavier, a village near the city of Pamplona, from where he has his name. He was a member of the nobility and during his student years in Paris he became friends with Ignacio de Loiola with whom he would found the Jesuit Order He travelled extensively around Africa, India, the South Pacific, and even Japan and China.

Prince Henry
Prince Henry "the Navigator" financially supported various voyages. He created a school for the advancement of navigation, laying the groundwork for Portugal to become a leader in the Age of Exploration.

Early Spanish Explorers
There were a number of other important explorers that were involved in the Age of Exploration.

Francisco Pizarro
Pizarro was a Spanish explorer who militarily fought and conquered the Incan people and culture, claiming most of South America for Spain. He gained immense gold and riches for Spain from the defeat of the Incan empire.

Christopher Columbus
Columbus, an explorer thought to be of Genoa (Italy), who after many unsuccessful attempts at finding patronship, explored the possibility of a western passage to the East Indies for the Spanish crown. Due to miscalculations on the circumference of the world Columbus did not account for the possibility of another series of continents between Europe and Asia, Columbus discovered the Caribbean in 1492. He introduced Spanish trade with the Americas
which allowed for an exchange of cultures, diseases and trade goods, known as The Grand Exchange, whose consequences, good and bad, are still being experienced today.

**Ferdinand Magellan (Fernando de Magalhães)**
Magellan was a Portuguese explorer who served the King of Spain, and was the first person to sail the Pacific Ocean and around South America. He attempted to be the first to circumnavigate the globe but was killed in the Philippines. His crew managed to successfully complete the voyage under the leadership of the Spanish Juan Sebastian del Cano.

**Vasco Nuñez de Balboa**
Balboa was a Spanish conquistador who founded the colony of Darién in Panama. He was the first to see the Pacific Ocean from America, and he settled much of the island of Hispaniola.

**Hernando Cortés**
Cortés was a Spanish conquistador who assembled an army from the Spanish Colonies consisting of 600 men, 15 horsemen and 15 cannons. Using the assistance of a translator, Doña Marina, he assembled alliances with discontented subdued tribes in the Aztec empire. Through decisive use of superior weapons and native assistance, also the help of European disease which had already wrecked native populations, successfully conquered the Aztecs capturing Montezuma II, the current emperor, the city of Tenochtitlan and looting large amounts of Aztec gold.

**Bartolomé de las Casas**
Las Casas was a Spanish priest who advocated civil rights for Native Americans and strongly protested the way they were enslaved and badly treated. He wrote *A Short Account of the Destruction of the Indies* and *De thesauris in Peru*.

**Juan Ponce de León**
Juan Ponce de León was a Spanish conquistador hailing from Valladolid, Spain. He had served as the Governor of Puerto Rico when he started his own expedition in 1513, discovering Florida on March 27 of the same year and reaching its eastern coast on April 2. He called the land *Florida* (Spanish for flowery), either because of the vegetation he saw there, or it was Easter (Spanish: *Pascua Florida*) that time. De Leon then organized subsequent voyages to Florida; the last one occurring in 1521 when he died.

**English Explorers**

**Sir Francis Drake**
Sir Francis Drake was a letter of marque, one who is a privateer, for Britain during the time of Queen Elizabeth I. Though he is most remembered for helping command the English fleet against the Spanish Armada, he also spent many years in the Caribbean and successfully circumnavigated the world between 1577-1580.

**John Cabot**
John Cabot, originally Giovanni Caboto was born in Genoa, Italy.

**French Explorers**

**Samuel de Champlain**
Samuel de Champlain was the "Father of New France". Founded Quebec City and today Lake Champlain is named in his honor.

**Dutch Explorers**

In the late 16th century Dutch explorers began to head out all over the world.

**Willem Barentsz**

On June 5, 1594 Barentsz left the island of Texel aboard the small ship Mercury, as part of a group of three ships sent out in separate directions to try and enter the Kara Sea, with the hopes of finding the Northeast passage above Siberia. During this journey he discovered what is today Bjørnøya, also known as Bear Island.

Later in the journey, Barentsz reached the west coast of Novaya Zemlya, and followed it northward before being forced to turn back in the face of large icebergs. Although they did not reach their ultimate goal, the trip was considered a success.

Setting out on June 2 1595, the voyage went between the Siberian coast and Vaygach Island. On August 30, the party came across approximately 20 Samoyed "wilde men" with whom they were able to speak, due to a crewmember speaking their language. September 4 saw a small crew sent to States Island to search for a type of crystal that had been noticed earlier. The party was attacked by a polar bear, and two sailors were killed.

Eventually, the expedition turned back upon discovering that unexpected weather had left the Kara Sea frozen. This expedition was largely considered to be a failure.

In May of 1596, he set off once again, returning to Bear Island. Barentsz reached Novaya Zemlya on July 17. Anxious to avoid becoming entrapped in the surrounding ice, he intended to head for the Vaigatch Strait, but became stuck within the many icebergs and floes. Stranded, the 16-man crew was forced to spend the winter on the ice, along with their young cabin boy.

Proving successful at hunting, the group caught 26 arctic foxes in primitive traps, as well as killing a number of polar bears. When June arrived, and the ice had still not loosened its grip on the ship, the scurvy-ridden survivors took two small boats out into the sea on June 13. Barentsz died while studying charts only seven days after starting out, but it took seven more weeks for the boats to reach Kola where they were rescued.

**Henry Hudson**

In 1609, Hudson was chosen by the Dutch East India Company to find an easterly passage to Asia. He was told to sail around the Arctic Ocean north of Russia, into the Pacific and to the Far East. Hudson could not continue his voyage due to the ice that had plagued his previous voyages, and many others before him. Having heard rumors by way of Jamestown and John Smith, he and his crew decided to try to seek out a Southwest Passage through North America.

After crossing the Atlantic Ocean, his ship, the Halve Maen (Half Moon), sailed around briefly in the Chesapeake and Delaware Bays, but Hudson concluded that these waterways did not lead to the Pacific.

He then sailed up to the river that today bears his name, the Hudson River. He made it as far as present-day Albany, New York, where the river narrows, before he was forced to turn around, realizing that it was not the Southwest Passage.

Along the way, Hudson traded with numerous native tribes and obtained different shells, beads and furs. His voyage established Dutch claims to the region and the fur trade that prospered there. New Amsterdam in Manhattan became the capital of New Netherland in 1625.
**Willem Janszoon**

Early in Willem's life, 1601 and 1602, he set out on two trips to the Dutch possessions in the East Indies. On November 18, 1605, he sailed from Bantam to the coast of western New Guinea. He then crossed the eastern end of the Arafura Sea, without seeing the Torres Strait, into the Gulf of Carpentaria, and on February 26 1606 made landfall at the Pennefather River on the western shore of Cape York in Queensland, near the modern town of Weipa. This is the first recorded European landfall on the Australian continent. Willem Janszoon proceeded to chart some 320 km of the coastline, which he thought to be a southerly extension of New Guinea.

Willem Janszoon returned to the Netherlands in the belief that the south coast of New Guinea was joined to the land which he coasted, and Dutch maps reproduced this error for many years to come.

Janszoon reported that on July 31, 1618 he had landed on an island at 22° South with a length of 22 miles and 240 miles SSE of the Sunda Strait. This is generally interpreted as a description of the peninsula from Point Cloate to North West Cape on the Western Australian coast, which Janszoon presumed was an island without fully circumnavigating it.

**Abel Tasman**

In 1634 Tasman was sent as second in command of an exploring expedition in the north Pacific. His fleet included the ships Heemskerck and Zeehaen. After many hardships Formosa (now Taiwan) was reached in November, 40 out of the crew of 90 having died. Other voyages followed, to Japan in 1640 and 1641 and to Palembang in the south of Sumatra in 1642, where he made a friendly trading treaty with the Sultan. In August 1642 Tasman was sent in command of an expedition for the discovery of the "Unknown Southland", which was believed to be in the south Pacific but which had not been seen by Europeans.

On November 24, 1642 Tasman sighted the west coast of Tasmania near Macquarie Harbour. He named his discovery Van Diemen's Land after Anthony van Diemen, Governor-General of the Dutch East Indies. Proceeding south he skirted the southern end of Tasmania and turned north-east until he was off Cape Frederick Hendrick on the Forestier Peninsula. An attempt at landing was made but the sea was too rough; however, the carpenter swam through the surf, and, planting a flag, Tasman claimed formal possession of the land on December 3, 1642.

Tasman had intended to proceed in a northerly direction but as the wind was unfavourable he steered east. On December 13 they sighted land on the north-west coast of the South Island, New Zealand. After some exploration he sailed further east, and nine days later was the first European known to sight New Zealand, which he named Staten Landt on the assumption that it was connected to an island (Staten Island, Argentina) at the south of the tip of South America. Proceeding north and then east one of his boats was attacked by Māori in waka, and four of his men were killed.

En route back to Batavia, Tasman came across the Tongan archipelago on January 21, 1643. While passing the Fiji Islands Tasman's ships came close to being wrecked on the dangerous reefs of the north-eastern part of the Fiji group. He charted the eastern tip of Vanua Levu and Cikobia before making his way back into the open sea. He eventually turned north-west to New Guinea, and arrived at Batavia on June 15, 1643.

With three ships on his second voyage (Limmen, Zeemeeuw and the tender Braek) in 1644, he followed the south coast of New Guinea eastward. He missed the Torres Strait between New Guinea and Australia, and continued his voyage along the Australian coast. He mapped the north coast of Australia making observations on the land and its people.

From the point of view of the Dutch East India Company Tasman's explorations were a disappointment: he had neither found a promising area for trade nor a useful new shipping route. For over a century, until the era of James Cook, Tasmania and New Zealand were not visited by Europeans - mainland Australia was visited, but usually only by accident.
Results of the Age of Exploration

The Age of Exploration led, directly to new communication and trade routes being established and the first truly global businesses to be established. Tea, several exotic fruits and new technologies were also introduced into Europe. It also led to the decimation and extinction of Natives in other nations due to European diseases and poor working conditions. It also led indirectly to an increase in slavery (which was already widely practised throughout the world), as the explorations led to a rise in supply and thus demand for cotton, indigo, and tobacco.

Finally, as a result of the Age of Exploration, Spain dominated the end of the sixteenth century. The Age of Exploration provided the foundation for the European political and commercial worldwide imperialism of the late 1800s. From 1580 to 1640 Spain would inherit the right to reign over Portugal, whose interests where now in the hands of its political and geographical neighbour. Spain's power, under Spanish leader Philip II, was bigger than ever before and renewed and financed the power of the Papacy to fight against Protestant Reformation. However, in the seventeenth century, as the explorations were coming to an end and money was becoming scarcer, other countries began to openly challenge the spirit of the Tordesilas treaty and the power of Spain, which began to lapse and lose its former power.
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