

## Historical Background to the Modern Era

### PART 1: Social Transformation

#### SLIDE 1

Hello and welcome to my historical background lectures for Philosophy 101. This is “The Historical Context of the Modern Period: The Renaissance and the Rise of Skepticism.” An outline for this lecture is available for download on the “Notes” page on my website.

#### SLIDE 2

part 1: Social Change during the Renaissance.

This series of online lectures is designed to provide you with an historical context for reading and understanding early Modern Philosophers like Rene Descartes’ “Meditations on First Philosophy.” In this series of four lectures we’ll examine the social, political, and intellectual transformation that occurred during the Renaissance. We’ll give special attention to three intellectual revolutions that occur during the Renaissance which give rise to the problem of skepticism in early Modern Philosophy: the Scientific, the Geographical, and the Theological revolutions.

#### SLIDE 3

As you read Descartes’ Meditations you’ll discover that he seems preoccupied with the problem of Skepticism: the view that we cannot have significant knowledge. This raises the question, “Why is he so concerned about Skepticism?” What’s happened that has made Skepticism so dominant a feature of the world that Descartes feels he must devote significant time and effort in refuting it? We’ll begin this series of lectures with a brief overview of some of the social factors that gave rise to Skepticism, then we’ll move on in parts 2, 3, and 4 to focus in detail on three intellectual revolutions that would fundamentally transform the way European intellectuals understood themselves and the world around them during the Renaissance and early Modern period.

#### SLIDE 4

So, let’s begin with an overview of the social changes taking place during the Renaissance.

#### SLIDE 5

Rene Descartes is a philosopher of the early Modern period. But in order to understand the concerns of thinkers like Descartes, we need to understand the period that preceded it. Looking at our Timeline of Western Intellectual History we see that between the Medieval and Modern periods lies the Renaissance, literally in French, “the re-birth”. It’s this period between 1350 and 1600 which sets the stage for Cartesian Philosophy, and indeed, much of the Modern era.

#### SLIDE 6

The Renaissance is an age of revolution and upheaval which brings Medievalism to an abrupt end. But what is most unique about the Renaissance is not just that it’s a replacement of one intellectual paradigm with another, but rather that it is a rediscovery of what had once been known. This is why it’s called the “re-birth”: it’s a period characterized by the rediscovery of knowledge from the Greeks, the Hellenists, and the Romans, most of which has been lost to Europe since the collapse of the western Roman empire in the Fifth Century. But the Christian crusades of the high middle ages would reintroduce this lost knowledge as it had been preserved in the great Islamic libraries in the Levant, North Africa, and Moorish Iberia. As the crusaders invaded and conquered Muslim territories one of the prizes soldiers could claim were books, copies of ancient authors translated into Arabic, and highly valuable back home in Western Europe.

But the reintroduction of ancient authors was insufficient in itself to have caused the Renaissance. The real transformation came about because of massive social upheaval caused by the collapse of the Medieval economic system known as Feudalism.

#### SLIDE 7

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At its core it is a hierarchical social structure with an aristocratic monarch (or warlord), usually hereditary, supported by vassal warriors, who in turn are supported by vassal land owners, or yeomen, free-tradesmen and finally peasant surfs (and in some cases slaves). The warrior vassals, or knights, hold positions and titles by the consent of their lord. Their titles and holdings are earned through competition to provide economic and military aid to the lord, and are not necessarily hereditary. Losing the favor of one's lord could result in the loss of title, land, and status.

## **SLIDE 8**

The other vital structure of Medieval society was the church. With the collapse of the Roman Empire in the west, the Latin, or Roman, church was virtually the only part of civil society to survive. As such it became the primary link to the stability and glory of the past, as society slipped ever further into the chaos of the dark ages. And, the church would continue to play a vital role in the social order of Europe, even in the face of de-urbanization and the collapse of the Roman imperial bureaucracy. The church would adapt itself, first to the chaos of the early Middle Ages, then the reorganization and nascent bureaucracy of the Carolingian empire of the Ninth Century, then later to the Holy Roman Empire (which was neither holy nor Roman). The church was, in actuality, the only truly international organization that existed in Western Europe during the Medieval period. As such, the church would continue to play a central role in the political life of Europe. Any descendant of the Germanic hordes that caused the collapse of the Roman Empire who fancied themselves worthy enough or powerful enough to rule over some small bit of the shattered remains of old Rome, would need the church's blessing. To be associated with the Church was to be associated with Rome, and that, if nothing else, gave the appearance of legitimacy.

## **SLIDE 9**

But the Church needed the motley band of would-be kings and emperors, as these petty war-lords like to call themselves, as much as *they* needed the Church. From its inception the Christian religion has been a phenomena of the urbanized Roman world. It depended on the infrastructure of Roman civil society, even during the periods when it was considered an illegal religion. When it became the official religion of the empire in the Fourth century, it found its way into every corner of society, both secular and sacred. But now the empire was gone, destroyed by a combination of unsustainable foreign, economic, and domestic policies, and the Church was threatened as well. It needed political stability, it needed hierarchy, it needed bureaucracy to survive and if there was no empire to provide it, the church would just have to reinvent it.

## **SLIDE 10**

The complexities of this co-dependent relationship between church and state can be most clearly demonstrated in a controversy that raged through most of the medieval period. The "Lay-Investiture" controversy, as historians call it, was an ongoing debate between the secular and sacred powers in society concerning who was really in charge of things here on earth. The Church had held, at least since St. Paul, that secular society was ordained by God to punish those who would be naughty. This view of the state as a divine instrument of punishment was further articulated by St. Augustine in his Fifth Century masterpiece of political philosophy, the "City of God." But both Paul and Augustine lived in times when Romans were less interested in being Christians, than Christians were keenly interested in being seen as good Romans. After all, the first step in surviving in the Roman world was to demonstrate that you were not a threat to the empire. And since Christianity had evolved as an oriental mystery religion from the province of Judea (the most troublesome province of the entire empire), early adherents of the new religion tended to go out of their way to argue that their religion was not a threat to imperial order. (The few times and places where early Christians didn't adopt this pragmatic approach and instead emphasized the separatist nature of their religion, ended with them being used as human torches or fodder in Roman games.)

But just as the western half of the empire was about to collapse, the church was elevated to be the official imperial religion. This would give tremendous status and power to bishops of the church, and none more than the bishop of Rome.

But now the empire was just a memory, and as the various leaders of Germanic tribes like the Franks, the Goths, the Saxons and Jutes struggled to build kingdoms out of the rubble of Rome, the Church would insinuate itself in the new emerging political order, first by conversion, then by practical need (the church could provide literate scholars to keep court records which any aspiring dynast needed). As the period wore on, the emerging Medieval kingdoms, and the religion of the ancient empire they all aspired to emulate, became more and more entangled. But, was it the Pope who gave authority to the kings, or was it the kings who gave authority to the Pope? It didn't help matters that just about every time they'd get things running smoothly a new gang of invaders like the Moors or the Vikings would show up and throw the whole system back into chaos and they'd have to start all over again.

## **SLIDE 11**

What we can say with some confidence is that Feudalism, as an economic and political system, seems to emerge when societies lack sufficient complexity and bureaucracy to provide a uniform and sustainable infrastructure that allows for large and complex institutions. Whether in post-Roman Fifth Century Europe or after the end of the Heian period in Twelfth Century Japan, Feudalism seems to emerge naturally to fill the gap when more stable and complex societies collapse.

## **SLIDE 12**

But the Feudal system in Europe came to a crashing halt in the Fourteenth Century with the Plague of 1346. *Yersinia pestis* bacteria arrived on the shores of Europe from Asia in the guts of rat flees. With a single bite, a flea could transmit an infection of the lymphatic system that could cause death in humans in as little as four days. Though a mercifully short time, the four days of infection were by all accounts horrific.

## **SLIDE 13**

Bubonic plague takes its name from the main symptom of the disease: swelling of the lymph nodes, called buboes, throughout the body. Other symptoms of infection included high fever, muscular cramps, seizures, bleeding from the ears, vomiting and acral gangrene or necrosis of the fingers, toes, lips and nose.

## **SLIDE 14**

Because people lived in very close proximity with their animals in the Middle Ages, flea infestation was ubiquitous. Infection thus spread across Europe like wildfire, and the suffering and death that followed seemed apocalyptic.

## **SLIDE 15**

No one seemed to be spared from the horror of the disease. No corner of society was left untouched. Neither piety,

## **SLIDE 16**

nor wealth,

## **SLIDE 17**

nor social status was a shield against the dance of death.

## **SLIDE 18**

By the time the infection burned itself out in 1350, one in three Europeans were dead. Imagine that for a moment. For every three people you know, one of them would have died of the Black Death.

Of course, death rates were not evenly distributed across Europe. In some cases entire villages or towns would be wiped off the face of the earth, in other places, pockets of population would be spared. But one thing was certain: life would never again be the same.

For those who survived the horrors of infection and death, there was no need to go back to the old Feudal system. The plague had sufficiently culled the population of Europe ensuring the survivors a better life, than would have been possible before. The plague created a windfall of wealth to the survivors and that, in turn, set in motion an economic recovery not witnessed in Europe for centuries.

New found wealth created demand for goods that had previously been reserved for the aristocratic noble class. That demand led to expanding markets and increased international trade. Ironically, it was the very trade routes that brought the plague into Europe in the first place, would directly benefit from the death of its victims.

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## **SLIDE 19**

Increased distribution of wealth and its attendant increase in demand for trade goods fueled a revival of market economics not seen since the collapse of imperial Rome.

## **SLIDE 20**

The collapse of feudal economics brought about by the Plague of 1346 along with the economic recovery of 1350 also caused a shift in European political organization. While a class system would remain a part of European culture throughout, some would argue even to the present, the strict hierarchy of Feudalism would collapse with the Renaissance, and an entirely new political structure would evolve from the ashes of Medievalism.

## **SLIDE 21**

For a time there would even be a revival of the polis, or city-state, as it had existed in the Classical period.

## **SLIDE 22**

The great merchant city-states of Italy like Florence, Padua, and Venice would strive to re-create the past glory of Classical Greek city-states like Athens, or Corinth, or Ephesus.

While the social transformation of Europe in the early Renaissance was drastic enough, it would pale in significance when compared with the intellectual transformation that was about to occur. We'll examine that in detail in the following parts of this lecture series on the Renaissance and the Rise of Skepticism.

## **SLIDE 23**

Now, let's summarize what we've covered in this lecture.

## **SLIDE 24**

We've seen that the Renaissance, the period between the Medieval and Modern periods, was characterized by significant social transformation set in motion by the great bubonic plague of 1346.

With a third of the population of Western Europe dead, the labor pool that supported the Feudal economic system began to collapse.

Those who survived the years of plague also received a windfall due to the increased wealth suddenly available through inheritance. This new disposable income fueled a demand for foreign goods which led to an increase in international trade.

The collapse of the feudal system also caused a political vacuum as the old political structures of Medieval society disintegrated. New political hegemonies emerged to fill the gap, so we see that the Renaissance is a period of political experimentation not seen since the Classical period.

All these factors combine to create a sense of skepticism in Renaissance society. Divine benevolence once thought to characterize all of creation, now seemed naive in the face of so much random death and suffering. Perhaps the divine plan didn't include a benevolent disposition toward humanity. Perhaps there was no divine plan at all. But certainly the role that religion played as an explanatory model for the observable universe would come under increasing scrutiny as time moved on.

As for politics, well, the old order of church-supported feudal states was fast coming to an end. The resurrection of city-states, and all that's included in the re-urbanization of European society, would increase the sense of individual worth as the concept of citizenship would be revived from the classical models of political theory. This would give rise to an every increasing sense of entitlement that would finally come to fruition in the early Modern period with the rise of the nation-state. The seeds of the liberal political tradition of universal liberty and the rights of man were being planted in the soil of the Renaissance which called into question the entire social and political structure of the Medieval world.

## **PART 2: The Scientific Revolution**

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### **SLIDE 2**

part 2: The Scientific Revolution."

### **SLIDE 3**

Beyond the economic and political upheaval discussed in part 1 of this lecture, the Renaissance would witness three revolutions in thought that would turn the Medieval world-view inside out.

It would begin with the Scientific, or astronomical revolution, caused in part by the quest for a more accurate calendar for the Catholic Church.

The Geographical revolution would simultaneously transform the European understanding of the physical world, and the Theological revolution would forever transform the European understanding of religion.

#### SLIDE 4

This lecture will focus on the Scientific or, if you prefer, the astronomical revolution, sometimes called the “Copernican Shift”. This revolution in astronomy would cause a whole-sale rejection of Aristotelianism. It’s important to keep in mind that for the latter part of the Medieval period, it was Aristotle’s that served as the intellectual framework for knowledge, both secular and sacred.

St. Thomas Aquinas’ 13<sup>th</sup> Century synthesis of Aristotelianism and Christianity provided a powerful interpretive model combining systematic philosophical reasoning with orthodox Christian theology, much as St. Augustine’s synthesis of neo-Platonism and Christianity had done in the late Roman period. If you had a question about the world, the answer was provided by Aristotle’s common sense Philosophy, or by special revelation mediated through the Church. And, thanks to St. Thomas’ work, it was thought that there was no inconsistency between these two systems.

Copernicus’ revolutionary hypothesis of heliocentricity would be advanced by the astronomical observations of Galileo Galilei, made possible by the newly improved refracting telescope. But beyond confirming Copernicus, Galileo’s work served to establish empirical observation as a central tenet of Science in the Modern age.

We’ll conclude part 2 of this lecture with an overview of Johannes Kepler’s insight into the nature of planetary motion, and discover how his work would forever bring to an end the *a priori* approach to scientific knowledge championed by Aristotle.

#### SLIDE 5

St. Thomas’ synthesis of Aristotle’s philosophy and Christian theology had ruled the intellectual world for the last three centuries of the Medieval period. But the perpetually nagging problem of determining the date of Easter, the most important holy day of the Christian calendar, would bring it all to very messy end.

To understand the problem, we need to understand three things: first, *what’s* the controversy about the celebration of Easter in Medieval Catholicism, second, *what* exactly is a calendar, and third, *why* does the Medieval calendar need to be fixed in the first place?

Without going into the minutiae of the Quartodecimanian heresy, let’s just say that since at least the 2<sup>nd</sup> Century of the Common Era, Christians had significant disagreements about when to celebrate Easter, the day of Jesus’ resurrection. The authors of the synoptic gospels (Matthew, Mark, and Luke) had used the traditional Jewish dating system based on a lunar calendar, to date Jesus’ death and resurrection. But the new Christian religion that emerged in the century after Jesus, preferred to identify itself with the Roman Empire as a whole, rather than the Jewish province of Judea. Thus, they adopted the imperial solar calendar (which had problems of its own which we’ll get to in a moment). Calculating the differences between the Jewish lunar calendar and the imperial solar calendars led different bishops in different regions of the empire to fix the celebration of Easter on different dates. The First Council of Nicaea further complicated matters in the 4<sup>th</sup> Century by mandated that Easter be celebrated on a Sunday, which by that time had become the primary day of Christian worship, regardless of the date of the month on which Easter actually fell. Add to that the continual struggle of the bishops of Rome to superimpose their authority over the other bishops of the church, the linguistic and cultural struggles that ensued when Constantine moved the capital of the empire to Byzantium in 324 CE (renaming the city Constantinople), and the general decline in literacy and numeracy that accompanied the collapse of the Western half of the empire in the 5<sup>th</sup> Century, and what you’ve got is one big ‘ole mess.

By the mid 7<sup>th</sup> Century, at the Synod of Whitby, the Celtic church, the last hold-out for an alternative dating of Easter among otherwise orthodox Latin Christians, finally accepted what was called the Alexandrian *Computus*, and a general consensus of dating Easter was achieved. Never mind that the Irish mathematicians were probably more competent than their Mediterranean brethren, consensus was consensus; at least in the West. The eastern half of the Roman Empire, now referred to by historians as the Byzantine Empire, completely ignored the Western consensus, and the Orthodox churches of the east celebrate Easter on a completely different calendar than the Latin or Western churches to this very day. But that’s another story altogether.

So, for the purposes of this lecture, let’s just say that for a very long time, a lot of people argued about the date of Easter, and when consensus was finally achieved, no one wanted to rock the boat, for fear of starting the debate all over again.

But even though everybody, at least in the Latin Church, agreed on a single *method* for computing the date of Easter, when they actually got around to running the numbers and setting the *date* on the calendar, our second problem occurred.

If you’ve never stopped to think about it, a calendar is just a kind of clock. It tells us what time it is. Not in second, minutes or hours, but rather in days, months, years, decades, centuries, millennia, etc. A clock is a device we use to measure the passing of time on the

scale of a single day. A calendar is a device we use to measure the passing of time on a cosmic scale. A calendar tells us where the heavenly bodies, the hour, minute, and second hands on our cosmic clock, will be at any given time in the future. And, just like a clock, a calendar is useful in direct proportion to its accuracy. And THAT was the problem the church was struggling with in the Renaissance: the Julian calendar that was supposed to enable the church to predict when Easter would happen in the future was, like a cheap wristwatch, not keeping very good time. They found that every so often they had to reset the calendar to keep it in sink with the position of the heavenly bodies, which could be observed with the naked eye.

This brings us the core of the problem: WHY was the Medieval calendar so inaccurate? And what, if anything, could be done to fix it?

## **SLIDE 6**

To understand why the Medieval calendar was inaccurate when projecting dates further and further into the future, we have to understand that it rested on Aristotle's model of physics and Claudius Ptolemy's model of astronomy.

According to Aristotle, the motion of any body is determined by its substance: the nature of the substance dictates how that substance, or an object made of it, will move. Earthly or terrestrial bodies are composed of the four terrestrial elements:

Earth, Water, Air, and Fire (Aristotle's periodic table was much simpler than ours!). Now, the nature of these four terrestrial elements is to be temporal and movable. Thus, earthly substances can either be in motion or at rest. Their natural state would be at rest, so if a body is in motion, it is moving toward its natural state. A body already at rest will remain in that state unless disturbed by some outside force. Also, the terrestrial substances are distinguished from one another by their density. Earth is the densest, or heaviest substance, followed by Water, then Air, and finally Fire, the lightest of the elements.

So, if we could separate the elements from one another they would naturally form four concentric spheres, with Earth stuff forming the inner-most sphere, surrounded by a sphere of water, which in turn would be surrounded by a sphere of Air, which would be surrounded by a sphere of Fire.

## **SLIDE 7**

This diagram demonstrates the four earthly elements in their natural state. Of course, we don't have a cosmic centrifuge so we can't separate the elements from one another. Thus the objects we find in the terrestrial world are a mixture of the four elements, but each will be dominated by one or two of the four elements. And each object, being dominated by an element, has a natural tendency to seek the shortest path to its natural state. Thus, Aristotle concluded, earthly bodies always move in straight lines toward their natural place in the universe, a state of rest.

## **SLIDE 8**

But in the heavenly realm, things move in a very different way. The heavenly or celestial bodies, the sun, moon, planets and stars, are not made of the four terrestrial elements. Being heavenly bodies, divine bodies, they must be composed of a celestial, divine substance: this is the fifth element – Aether.

Aetherial substance, like terrestrial substance is movable, but unlike terrestrial substance it is eternal, without beginning or end. Hence the motion of the aetherial bodies of the celestial realm, is, According to Aristotle, circular: without beginning or end.

## **SLIDE 10**

Thus, according to Aristotle's physics the Earth, being composed of the heaviest elements, must be at the center of the universe with the Moon, Mercury, Sun, Mars, Jupiter, and Saturn and finally the fixed stars rotating around the fixed Earth because they are composed of the lighter aetherial element.

Now, you might wonder why the celestial bodies in Aristotle's system are not all fixed on the same sphere since they're all made of the same perfect heavenly substance. But as everyone who has ever closely observed the heavenly bodies knew, some of the heavenly bodies wandered about in the sky, while the constellations do not. This observation is what astronomers call retrograde motion. That is, some bodies in the heavens seem to move forward, then backward, then forward again, against the backdrop of the fixed stars. This wandering motion caused the Greeks to name these bodies "planets" or wandering stars. The Sun moved in a very different, though still eccentric way, getting closer then further away from Earth at different times of the year which we call seasons. This odd behavior of the planets and sun didn't seem to obey the laws of motion dictated by Aristotle's physics. Thus, he concluded that the heavenly spheres must have different spacial locations in the heavens.

## **SLIDE 11**

This odd planetary and solar behavior was resolved by Claudius Ptolemy in the 2<sup>nd</sup> Century of the Common Era. Ptolemy proposed

two hypotheses to account for the irregular behavior of the celestial bodies while remaining consistent with Aristotle's laws of motion.

## **SLIDE 12**

To account for the seemingly erratic behavior of the planets Ptolemy proposed the Epicyclic Hypothesis.

This hypothesis held that the planets moved on a sub orbit around the Earth called an epicycle. As the planets moved on their epicycle, it appears, from our point of view that it is moving backward and forward as it rotates around its axis which forms its circular orbit around the Earth.

To account for the odd behavior of the Sun, Ptolemy proposed the Eccentric hypothesis

The Eccentric hypothesis held that the deferent, or radius of the Sun's orbit, is not directly centered on the earth, but rather at a short distance from the Earth. This accounts for the Sun's moving closer to and further away from the Earth during winter and summer.

## **SLIDE 13**

So, combining Aristotle's physics together with Ptolemy's synthesis of observed motions of the heavenly bodies, we get the Geocentric, or Earth-centered picture of the cosmos. In order to get all the celestial bodies in the right place at the right time to match our observations requires some 40 different epicyclical or eccentric orbits.

The nice thing about Ptolemy's system is that it worked. His model could account for all our observations about the movement of the heavenly bodies, and it didn't violate Aristotle's laws of motion which everybody just knew, and indeed which common sense seemed to confirm, was correct.

The problem with Ptolemy's system was the amount of calculations required to predict all the epicycles and eccentric orbits of the heavenly bodies. Let's just say it was a lot of math. And, Ptolemy's was doing the calculations using the whole numbers of the Roman mathematical system (zero and decimals had yet to be invented!). Needless to say, the further you calculated into the future to build your calendar, the more errors began to creep into the system. Thus, over time, the calendar became less and less accurate.

## **SLIDE 14**

And this is the problem that Nicolas Copernicus was trying to resolve. But after carefully studying Aristotle and Ptolemy, he concluded that Ptolemy's geocentric system really was the best possible synthesis of Aristotle's physics and our ordinary observations of the retrograde motion of the planets. However, if one were to change the initial assumptions about the motion of bodies, that is, if one were to ignore Aristotle's explanation of why bodies move the way they do, and if one placed the sun at the center of the cosmos instead of the Earth, one would eliminate the need for Ptolemy's eccentric orbits and epicycles.

Adopting a heliocentric, or sun-centered model of the heavens got rid of all the extra math. And, according to Ockham's Razor, we should never unnecessarily multiply our hypotheses (that is, don't make things more difficult than they have to be). So, the heliocentric model had a lot to offer those who are interested in making calendars.

Unfortunately, the heliocentric model not only contradicted Aristotle, it also contradicted the Bible, the Church, and common sense experience. So, while it might be good for the calendar makers, it was obviously just plain wrong! After all, if Aristotle was wrong, then our common sense experience is wrong. And since there are passages in the Hebrew Bible that confirm Aristotle and common sense, that the sun moves around the earth, it was practically inconceivable that Ptolemy's model was incorrect.

One side note before we move on, and that is, despite what you learned in High School, Copernicus did not invent the heliocentric model. It was first proposed by Aristarchus of Samos a hundred years after Aristotle. But, nobody took his model seriously since it ran counter to the established authority of both Aristotle and common sense.

Now, you might think that Copernicus' bold objection to the standard geocentric model of the cosmos would land him in big trouble. After all, in denying Aristotle, he's denying the Bible. And in denying the Bible, he's denying the authority of the Church. And, denying the authority of the Church means denying the authority of the Pope, and doing that will get you excommunicated. Getting excommunicated from the Church means that you go to Hell, or at least Purgatory (neither of which are desirable outcomes). So, you might imagine that Copernicus kept his beliefs to himself so the Church would never find out about his blasphemes.

Well, you might think all that, but you'd be wrong. The fact is, Copernicus was well aware of the implications of his view, and he went out of his way to emphasize that what he was proposing was only a mathematical model, and that it should in no way be taken to represent any real threat to what we all know to be true through our own experience, let alone what is confirmed by the authority of Aristotle and Church; that the Earth is the stationary center of the universe. And if you thought that would still be too inflammatory for the church, you'd be wrong again. They were only too happy to apply the heliocentric model in order to secure a more accurate

calendar so people would know when to celebrate Easter. Just so long as everybody was clear that it was only a model. To be sure there were some who found his proposal just too outlandish, but the Church hierarchy embraced the compromise and almost everybody was happy.

#### **SLIDE 15**

They were happy, that is, until Galileo got involved.

Now, another thing you probably learned in school was how Galileo invented the telescope and then went on to invent science and single-handedly save us from Medievalism.

And, once again, what you learned was wrong (although to be fair, he does seem to have started the trend of going by one's first name; everybody calls him Galileo, and nobody calls Copernicus, "Nick", so I guess he's got that going for him). But as I was saying, Galileo didn't inventing the telescope. He did, however, dramatically improve on the already existing idea. He then made lots of copies of his newly improved telescope and sold them. He thus became wealthy enough to retire and spend the rest of his life playing with his "invention."

#### **SLIDE 16**

Galileo's improvements to the refracting telescope centered on the accuracy with which he ground the lenses (he did it far better than anybody before him). He also worked out the optimal distance between the new more accurate lenses and the focal point of the light in a tube. This significantly improved the refracting power of telescopes, and as I said before, allowed him to sell them to merchants who were more interested using them to look for ships in the Mediterranean, in order to fix prices in the markets to get the drop on their competitors. But we're getting ahead of ourselves in the story.

#### **SLIDE 17**

So after Galileo had improved the telescope, made his IPO (or, the Renaissance equivalent thereof), he sat back and pointed his little toy in the one place he shouldn't have. Not the neighbors window (though he may have done that as well), but up. Up into Aristotle's celestial realm. Up into the divine world of Aether. Up into the world of the gods. And what he saw up there blew him (and the rest of the Medieval world) away.

Let's start with the moon.

Well, for something that's supposed to be made of a divine substance, for something that's part of the perfect eternal celestial realm, well, it looked pretty, well, terrestrial. He saw mountains and valleys, and craters, highlands and lowlands which, though quite desertified, looked downright ordinary.

#### **SLIDE 18**

And speaking of imperfections in a realm that's not supposed to have any, when he looked at the Sun he found it had spots. SPOTS! It's scared and pock-marked like somebody who survived a small pox or the plague.

#### **SLIDE 19**

Jupiter was also downright un-Aristotelian. It had it's own moons. That's just not right. Everything is supposed to be a satellite of the Earth; Aristotle had said so, and Ptolemy had shown how. Besides, the Bible made it clear that the Earth was the center of God's attention, and if planets, like Jupiter, could have their own moons, well, the whole cosmos seemed to be coming apart.

#### **SLIDE 20**

But the killer observation, the one that changed everything and left no doubt in his mind that, in fact, Copernicus had been right, and Aristotle, the Bible, St. Thomas and the whole damn Medieval system wrong, was the way Venus waxed and waned.

Now, the waxing and waning of the moon had been observed since humans become conscious. And it had long been understood that the shadow that passed over the moon was caused by the relative location of the Earth, Moon, and Sun. No problem. But when Galileo tried to position Venus, the Earth, and the Sun as it waxed and waned, well, it just wouldn't fit the geocentric model. There was just no way on Ptolemy's model to account for the plain fact of the observations he was making. Here was new observable evidence that broke in favor of Copernicus and against Ptolemy.

When he published his findings and went on tour to promote his book, things got a little hairy. To be fair, the Church didn't just send in the Inquisition to break his knee-caps and such. They gave him fair warning that he was contradicting the teachings of the Church,

and they would really appreciate it if he'd not be quite so bold in his pronouncements about the inaccuracies of Aristotle, the Church, and in particular the Bible. But when he refused to relent, he was invited for a tour of the Vatican which, for people like him, ended in the basement. He was forced to recant his position; his book was placed on the index of inappropriate literature written by very naughty people; and he was confined under house arrest. He died shortly thereafter.

And even though the Church hired media consultants to create an add campaign to discredit the uppity man who was quickly becoming known simply as, Galileo, once the cat has tasted the sweet cat-nip of liberty outside the bag, there's just no putting it back in. Copernican heliocentricity was on the ascendency, and it would be a rear-guard action for the Church from here on out.

#### **SLIDE 21**

We should note that there were other cosmic models floating around in the chatter that was the Renaissance version of the internet. Martianus Capella had proposed a hybrid geocentric model in the Fifth Century just as the western half of the Roman empire was descending into the giant chaotic mess of the early Middle Ages.

#### **SLIDE 22**

More recently Tycho Brahe, who turned out to be not much better at theoretical astronomy than at dueling, had proposed a synthesis of Copernicus and Ptolemy (referred to as the Tychonic System) which didn't work much better than Capella's.

But Brahe was good at making careful observations (like the supernova of 1572). He spent a lot of time at night looking up at the stars, perhaps because he couldn't get dates which, despite his nobility and great wealth, was probably due to the fact that his nose had been cut off in a duel at college. So, whether it was because he was naturally boring, or due to his unfortunate loss, he had lots of time, undisturbed, to record his observations of celestial bodies. He also had the good fortune to recognize talent when he saw it, and hired a young Johannes Kepler to be his assistant.

#### **SLIDE 23**

When he died, Kepler would inherit all of Brahe's elaborate notes, and from them he would work out the last piece of the astronomical puzzle (which would also prove to be the last nail in Aristotle's coffin).

You see, even though Galileo had provided sufficient evidence to persuade the unbiased that Copernicus' heliocentric model was not just simpler than Ptolemy's, but also had to be more accurate, there were lingering problems. And the most stubborn was the seeming alteration of the velocity of the planets. If the planets were moving in circular orbits, as Aristotle said they had to, then there was no reason for them to change their velocity. But, Kepler, applying his basic geometry, worked it out.

If the planets were moving on elliptical orbits rather than circular orbits, they would appear to move faster when closer to the earth and slower when farther away, though they were in fact moving at a pretty constant speed. Thus, Kepler formulated the first law of planetary motion, all planetary motion is elliptical motion.

#### **SLIDE 24**

It was now official: Aristotle was wrong. There were no perfect crystal spheres in the heavens moving in perfect eternal circles around the Earth. And speaking of Earth, it was no longer the center of the Universe. We were now just another one of the planets: no special cosmic status.

What about our common sense, upon which we had relied for evidence supporting Aristotle's seemingly a priori deductions? Well, that turned out to be unreliable too. As was St Thomas who had synthesized Aristotle and Christianity, and so was the Bible when it claimed that the sun moved around the earth, and so was the Church when it held doctrines that depended on false biblical passages and Aristotelian authority. The whole damn system had gone up in flames; the universe had been turned inside out, everything we thought we knew about the cosmos and our place in it, had come to a very ignoble end.

But that's not the end of the story. Things actually get worse from here as we'll see in part three of our online lecture serious about the Renaissance as historical background for the Modern Period.

#### **SLIDE 25**

Let's quickly review what we've covered in this lecture,

#### **SLIDE 26**

We've seen that the Renaissance is a period of history characterized by social *and* intellectual upheaval.

In this part of the lecture we've focused on the Scientific Revolution which is a revolution in astronomy. It's often referred to as the Copernican revolution due to Copernicus' re-discovery of the benefits of the heliocentric model of the cosmos.

The observations of Galileo, and Brahe, and Kepler provided further evidence for the heliocentric model and ultimately led to a complete rejection of Aristotelian science.

But along with the challenge to Aristotle's authority was a challenge to common sense. After all, we experience the cosmos from a geocentric point of view. We don't feel the earth moving, and we do see the sun, moon, planets and stars all orbiting us. But what *seems* to be true according to our common sense experience, is not just under suspicion as it had been under Classical Skepticism, it's just plain wrong. And if we can't trust our common sense, what can we trust?

The Scientific revolution of the Renaissance turned the universe inside out. No longer was it possible for us to think of our planet as the center of God's creation. It would only be a matter of time before the same logic would apply in other areas of knowledge as well. The anthropocentricity from which we've viewed the universe is now in serious doubt.

When you put all this together, you can't help but arrive at some degree of skepticism. When everything you think you know turns out to be wrong, only the most stubborn could avoid some serious internal reflection.

### **PART 3: The Geographical Revolution**

#### **SLIDE 1**

Hello and welcome to my historical background lectures for Philosophy 101. This is "The Historical Context of the Modern Period: The Renaissance and the Rise of Skepticism." An outline for this lecture is available for download on the "Notes" page on my website.

#### **SLIDE 2**

This is part 3: The Geographical Revolution.

#### **SLIDE 3**

It is difficult, and indeed may be impossible, for us to fully grasp how a Medieval person understood the world around them. But even if we might not be able to fully grasp how they saw things, it is important for us to try. It is only in imagining different points of view that we can step outside our own perspective and begin the process of transformation that Socrates called the "examined life." But it is equally important to recognize that just because someone lived in a different time that doesn't make them essentially different from ourselves. It isn't the case, as you might have heard, or even said yourself, that "people were different back then," as if that somehow explained things. From an objective point of view humans as humans (i.e., homo sapien sapiens) haven't really changed very much since we fully emerged about 60 thousand years ago.

What has changed about us are the beliefs we hold. These cognitions get expressed in lots of ways, but among the most significant are the intellectual paradigms, or world-views, that are expressions of the collective consciousness of people in different places and at different times. Medieval western Europe was no exception. There was a commonly held world-view that helped Medieval people get through their lives and one aspect of that paradigm was the concept of sacred geography.

#### **SLIDE 4**

In early human world-views physical geography was often considered sacred geography, where place is endowed with meaning. A place was more or less important not because you did or didn't own it, or did or didn't live there, but because it was more or less important on the cosmic scale of meaning.

#### **SLIDE 5**

Another way of thinking about this very different view of the world is to recognize that the question "where" was subordinate to the question "why". Where a place existed in the world was determined by why it existed in the world. This Babylonian map, preserved on a clay tablet, demonstrates both the ethnocentric element of early world views as well as notion of sacred geography. The center of the world, Mesopotamia, is the place where Babylon is located. Other powerful people and city-states are depicted on the edge of the world away from the people the map represents. Babylon is the center of the world because it is what matters to those making the map.

But this map also demonstrates the relationship between the physical world and the sacred world. Beyond the ocean are seven “islands” which represent the celestial realm, which, as in Aristotle’s astronomy, is not just a different place, but is also a different kind of place.

#### **SLIDE 6**

This conception of the ordinary and heavenly worlds connected through a great ocean that surrounds the land would come to influence Ancient European paradigms of the world, and would continue to shape geographical paradigms right down to the Renaissance.

#### **SLIDE 7**

Here we see the early Greek Philosopher Anaximander’s interpretation of the Mesopotamian paradigm of geographical representation, followed shortly by an even more accurate representation by another early Greek intellectual, Hecataeus.

#### **SLIDE 8**

These “island Earth” paradigms, passed down from the Ancient to the Medieval world, would become more abstract as they became influenced by Christian theology. The *orbis terrarum*, or “O” “T” model of the world was shaped by the significance of the number three in Christian mythology. Being the number of the trinity, it just made sense that the world, created by God, should reflect the existence of that creator. The existence of three continents known since antiquity, fit very nicely into the Christian world-view. Physical reality was reflective of divine reality. Or to put it another way, our understanding of the physical world is shaped by our understanding of the metaphysical world. Since the Earth is the center of God’s creative energies, the center of the world will be the place that occupies the center of God’s attention.

And in the Christian tradition, there is no place more central to God’s activity in the world than Jerusalem. Where the center of the world is located is determined by “why” it is the center of the world.

#### **SLIDE 9**

And this is the very picture, or perhaps we should say metaphor, of the world that dominated throughout the Middle Ages. God, looking down on the center of his creation, working his will among the destinies of humanity.

The further you moved away from Jerusalem, the further from God’s attention and plan you moved. On the edge of the world were the strange barbarian peoples noted in ancient histories and anthropologies like that of Pliny the Elder, who, though he never actually visited them, describes the sub Saharan peoples of Africa in the most bizarre of terms.

#### **SLIDE 10**

Similarly, for a Medieval author like Dante Alighieri one could view a theological concept like hell, or purgatory, or even heaven in geographical terms.

But this paradigm of sacred geography, this world where place not only had meaning, but was determined *by* its meaning, was about to come, along with the rest of the Medieval world, to a very ignoble end.

#### **SLIDE 11**

The second of our three great intellectual revolutions of the Renaissance is the Geographical Revolution, a revolution that would fundamentally and forever alter the way people understood the physical world around them. but this revolution is set in motion for the most mundane of reasons. It begins with a search for a sea passage to India first looking east, then turning to the west, and finally looking for a way to circumnavigate the globe completely.

#### **SLIDE 12**

Our story begins with Europeans striving to find a cheaper source for the spices and silks that came from Asia and which, due to the disposable income suddenly available to those who survived the black death of 1346, were in ever increasing demand. The superpowers of the day, Spain and Portugal would soon be locked in a war of exploration to increase the supply of these luxury goods to European markets.

Trade between Asia and Europe had an ancient history, and there were two primary routs by which Asian luxury goods made their way toward Europe.

### **SLIDE 13**

From China, goods traveled via camel train across the high plateau of the Silk Road to Constantinople, where they would be transferred to ships and then sail to the ports of southern Europe, particularly Italy.

### **SLIDE 14**

The other route was from India, to Yemen, to Egypt, overland to Alexandria, and then onto ships bound for the ports of Europe.

In both cases goods had to pass through a multitude of middle markets and traders which incrementally added to the overall retail cost of the products. What Europeans needed was a way to cut out all the middle men and go directly to the source in India and China and buy wholesale and in bulk. But there was one not-so small problem that stood in their way...

### **SLIDE 15**

There was no GPS and reliable magnetic compasses were not yet widely available in Europe. Even if they had been, they'd have been of little use as the maps of the day, as we'll see in a moment, weren't very reliable. Thus, navigation was a matter of applied astronomy. Europeans had worked out rudders or navigational charts of the northern hemisphere which allowed sailors to triangulate their position from just about anywhere in the northern hemisphere. The key to these rudders was the ability to find a single, fixed point to begin your calculations, and the common point they used was the North Star, Polaris.

The problem for European navigators is that as you sail south around the coast of Africa, Polaris falls lower and lower on the horizon until about 3 degrees north of the equator it falls below the horizon. When that happened, you'd just sailed off the edge of the world. This meant that navigating around Africa required sailing close to coastline which, as it turns out, is very dangerous. Hence, the continent of Africa had prevented Europeans from sailing directly to India until the late 15<sup>th</sup> Century.

### **SLIDE 16**

Vasco Da Gama, sailing under the Portuguese flag successfully circumnavigated Africa. Having survived the voyage, Da Gama returned to Europe with a rudder of the southern hemisphere. This allowed those in possession of such a rudder to sail the deeper, safer waters out of sight of the African coast, and live to tell the tale. Thus, the Portuguese were off to the races picking up Indian spices (which actually mostly come from south-east Asia) by the boatload, and undercutting their rivals.

### **SLIDE 17**

Not to be outdone, the Spanish, the other superpower of the day, was busy looking for a Western passage to India. After all, since the world was round all you had to do was sail west and you'd end up in the east.

But wait, didn't everybody think the world was flat? Actually no. In fact, Eratosthenes of Alexandria, who had for all practical purposes invented physical geography and scientific cartography in the 3<sup>rd</sup> Century BCE, had experimentally demonstrated what Aristotle had asserted: that the Earth is a sphere. In fact, Eratosthenes had not only proven that the world was a sphere, he had also measured its circumference to within a 2% margin of error.

So Columbus, as well as everybody else with an education of the day, knew sailing west should land you in the east. What they lacked was an accurate rudder because the maps of the day were woefully inadequate.

The best world maps available in the late 15<sup>th</sup> Century were based on the world map of Claudius Ptolemy, yes, the same Ptolemy we've already met. And, as you can see it doesn't include much of anything between Europe and China. That's not just because Europeans hadn't been there yet, but also because when Ptolemy calculated the circumference of the Earth, his results were wildly less accurate than those of Eratosthenes. And because of one of the accidents of history Ptolemy's works became popular and Eratosthenes' didn't, Columbus didn't have a clue as to how far it was from Europe to China.

We can, however, get an idea of just how inaccurate Ptolemy's calculations were by superimposing the yet to be "discovered" continents of north and south America on a contemporary map based on Ptolemy's calculations.

### **SLIDE 18**

It's fairly clear that while Columbus had the right idea, the world was indeed spherical, the world would turn out to be, as Eratosthenes had demonstrated, a much bigger place than everybody else expected.

## SLIDE 19

But off he went in 1492, and well, you know the rest of that story.

While King Ferdinand and Queen Isabella of Spain, for whom the Italian Columbus was sailing, were disappointed that he had failed to find a western passage to India, it turned out to be a blessing in disguise. Europe was, by this time, fast running out of hard wood forest which were necessary to build the ships upon which the Spanish economy rested. And the “new world” as it was called, was covered with what seemed an endless supply of the raw materials a maritime empire like Spain needed. So while they didn’t get a supply of nutmeg and curry powder, they did get all the raw materials they needed to continue fueling their superpower status well into the next century. This was made easier by the fact that the native populations that peopled this “new world” made the terrible mistake of thinking the Spanish gods when they arrived in their puffy pants and funny looking boats. But by the time they discovered the all too mortal nature of these alien visitors, it was too late.

## SLIDE 20

The quest for a western passage to India would not end with Columbus, however. The Spanish would recruit Ferdinand Magellan as a free agent from their Portuguese rivals and in 1519 he’d set out with a armada of ships financed by the Holy Roman Emperor Charles the V (who was also, confusingly enough, Charles the I of Spain) to make the first successful circumnavigation of the globe.

Unfortunately for Charles, and even more so for Ferdinand who was killed in the Philippines, the south western passage was not economically viable as a trade route, and so attention would turn to the search for a north west passage to Asia, but that’s another story altogether.

In conclusion what we discover in exploring this history is that the world, like the cosmos in the Scientific revolution, turned out in the Geographical revolution to be quite different than everyone thought it was. Not only did this set in motion a series of geo-political conflicts that we call Colonialism and that would continue to dominate world history until the middle of the 20<sup>th</sup> Century, it also had the effect of causing people to be somewhat skeptical when they made knowledge claims about the world. Before the Geographical Revolution Europeans thought of physical geography in religious terms with Jerusalem being both the spiritual and physical center of the world (hence the motivation for the crusades only a few hundred years before). But now, that entire Medieval geographical view was busted. Everything people thought they knew about the physical world was *just as wrong* as what they thought they knew about the heavens.

## SLIDE 21

Here are the main points to keep in mind about the Geographical Revolution

## SLIDE 22

The Renaissance is a period of intellectual upheaval as demonstrated in three intellectual Revolutions:

The Geographical revolution is characterized by the discovery of the so called New World the beginning of colonialism the rejection of sacred geography

This turned the physical world inside-out.

And, this sudden shift in perspective led to broad skepticism. If everything we thought we knew about the world turned out to be so inaccurate, maybe we don’t know much of anything at all. We should certainly be skeptical of ancient authorities in matters of fact like geography. Even though Ptolemy turned out to be quite mistaken in his understanding of the world, another ancient, Eratosthenes’ views were more accurate. The point is, just because something comes from the past doesn’t mean it’s correct. Just like us, the ancients could be right or wrong and the only way to find out is to investigate for ourselves.

## PART 4: The Theological Revolution

### SLIDE 1

Hello and welcome to my historical background lectures for Philosophy 101. This is “The Historical Context of the Modern Period: The Renaissance and the Rise of Skepticism.” An outline for this lecture is available for download on the “Notes” page on my website.

### SLIDE 2

This is part 4 : the “Theological Revolution.”

### SLIDE 3

As if the Astronomical and Geographical revolutions weren't enough to cause the rise of Skepticism in Europe during the Renaissance, the Theological revolution would drive the point home.

While there had been differences in liturgy and dogma among Christians in Europe, there had been a long slow trend toward unity in the Latin church from the fifth Century onward. Sure there were occasional heretical sects that would flare up now and again, but the Church had always found ways of overcoming these irregularities and bringing about consensus either through persuasion or force. But the Renaissance would bring all that hard won unity crashing down. The Theological Revolution would bring about first a fragmentation of the Church, followed by a radicalization of religious differences, which would end in religious nationalization and ideological conflict that would lead to the persecution and death of untold numbers. The seemingly unbreachable unity of Medieval Christianity, which had survived the collapse of the Roman Empire, would come to an agonizing end all because somebody sent a memo.

### SLIDE 4

The date was All Hallow's Eve in the year of our lord, as it was called back then, 1517.

The place was the small backwater town of Wittenberg in the Saxony of Anhalt, on the Elbe river. A local parish priest and recent graduate of the new University of Wittenberg by the name of Martin Luther needed to send an urgent message to his boss, Albert. It seemed that attendance at mass had dramatically fallen off of late and Father Martin had a good idea as to the cause. But as the email servers were all offline, due to having not yet been invented, he'd just have to write up a memo and tack it up on his boss' door.

### SLIDE 5

The problem, as Luther saw it, was complex.

First, church was boring! The entire liturgy was not only in a foreign language, it was a dead foreign language. The Roman Empire had been gone for a thousand years, but the Church insisted on keeping the language, perhaps to add to the mystery of the mass. But for whatever reason, most people had no idea what was going on in church. You just waited for the man in the vestments to ring a bell and call you down for some bread and wine. You might get a brief homily in your native language, but that was about it. The solution, thought Luther, was to translate the liturgy and Bible into the vernacular languages of the people so they could be more engaged in the mass.

Another problem, from Luther's point of view, was the frightening rise of superstition and magical thinking on the part of the common people. It started with Crusaders of the high Middle Ages bringing back souvenirs of their "pilgrimage" to the Holy Land, picked up in the local markets of Jerusalem or Antioch. Things like a splinter of the true cross, or the finger bone of St. Dennis the obscure, which were thought to have curative powers both for the body and soul. Out and out rivalries developed between cities to attract tourists to see their collections of relics like a slat from Jesus' manger, or the molar of St. Paul's second cousin. It helped if you had a local saint who had performed miracles before he or she died, and the bigger the miracle, the bigger the draw. People would travel hundreds, if not thousands of miles to venerate a powerful saint and receive a blessing from the excess grace thought to exist in this religious bric-o-brac.

But if you could earn God's grace by going on a pilgrimage to the shrine of St. Whomever, as well as have a nice holiday on the way, why bother staying home and going to the local, boring church to hear the local priest drown on in a dead language that often even he didn't really understand. This whole business of venerating relics and saints, was, according to Luther, getting out of hand.

But Luther's biggest pet peeve was with the practice of selling Papal indulgences.

A representative of the Vatican named Johann Tetzel had arrived in town a year earlier with a mobile printing press (the Renaissance equivalent of the internet) and a franchise from Pope Leo (X) himself, to exchange forgiveness for coin. He even had an add campaign: "When a coin in the coffer rings, a soul from Purgatory springs." The idea was that one could buy a short-term indulgence for minor sins as an act of piety that would cancel out the sin. It was an early adaptation of market economics to religion. You could purchase one of these "get out of Purgatory free" cards for yourself, or a friend, perhaps as an inducement for a naughty tryst, you could had them out at keggers, or even buy an indulgence for a dead relative.

This may all seem a bit bizarre in hindsight, but it was the logical conclusion to a practice that started in the high Middle Ages. When Pope Urban II first promoted the idea of a crusade to free the "holy lands" from Muslim influence in the 11<sup>th</sup> Century, there wasn't a great deal of excitement. After all, what's to motivate a soldier to go on a holy war when half the fun of fighting is the raping,

pillaging, and plundering to be done before and after the fight. A holy war is sure to be just as boring as going to church; not exactly the sort of thing to entice the unprofessional warriors of the day. But what's worse is that if you were to get yourself killed on this holy war you might end up in Hell because of all the raping, pillaging, and plundering you were bound to end up doing no matter how pious you tried to be. Heck, just the idea of killing your enemies, as opposed to loving, forgiving and praying for them as Jesus had commanded his followers to do, seemed *prima facie* problematic.

Urban's solution was the plenary indulgence: forgiveness, in advance, of all sins committed while on the crusade. The act of fighting itself would be considered a pious act on behalf of the Church, which, after all, was Jesus' representative on Earth. So, killing for the Church was killing for Jesus and that seemed like a logical thing to the Medieval mind. So, off they went having a splendid good time killing each other in the name of God, with an assurance of golden ticket to heaven if they should happen to be one of the casualties along the way.

Fast forward a bit and later church officials were exchanging indulgences for contributions to the building campaigns for the new Gothic cathedrals sprouting up all around Europe. They were immensely expensive and raising sufficient funds to keep the projects going, often for multiple generations, required the ongoing and generous support of the European Aristocracy. Giving was an act of piety, so exchanging money for absolution seemed a logical incentive to achieve the Church's ends.

Fast forward again and we arrive in Luther's day where Pope Leo X (Giovanni de' Medici of the famous de' Medici clan) was busy with a construction project of his own. He continued the construction of St. Peter's Basilica begun under his predecessor Julius II (the warrior pope), and was paying an interior decorator named Michaelangelo Simoni to tart the place up a bit. It was all very expensive and indulgences were the key to financing the place.

But the Renaissance Pope's had learned the earlier lessons of incentives, and this time applied them on a market-wide scale. By selling indulgence franchises, the pope could open new markets among the common people making up in volume what he lost in value. Hence franchised indulgences became the penny stocks of the day and the results can still be admired in Vatican City.

## **SLIDE 6**

It's not hard to imagine how the pope's discount market approach to forgiveness impacted the local parish. There was basically no reason to go to church at all.

So Father Martin sent an urgent memo to Albert, his boss the bishop, suggesting something to the effect that the Pope didn't have the authority to forgive sins anyway, and this practice was having a negative effect on the spiritual life of the community, and the whole lot of non-scriptural practices should be stopped forthwith, etc., etc., etc. This has come to be known as Luther's 95 thesis.

## **SLIDE 7**

If Wittenberg was previously a backwater in Christendom, and if nobody had ever heard of Father Martin before now, that was all about to change. The Pope sent a letter to the Holy Roman Emperor telling him to get this non-sense under control *tout suite*, so he, in turn, called a Royal Diet in the city of Worms in 1521. Luther was subpoenaed to testify on behalf of himself and his revolutionary ideas before the emperor himself as well as a panel of leading theologians who had been shipped in as expert judges to put this upstart back in his place.

After several days, however, it was clear that Father Martin was no ordinary parish priest, and he had thought his ideas through rather carefully. And, since they were unable to pin him down on a clear violation of canon law, he was thanked for his input and told to go home to await the Pope's final decision.

In the mean time, it had been decided that it was easier to get rid of Luther altogether. After all, the forests of Germany were notoriously full of wolves eating girls in red cloaks, surely they could take care of one priest. If he happened to disappear on his way home, who'd be the wiser?

## **SLIDE 8**

But Luther was spared by Frederick III, Elector of Saxony, who kidnapped him before the "wolves" could get to him. He was placed under house arrest in Wartburg castle where Frederick and several other German war-lords were conspiring to break from Rome. They were tired of sending their tax marks to Italy to pay for the re-construction of Vatican City when they could be kept at home to build palaces for German lords. The only thing holding them back was the fear of being excommunicated by the Pope. Not because they feared eternal damnation, that was the stuff used to keep the peasants in line. No, but if they were excommunicated by the pope, their subjects could be manipulated to rise up against them for fear that they might be excommunicated too. They needed a religious diversion for the masses; and in Luther, they found their golden ticket.

After a year in captivity they finally succeeded in convincing Luther that if the Roman Church wouldn't even change their language to

adapt to the needs of the people, what hope was there that they would ever listen to him. The princes of the northern German states, with Luther as their spiritual advisor, broke with Rome. In return they gave Luther military protection from the Pope and let him create his ideal church based on the principle of *sola fide*, salvation by faith alone. Lutheranism, the first Protestant church, was born and the great Reformation (or more accurately, the great fragmentation) of Western Christianity had begun.

## SLIDE 9

Thanks to the mobile printing press, made possible by Johannes Gutenberg sixty years earlier, the very tool that spread the abuse of indulgences which prompted Luther to start making a fuss in the first place, now served as the most effective tool to spread his ideas across Europe. And although Luther, now known as Dr. Luther as opposed to Father Martin, intended only the best for his community, economic and political unrest, already afoot, broke out. Luther himself struggled to contain radical revolutionaries in Wittenberg who were ready to overturn the whole social order along with the Church. But in other places, things got out of control.

The Zwickau prophets Nicholas Storch, Thomas Muntzer, and Mark Stubner spread a message of social reform that went far beyond what Luther had intended. The poor were inflamed and the “Peasants’ War” raged from 1524-1525.

## SLIDE 10

There were other groups who were struggling to break free from the hegemony of the Roman Church, most notably the anabaptists. Their core belief centered in the necessity of adult conversion, hence all infant baptism was deemed by them to be invalid. They were thus dubbed the re-baptizers. Since they tended to criticize Catholic and Protestant alike, they were uniformly despised and persecuted even in territories friendly to Protestantism.

## SLIDE 11

But not all the radical reformers disrupted civic order. Some, like John Calvin were theologically radical while politically conservative. His “institutes of the Christian religion” published in 1536 went much farther in rejecting traditional Catholic theology, even challenging the traditional notions of free will as held by both Lutherans and Catholics.

His movement, the Reformed church, as it came to be called, would prove to be the ancestor to most of the popular evangelical protestant faiths of Europe and North America that we’re familiar with today.

## SLIDE 12

The conclusion to the story of the Theological Revolution concerns how religion came to be identified with politics in a way that would seal the fate of a unified Christian religion forever.

Protestantism came to England during the reign of Henry VIII. However, Henry Tudor was no theological malcontent; far from it. He was as staunch a Catholic as one was likely to find anywhere in Europe, and intellectual enough to go head-to-head with the likes of Martin Luther in his book “The Defense of the Seven Sacraments” for which he was granted by Pope Leo X the title *fidei defensor* (defender of the faith). No, it wasn’t faith that drove the Reformation in England, it was politics plain and simple.

Henry VIII was only the second in the Tudor dynastic line which had been established by his father, Henry VII, when the War of the Roses came to an end. He would have been the third, but his older brother, Arthur, died at age 15 before he could inherit the throne. Henry was thus promoted to king at 19 when his father died in 1509. Thus the Tudor dynasty was shaky at best as the recent civil war, was still fresh in the minds of those who desired power in England. The success of the dynasty lay, Henry believed, in the production of a male heir to take power after him. Without a male heir, the country might well be plunged back into chaos of civil war.

## SLIDE 13

In order to stabilize his rule, Henry secured a papal dispensation to marry his older brother’s wife. Arthur, the eldest son, was supposed to inherit the throne after Henry VII, and had thus been married to Catherine of Aragon, the daughter of Ferdinand and Isabella of Spain. Spain was a superpower and England was most definitely not. So securing an alliance with the royal house of Spain would increase the power of England against external threats, and hold at bay those within England who might wish to see the Tudor dynasty fail. Arthur’s early death threatened to undo that stability.

Thus, Henry needed the alliance with Spain. But in order to get it, he needed to marry Catherine, his brother’s widow. Since she testified that her marriage to Arthur had not been consummated, a papal dispensation was granted to secure the alliance between the two royal houses. Now all Henry needed to secure the dynastic succession was a son.

But over the years Catherine failed to provide him with a son and as time went on, he became increasingly agitated about the future of the dynasty. Though Catherine did bear a daughter, Mary, it was not in Henry’s power to conceive that a woman might be capable of

sustaining the dynasty. In his mind the need for a son became an obsession. And his obsession would become so great, it would cause him take matters into his own hands. He sent emissaries to Pope Clement VII asking for an annulment from Catherine on the grounds that the original dispensation that allowed him to marry her in the first place had been granted under false pretenses. He argued that Catherine and Author had consummated their marriage and her inability to provide Henry a son was proof of God's judgment on their sinful union (they obviously didn't know about X and Y chromosomes at the time). Catherine, of course, denied these accusations till her dying day.

Henry's strategy for securing a papal annulment failed for two reasons. From a theological point of view, to grant Henry's request for an annulment would be to reverse a previous papal judgment which, in effect, would be admitting that the original dispensation had been wrong. Given the turmoil caused by the Protestants on the Continent, the papacy was in no mood to add any fuel to the fire. There would be no admissions of papal fallibility under the present circumstances.

From a political point of view, the Pope had no interest in alienating the Spanish court. Spain, after all, was a super power, and was a staunch supporter of the papacy. So, for all its orthodoxy, England just didn't have the economic, military, or political power that Spain did. So if the Pope had to choose between England and Spain, it was a no brainer: Henry would just have to make due with a daughter.

#### **SLIDE 14**

But Henry was not the sort to take no for an answer. By this time he was already romantically involved with Anne Boleyn, the sister of his former lover, Mary. He had convinced himself, no doubt with encouragement from Anne, that if they could marry, she would give him the son he so desperately wanted.

To make a long story short, Henry and Anne hatched a plot to have him declared "head of the Church in England" which would give him the power to install the Archbishop of Canterbury. With an Archbishop in place who owed allegiance to the king instead of the Pope, Henry could get his annulment from Catherine. The Act of Supremacy of 1534 would finally make Henry Tudor, the first supreme head of the Church in England, and set the stage for Protestantism in the island nation.

All these political intrigues didn't resolve Henry's need for a son, however. And when Anne's first child turned out to be a girl, Elizabeth, it wasn't long until she too would become expendable, for the good of the realm. Henry's third wife, Jane Seymour finally gave him a son, but died in childbirth and her son, who was to become Edward VI, would die at age 15 plunging the kingdom into the very chaos Henry had worked so hard to prevent.

#### **SLIDE 15**

Mary Tudor, Henry's oldest daughter by Catherine of Aragon, had been raised a Catholic and had a deep hatred of the Protestant movement which she associated with the removal of her mother as queen. So, when she came to the throne in 1553 following the death of her younger half-brother Edward VI, she would reverse the Act of Supremacy and all policies favorable to Protestantism in England, thereby re-submitting the English throne to papal authority. She also embarked on a five year campaign to purge the land of what she called the Protestant heresy for which, upon her death in 1558, she would forever be known as "Bloody Mary."

#### **SLIDE 16**

Following Mary's death, Henry's second child, Elizabeth, his daughter by Anne Bolyne, would succeed to the throne. She had been raised a Protestant like her mother, and when she came to power, she would reverse Mary's program of re-Romanization and again make Protestantism the national religion. It was under Elizabeth's rule that the Protestant faith would be permanently established in England. The Act of Uniformity of 1558 would create a common prayer book and an English liturgy, and a year later she would have the second Act of Supremacy passed by Parliament making her the "supreme governor" of the church in England. It was Elizabeth's steadfast commitment to the Anglican Church, as it came to be known, together with her stable and prosperous forty-year reign, that would solidify Anglican Protestantism as one of the major branches of the Protestant movement along with Lutheranism and the Reformed Church with all its evangelical descendants. Also, because of Elizabeth's political acumen, along with a bit of good luck, she would guide England to superpower status in Europe and establish colonies, not only in North America, but all across the globe. This had two very important effects: first, it demonstrated that women were just as capable as men when it came to politics, and second, it spread the Anglican faith world-wide. Wherever the British Empire spread, it would plant the Anglican Church, which is why the Anglican communion, a European national religious movement, is found on every continent of the world today.

#### **SLIDE 17**

This map shows the distribution of religion in Europe at the beginning of the Modern period. Catholicism, in light pink, dominated central and southern Europe, while the Protestant movements were firmly in control in northern Europe. To some degree, this division between protestant north and catholic south survives today.

## SLIDE 18

Before we leave the Theological Revolution we should point out that the Church, or now more appropriately labeled Catholic Church did respond to the calls for reform, though not in a way that was satisfactory to the Protestants.

The Counter Reformation, as it is called, began with a church council held in Trento, Italy in 1545. Known as the Council of Trent, this gathering of the leading bishops and scholars of the Catholic community gathered off and on for nearly twenty years to debate the issues surrounding the fragmentation of European Christianity and the appropriate response to the chaos that ensued. Of course, the Catholics would not give in on any of the major criticisms raised by Protestants, but did seek to curb some of the abuses of ecclesiastical power and the corrupting influence of church-state relations.

But in the end, the Council of Trent re-affirmed the authority of the bishop of Rome as the sole representative of Christ on earth, the role of the church in the mediation of divine grace through the seven sacraments, and the use of Latin as the official language of the mass. It also confirmed the cult of the saints and the veneration of icons and relics as appropriate forms of Christian worship.

But the Counter Reformation would go far beyond the strictly theological matters in its attempt to respond to what it saw as the “heresy” of Protestantism.

There was, for example the establishment of new religious orders (worthy of special note are the Carmelites and Jesuits) who were dedicated to good works and education for those who aspired to the priesthood. There was also a realignment of existing religious orders to emphasize the spiritual life as opposed to the political and economic activities that dominated many religious orders in the Middle Ages.

There was also, perhaps in direct opposition to the rational or intellectual approach to theology which dominated Lutheranism and the Reformed movements, an emphasis on the mystery of the Christian religion. The mass, the most central liturgical activity of the Catholic experience, centered in the sacrament of the Eucharist, held as core of the mysterious nature of God’s divine plan. The doctrine of transubstantiation, that the bread and wine of the Eucharistic meal was in fact transformed through the mystery of the mass into the actual body and blood of Jesus became the central focus of the difference between Catholic and Protestant expressions of Christianity.

There was also the rise of the great Catholic mystics like Ignatius of Loyola, Teresa of Avila, and St. John of the Cross who emphasized a direct, personal, and mystical experience with God achieved through intensive religious exercise and discipline.

But perhaps the most enduring achievement of the Counter Reformation was the development of a new form of art that has become known as the Baroque period. Both in music and the visual arts the Catholic church approved and patronized the development of new art forms that could be used as aids in teaching the doctrines of the church to the poor and illiterate. It was also a nod to the Protestant claim that the Medieval Mass was too abstract and boring for the average Christian. Now one could experience artistic expression that had previously been reserved only for the aristocracy.

Despite these changes, however, the Protestants would not be tempted to return to the Catholic church, and the fragmentation of Christianity would only intensify over the centuries with more and more innovations and sects which we know today as “denominations”.

## SLIDE 19

Now let’s take a few moments to recap what we’ve discovered in this four part series of lectures.

## SLIDE 20

1. The Renaissance was a period of radical social and intellectual change where everything Europeans thought they knew about the world, from common sense to divinely revealed truth, came under direct and relentless scrutiny. The Medieval church taught us that we were the center of God’s attention and the entire universe existed as the stage upon which the divine plan of salvation would be played out. The omnibenevolent creator of the universe had put a world before us designed to fulfill his eternal plan of mercy. Then came the black death of 1346 and the saints died alongside the sinners, the rich with the poor, the mighty along with the powerless; there seemed to be no possible reason, no possible end that could justify such blindly distributed suffering and death.

Surviving the horror certainly brought benefits, but one could hardly think themselves saved by divine intervention. It was a mystery, plain and simple. But surviving it was time to rebuild and with the new found wealth that’s just what people started to do: live for today and forget the horror of the past.

2. There were three major intellectual revolutions that would come out of the Renaissance:

- a. Astronomical or scientific – geocentric to heliocentric model
- b. Geographical – rejection of theocentric geography and the birth of colonialism
- c. Theological

We saw how the Latin, or Roman, Christian church which had survived the collapse of the Roman empire, would succumb to the skepticism of the period through the Protestant Reformation and begin a process of fragmentation that continues to this day.

Religion was radicalized being appropriated as a tool, not just for theological reform, but also for social reform, and this in a period when the modern nation-state was just emerging.

This led to the nationalization of religion where distinct nation-states, like England, began to identify themselves as much in religious terms as in linguistic and ethnic terms. Some would become skeptical of religion altogether, though it would be unsafe to express such doubts for some time to come.

### 3. The rise of skepticism