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IDEAS THAT SHAPED MANKIND A CONCISE HISTORY OF HUMAN THOUGHT COURSE GUIDE



Professor Felipe Fernández-Armesto
QUEEN MARY UNIVERSITY
OF LONDON

Ideas That Shaped Mankind: A Concise History of Human Thought

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Queen Mary University of London



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Professor Felipe Fernández-Armesto



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Course Syllabus

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About Your Professor

Felipe Fernández-Armesto

Felipe Fernández-Armesto is a professor of global environmental history and professorial fellow in history and geography at Queen Mary, University of London, and a member of the Faculty of Modern History at Oxford University. He has held the post of visiting professor at several institutions in the United States and Europe.

Professor Fernández-Armesto's books include the bestselling *Millennium* (1995), *Civilizations* (2000), *Near a Thousand Tables: A History of Food* (2001), and the book on which this lecture course was based, *Ideas That Changed the World* (2003). He also writes frequently for newspapers and magazines such as *The New York Times* and *The Economist*. His broadcasting credits for the BBC include writing and presenting *Henry V* and contributing to the Tony Award-winning series *Armada*. He also worked on *Millennium*, a ten-part CNN/BBC series based on his book *The Americas* (2003).

You'll get the most out of this course if you have *Ideas That Changed the World* by Felipe Fernández-Armesto (New ed. New York: Dorling Kindersley Publishers, Ltd., 2004).



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Introduction

Ideas That Shaped Mankind flows from internationally respected historian Felipe Fernández-Armesto's views on the notion that man's capacity to produce ideas in itself brings about sweeping changes in the world. This ability, seen most profoundly in individual, startling moments of genius—or equally startling moments of chance—is what separates humans from the animals and allows humans to reimagine the world in ever more complex designs. From the earliest ideas, including cannibalism and the idea of farming, to theories of relativity and chaos, ideas reshape the world in surprising and wholly unexpected ways. Science, agriculture, religion, art, politics—Professor Fernández-Armesto examines all these areas of thought and the moments in time when man's fertile intellect produced the sparks that set off blazes of change, even revolutions, that would forever alter the course of human history.

Lecture 1: The Idea of Ideas

The Suggested Reading for this lecture is Felipe Fernández-Armesto's *Ideas That Changed the World*.

Ideas

The greatest question of history might very well be, “How does it happen?” This course builds from the thesis that history happens first in the mind and that ideas are the impetus of social change.

When compared to other social animals, whose societies are most often static no matter how complex, human history is filled with dramatic changes. As far as we know, animals such as the great apes, elephants, ants, and porpoises have maintained the same types of relationships since their emergence as species. When change does occur within animal societies, it is political and limited to a narrow range of possibilities, specifically change in leadership. What remains unchanging in animal societies is the structure of the society itself and the overall shape of the politics. But in the human world, sweeping changes have occurred amongst societies with great regularity.

Think about it: a pod of whales in the Pacific Ocean does not have a different kind of society than a pod of whales in the Atlantic Ocean. But across the continents, human societies are marked by profound differences in culture.

One could say that human behavior is closely linked to two things: mind and matter. While some have thought that these are separate things, now most agree that mind/body dualism is inadequate. The myriad processes of the mind are physically engaged by matter, namely the brain organ in which proteins surge and synapses ignite.

While human behavior is subject to biological drives and impulses, our lives are also shaped by the environment. But aren't non-human animals subject to biological drives and environmental pressures too? Moreover, environmental changes tend to be slow, but change in human societies tends to be rapid. What truly sets humans apart is the mind.

The extraordinary fertility of human intellect to generate ideas that can then generate change is what sets humans apart from other animals. That is not to say that animals don't think. For example, animals must have the capacity to imagine what might lie around the next corner. They must be capable of imagining how predators, or conversely, how prey, might react. But compared with other animals, human beings have a greater capacity for reimagining the world, or imagining the world differently from the way it could be. It's when we imagine the world



Charles Darwin originally published his theory of evolution in his book *The Origin of Species*.

differently that we spawn ideas that have the power to change things. When we apply our ideas and project our imaginations onto the world around us, we reshape the world to suit ourselves. Thus, the history of ideas is an essential subject. It is the source of every other kind of change that happens in history.

The Human Mind as the Source of Change

For the purposes of this course, we will look at ideas as purely mental events, separate from instincts. But when we identify the mind as the source of change, then two great problems arise.

First, how do we access a history that happens inside our minds? Conventional histories of ideas usually rely on what people have written as guides to what goes on inside their minds. This course seeks to tell the whole

history of ideas. To do that, logic dictates that we must go back as far as we can, to the very origins of our species, long before anyone wrote thoughts down.



The second problem is, How are we going to approach and classify the material? This course

moves chronologically and begins with the history of how ideas began to take shape in the minds of our pre-human ancestors.

We will relate each idea that we cover to the political, social, and cultural environment in which it occurred. We will also take into account factors of the material environment such as climatic changes, evolutionary changes, and relationships with other species.

Two great features of human history emerge from this study. The first is how little we've really learned. When you study the history of ideas, much of the thinking we still rely on goes right back to the most primitive periods of the human past. The second feature is that, although our thinking has not improved, it has certainly accumulated, and like so much else in history, the pace of change has accelerated. Although we're still using basically the same ideas people coined thousands of years ago, we are continually recasting them in new forms and shapes.

It is also true that we are learning a lot more about how we think and about how minds work as arenas in which ideas form. These revelations arise from psychology, and chiefly cognitive science, which demonstrates in increasing detail how the brain functions chemically and electrically to generate our thinking. Other important work in the field of psychology concerns our social relationships and networks and how ideas are passed from person to person. These studies are inseparable from the history of ideas.

Language

An essential problem we encounter in our study of the origin of the idea is language. Is language idea or instinct? Is it something our ancestors thought up, or is it something that came to them naturally? Certainly other animals—

such as chimpanzees and dolphins—have ways of communicating that are analogous with language.

However, when comparing the complexity of human languages to the repertoire of what our nearest animal relatives can achieve, we see a profound difference. But why did human language become so much more complicated?

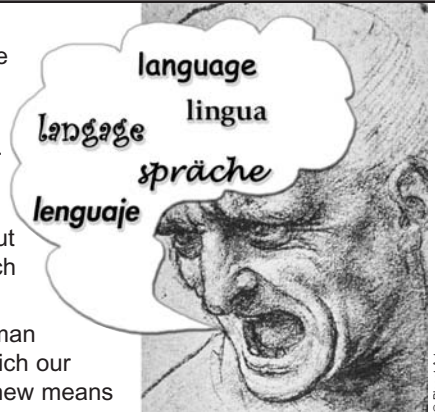
One popular theory is that in our pre-human past, the size of the bands or tribes in which our ancestors gathered grew so large that a new means of enhancing the bonds of society became necessary. But this does not take into account that language is a symbolic system. We use words to signify other things; language means taking a group of sounds and syllables and making it stand for something else, be it object or action.

Though we don't have any direct evidence of the actual origins of language, we do know that because, while language is universal amongst all humankind, there are thousands of different languages. So the period of differentiation has been a long one. Language probably began before human societies began to diverge from one another. The same principle helps us to reconstruct the earliest ideas of our ancestors. Thus, the most widely dispersed ideas, the ideas that are common to human communities around the world, must be the earliest ideas.

Cannibalism

One of the very earliest human ideas must have been cannibalism. Though it may seem bestial and horrific, it is indeed an idea. First of all, cannibalism is rarely practiced for nourishment. Throughout the world, it has been much more commonly practiced for moral reasons, in order to appropriate the virtues of the people the cannibals ate. Most often, cannibals believe that eating the dead shows them honor, or that by eating the dead, you stand to gain their powers or prowess.

We determine that cannibalism is one of man's original ideas because under the stones of every civilization lie the bones of cannibal feasts. In most societies, cannibalism has been a normal practice at some stage of their past, going as far back as 400,000 years. While cannibalism is rare among other mammals, it is a defining characteristic of humans.



Cannibals in Brazil
by Hans Staden, ca. 1557

Two studies integral to tracing man's earliest ideas are comparative anthropology, looking at different cultural practices around the world that define our species, and cognitive archaeology, whereby through unearthing the remains and detritus of our pre-human ancestors we can date the first emergence of practices such as cannibalism.

We may not think of the thought systems of these early periods in human history as especially productive intellectually, but if we put our prejudices aside, we can see how important these new ideas really were. Our ancestors of tens of thousands of years ago were very much like us, with the same intellectual capacities, with a lot of the same preoccupations. Amazingly, they anticipated many of our own ideas.

People have always asked questions about the essence of being human. What is it that sets us apart from other animals? Biologically speaking, there is no difference. But all animal species have special features—their unique gifts of evolution, so to speak—and we humans have ours. On average, humans are excellent at throwing. The ability to throw missiles allows us to contend with other creatures at a distance. Another special feature of humans is our advanced capacity for thinking. While the depth of thinking of animals would probably surprise us if we were to communicate with them, the human capacity for generating ideas, for imagining the world differently than the way it is, is our most important trait as a species.

FOR GREATER UNDERSTANDING



Questions

1. How is it possible for something as immaterial and elusive as an idea to effect social change?
2. How does the ability to produce ideas set man apart from the animals?

Suggested Reading

Fernández-Armesto, Felipe. *Ideas That Changed the World*. New ed. New York: Dorling Kindersley Publishers, Ltd., 2004.

Other Books of Interest

Fernández-Armesto, Felipe. *Before Columbus: Exploration and Colonization from the Mediterranean to the Atlantic, 1229–1492*. Philadelphia, PA: University of Pennsylvania Press, 1994.

———. *Humankind: A Brief History*. New York: Oxford University Press, 2004.

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Sanday, Peggy Reeves. *Divine Hunger: Cannibalism as a Cultural System*. Cambridge: Cambridge University Press, 1988.

Websites to Visit

1. Global Ideas Bank is a not-for-profit organization with a database of nearly four thousand ideas — www.globalideasbank.org
2. The American Philological Association (APA) is a society in North America for the study of ancient Greek and Roman languages, literatures, and civilizations — www.apaclassics.org
3. The University of Chicago Press publishes *Modern Philology* to probe the intricate interrelation between texts and contexts — www.journals.uchicago.edu/MP/home.html
4. Vanderbilt University provides an article by Beth A. Conklin entitled “Giving Cannibalism a Human Face” — www.exploration.vanderbilt.edu/news/news_cannibalism_nsv.htm

Lecture 2: The Mind of the Hunter

The **Suggested Reading** for this lecture is Felipe Fernández-Armesto's *Ideas That Changed the World*.

Old Ideas Are the Best

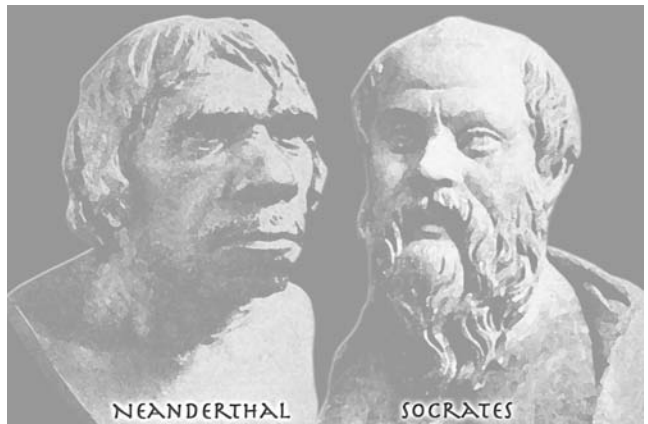
The most influential ideas in human history have to be the oldest. The earlier the idea, the longer it's had to influence the rest of the human past. So by investigating the earliest period of human history, we can begin to discuss the formation and influence of ideas.

Conventional thinking would indicate that the best place to start is the ancient Greeks, because they were the beginning of the tradition that we belong to. Starting with the Greeks is inadequate, however, because they came so late in the history of humankind. Some of the most important ideas in the world had already been around for thousands of years before the Classical Greeks, or even their predecessors, the pre-Socratic sages.

Other conventional thinking would have us turn to the evidence of the origins of writing and literacy as the earliest ideas. In the early twentieth century, scholars began working to reconstruct the idea systems of the great Bronze Age civilizations like the Egyptians, the Mesopotamians, the ancient Chinese, and the civilizations of the Indus Valley. But even these civilizations came late in the history of our species. By the time of these civilizations, *homo sapiens* had existed for 150,000 years.

The best place to start is about 40 or 50,000 years ago, where we see impressive evidence in the form of objects that cognitive archaeologists have dug out of the ground. These objects give clues to the ideas of the people who made them. And later, from about 30,000 years ago onward, we see evidence of art and a rich repertoire of symbols used by peoples of the Ice Age, during which the first evidence of religion appears.

The oldest type of religion of the world is animism—belief in spirits. Usually, modern people think this type of thinking is unsophisticated. We believe we've moved beyond this



Socrates built on the millennia of thought that came before his time.

to a scientific view of the world. But it is truly more sophisticated to think of the world as being more than you can touch and feel than to think about the world in a purely materialistic, scientific way. It must have taken a tremendous feat of the imagination to suspect that there was more to the world than what our senses reveal. Indeed, this breakthrough notion of the existence of spirits was a very sophisticated concept.



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Right from Wrong

Ice Age people had the same capacity for thought as we do. They became philosophers when they started to think about the two problems that remain central to philosophy to this day: the problem of telling truth from falsehood and the problem of telling right from wrong.

The problem of telling truth from falsehood arose when people began to penetrate the world of sense and to suspect that appearances are illusions. When people discovered the possibility of illusions, they began to reflect philosophically about the world. Other animals seem to have much more acute senses than humans. Humans had to make up for sensual weakness in more imaginative ways. That is when our ancestors began to suspect that they could get further by using their minds than by using their senses.

When one begins to suspect the existence of a world of spirits, a universe is constructed that makes sense. This was a universe populated by living forces—forces that quicken the wind, make flames leap, waves dance, breezes play, and trees whisper. To this day, we still use the metaphorical language of an animated universe. We discuss the physical universe as if it were in some sense alive.

There is a continuum between our view of the universe and our remotest ancestors. While some regard primitive belief systems as superstitions, they really weren't. In fact, they were very rational, observed inferences derived from the way the world really is. And from this insightful first step in the history of ideas arose the next important idea in the sequence—the idea of God.

Spirit in the Sky

There is much debate over whether people first believed in a multiplicity of spirits or a single spiritual influence. The latter is widely diffused in the world. To arrive at this idea, our ancestors must have come to understand the potential differences between what things are and what properties they have. For



example, everyone can see the sky and know that it exists. But to question why it is the way it is, and then to postulate some force working inside it to make it act the way it does, is a very philosophical notion. Comparative anthropology shows us that primitive peoples of the world commonly explained the workings of nature by the existence of a universal life force that accounted for the properties of everything. Once this notion of a universal life force arose, human beings were very close to the concept that we now refer to as God, a force that powers the whole cosmos and is responsible for all change.

Animal Magic

An idea from the earliest phases of human history that is classifiable as scientific is the notion that we all have animal ancestors. In our contemporary world, we know this as the theory of evolution. But this idea is certainly not new. Again turning to the work of comparative anthropology, we see that “totemism” is a nearly universal idea and therefore probably a very old one.

Similarly, the idea of magic—using rituals to influence Nature—is so universal that it must have arisen in a very early stage of human development. Evidence of the idea of magic can be seen in the cave paintings of Ice Age peoples. So can evidence of religion. These paintings depict human beings in trance-like states, wearing animal disguises and engaged in what are obviously ritual activities, like dancing. In our contemporary world, studied by anthropologists, people engage in these sorts of ritual practices to communicate with the spirit world. Through their rituals, these peoples undertake journeys of the imagination that enable them to learn truths that are not accessible by ordinary methods of sensory perception or observation. They do this to communicate with the forces that make the world the way it is, establishing a relationship with them, and maybe induce them to behave differently—perhaps in ways that are more agreeable to the people. This earliest form of religion is still around today and is perhaps the source of all other religions.

Follow the Leader

We can come to some understanding of the political lives of Ice Age humans by looking at their cave painting and the sort of ritual practices they depict. Typically, the political structures of non-human primates consist of the alpha

male, or strongest individual, imposing his leadership on the rest of the group through a combination of intimidation and violence. When our human ancestors started to develop other types of leadership, it was because they saw—by thinking about it—the possibility of other types of leadership.

The priestlike figures that we see in these cave paintings are evidence of the rise of a new kind of power—the power of thought, the power of imagination. We're also seeing the emergence of charisma alongside physical strength as a source of political authority. These priestlike figures were able to convince others that they were in touch with the spirit world. Alongside the leader who is selected by his physical prowess, we're also seeing the rise of a knowledge class.

Another new form of leadership that emerged in Ice Age societies was hereditary leadership. Turning to cognitive archaeology, we find evidence of this in a grave in southern Russia from about 20,000 years ago. The richly endowed grave of a chief is found alongside the richly endowed graves of two young boys. Clearly, these two boys were privileged because they were the sons of a leader.

In another vein, we can attempt to assess the ethics or morality of our human ancestors. In a famous Neanderthal burial site in Iran, we find the grave of a crippled, illness-plagued old man who had apparently survived for years by the charity of his community and was finally buried with great signs of honor. Surely he was not useful to them in any physical sense. This clearly indicates a benevolent community showing appreciation for someone without expectation of tangible reward.

FOR GREATER UNDERSTANDING



Questions

1. Why are the Greeks not the best place to begin a study on the genesis of ideas?
2. What grew out of the ability to tell truth from falsehood?

Suggested Reading

Fernández-Armesto, Felipe. *Ideas That Changed the World*. New ed. New York: Dorling Kindersley Publishers, Ltd., 2004.

Other Books of Interest

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Zubrow, Ezra B., and Colin Renfrew, eds. *Ancient Mind: Elements of Cognitive Archaeology*. Cambridge: Cambridge University Press, 1994.

Websites to Visit

France's Ministry of Culture and Communication's *The Cave of Lascaux* provides details on the cave drawings at Lascaux — www.culture.gouv.fr:80/culture/arcnat/lascaux/en

Lecture 3: Of Ice and Mud

The Suggested Reading for this lecture is Felipe Fernández-Armesto's *Ideas That Changed the World*.

A Change in the Weather

The caves decorated by the human beings of the Ice Age reveal the works of artists of fantastic gifts. Indeed, they created some of the most extraordinary works of art ever contrived, depicting wonderfully realistic animals leaping to life in vivid color.

The artists who created these paintings inhabited a world that had been forged by the advance of the northern ice cap. They lived relatively near the edge of the ice, in temperatures that we would now regard as extremely hostile. Nevertheless, they had impressive material culture and the leisure to create these spectacular paintings. What made this life possible was an abundance of food, including creatures like mammoths, and the development of effective technology for killing large numbers of these food sources.

Ice Age societies were remarkably stable. Evidence for this is found on the walls of their caves—where we see art that changed very little over a period of 10,000 years. That kind of stability in the way artists choose to represent the world is almost inconceivable to us today. But this world of abundance, creativity, and stability was threatened between 10,000 to 20,000 years ago by climatic change—the great global warming of that era.

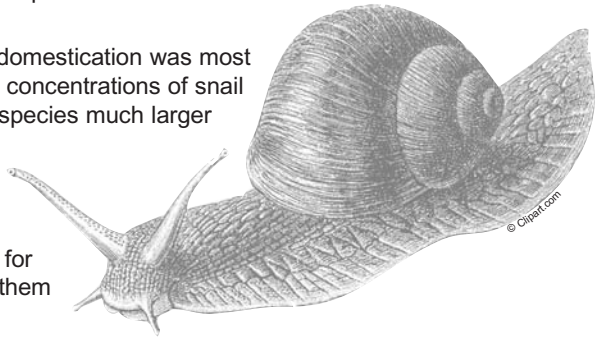
A changing environment was the major contrast between their world and ours. How do people's minds respond to that change? What kinds of new thinking arose in response to global warming? Basically, there are two responses people had when the ice began to retreat. Some of them moved with it, heading north to continue the hunting lifestyle as the great quadrupeds retreated with the ice. As they moved, they developed new ideas that may be connected with the instability of the era. In 1932, archaeologist Alfred Rust made the remarkable discovery of a great sacrifice in which deer had been weighted and flung into a lake. Up until that time, although people had been making sacrificial offerings along with human burials for scores of thousands of years, never before had anyone uncovered evidence of a sacrifice being made in quite that form—in which there was no obvious benefit to the people making the sacrifice other than presumably a spiritual benefit, and no association with a human burial.

This type of sacrifice can be understood as an attempt to placate Nature by a gesture of self-abnegation, as the animal sacrificed could have been used to feed the community. Though it may be fanciful to see this as a response to the crisis induced by changing climatic conditions, it would be a mistake to forget that context of climatic change when you try to interpret the evidence.

Domestication

The second response to climatic change was for people to stay where they were and try to adapt their food-gathering strategies to a warming, drying environment. Here we find the origins of the great new feature of human life in this period: the domestication of plants and animals for food sources.

The earliest example of domestication was most likely that of snails. Large concentrations of snail shells, including those of species much larger than any that exist today, have been uncovered, suggesting that people were already beginning to select snails for size, in a sense to breed them for size.



Agriculture

Most historians of agriculture describe how people first domesticated plant food sources with types of grains, which they adapted to make them digestible. The earliest examples we have of this come from the Near East, which, about 14,000 years ago, experienced a major warming trend that certainly imperiled natural stands of grasses. In a conservative response, people tried to find ways of perpetuating the food sources on which they already relied, and the replanting of seed was probably part of their strategy.

But was this great innovation—the origin of agriculture—an idea? Was it something that people thought of and then did, or was it an adaptation that people didn't need to think about? Was it an accident? Scholars continue to debate the issue. On one hand, adaptations of this sort can be the products of individual genius. On the other hand, scholars theorize that a change as vast as the origins of agriculture must have happened accidentally, or that it must have been the product of “co-evolution”—the very gradual, mutually dependent relationship between humans and the species they consume.

Theories of How Agriculture Started

First, there is the political context. Many early agrarian societies were controlled by despots. This suggests that, in some cases, the origins of agriculture were inseparable from the shaping of the minds of leaders who came to see its potential as a way of enhancing their own power.

The second possible context is that of religion. The words “cult,” “cultivation,” and “agriculture” are clearly connected with the corresponding language of cult—or religion. In Latin, *cultus* can mean both agriculture and worship. These two activities are probably intimately connected at some place in our human past. The staple plants of many human societies are also the gods they worship, and to whom they offer sacrifice. Today, some Christians maintain a relic of that way of thinking when they eat bread that has been miraculously transformed into the body of the god they worship.

Another way of seeing the origins of agriculture is as a response to stress. People turned to agriculture because the amount of game was falling owing to over-exploitation and climatic changes, or because human populations had grown too large to support themselves on game alone. If people were burdened by these kinds of stresses, surely they must have confronted their problems by thinking about them and imagining solutions.

Others, by contrast, argue that agriculture originated as the result of abundance. Farming came about when people had time to experiment with plants because their other food sources were plentiful.

Finally, there is the possibility that agriculture arose in the course of co-evolution. As temperatures rose, people came into closer intimacy with animals and plants, and had an opportunity to discover their domesticable qualities. In the context of each of these, people are seen consciously adapting to the changing conditions in which they found themselves.

The Curse of Work

However these changes occurred, they brought new



problems and new opportunities. The major problem of early farming societies was that they tended to rely on a small number of staple products, making them vulnerable to ecological disasters such as droughts, floods, and subsequent famines. Agrarian societies that domesticated animals were also susceptible to new plagues resulting from the spread of deadly microorganisms from domesticated animals to humans.

Along with famine and plague came the curse of work. As far as we can tell, before farming, people had much more leisure time and were often able to obtain adequate nutrition on two or three days' work a week. Farming imposed rigorous routines upon people, and typically, early farming societies became despotisms run by rulers who had the power to organize people and impose collective routines necessary to maintain crops.

Despite plague, famine, work, and oppression, there were tremendous new opportunities to develop ideas that would recraft the world even more radically. Along with these new features of society came elites with even more time to devote to thinking. The creation of sedentary agrarian civilizations made intellectual classes possible. Large states came into being with the power to oppress and enslave people, and to garner food and redistribute it to sustain larger populations than ever before.

It was a time of technological advances. Cities were born as a result of these developments and it became possible to warehouse food on a scale that was previously unthinkable. Populations boomed because once women were living in sedentary conditions, they could have more children than when they were migrating from camp site to camp site.

FOR GREATER UNDERSTANDING



Questions

1. What two responses did Ice Age peoples have when the ice began to retreat?
2. What was most likely the earliest example of domestication?

Suggested Reading

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Other Books of Interest

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Rindos, David. *The Origins of Agriculture: An Evolutionary Perspective*. London: Academic Press, 1984.

Websites to Visit

The Society of Primitive Technology is a non-profit organization dedicated to the research, practice, and teaching of primitive technology — www.primitive.org

Lecture 4: From Settlement to Civilization

The **Suggested Reading** for this lecture is Felipe Fernández-Armesto's *Ideas That Changed the World*.

**“It was divine nature which gave us the country,
and man’s skill that built the cities.”**

~Marcus Terentius Varro
On Agriculture

Settling In

When the agricultural way of life took hold, so did new ideas and new forms of social and political organization. Farming was the product of an act of imagination—the realization that human hands could reshape the world. Farming imposes a new look on the land. The possibility of cities arose in minds inspired by the new shapes of farming. The city is perhaps the most radical form of human intervention in the environment ever conceived—the natural landscape is smothered by an environment of human design.

Agriculture often generated food surpluses, which had to be warehoused and regulated and redistributed by new states. Kings replaced chiefs and specialized elites prospered. Cities fostered the patronage of artists and scholars, which in turn stimulated the cycle of ideas. Labor was organized on a grand scale—and that labor had to be submissive. Agriculture and tyranny were closely linked. As armies grew and resources were directed to improve the technology of war—so agriculture became linked to mass violence.

The remarkable paradox is that the tally of ideas in these new societies is surprisingly small when compared to later periods. The great civilizations of this era—ancient Egypt, the ancient Indus Valley, early Mesopotamian civilization, and the first Chinese civilization—were remarkably retrospective, traditional, static, even stagnant, in their thinking.

One explanation points to their ecological fragility. Most of them occupied a single type of environment and relied on a single type of crop. Egypt and China were different because they had a relative diversity of environment and rich ecology. This may have buffered them from crop failures and contributed to their remarkable longevity as civilizations. But even Egypt and China were always insecure and needed the order and continuity that tradition provided. Most other early agrarian civilizations were much less well provided. They suffered military insecurities that increased their fragility. Civilizations in contact with one another found it difficult to maintain peace. And there were always enemies, nomadic peoples, “barbarians,” on their borders.

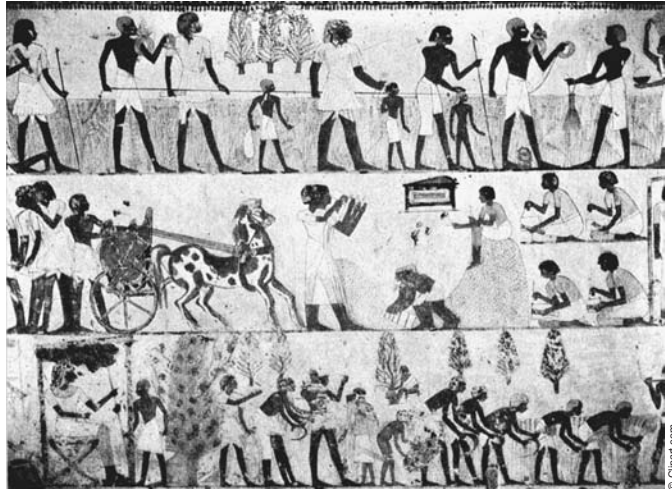
In a period of maybe two or three hundred years, late in the second millennium B.C., all of these civilizations were destroyed or radically transformed by crisis. Across Eurasia, from Greece to central Asia, cities withered and

shrank. Egypt tottered, but survived in a changed form. China was profoundly recrafted and reemerged under a new dynasty. But most of the other great civilizations of the era vanished forever.

“Civilized” Ideas

What did these societies contribute to the existing stock of ideas? They were innovative in two closely related areas—society and politics. These are the areas in which the elites of these societies thought of new ideologies to justify the way they exploited their subjects and their environments. They created new legitimations for the state and new descriptions of society.

Work is the primary area in which new thinking became possible. People of pre-agrarian societies worked, but they didn’t conceptualize work as a routine. They practiced it as a ritual; it was part of the continuum of life. By the standards of early agrarian societies, these pre-agrarians did not work very hard at all. Typically, pre-agrarian peoples were able to feed themselves on two or three days of work a week. It wasn’t necessary for them to devise new ideologies to keep people working. The distinction between work and leisure, the ethic of work, and the idea that it was good to work became part of the common ideology of the society. This was the great new development of the era of the sedentary agricultural civilizations.



The relative diversity of Egypt’s environment may have contributed to dynastic survival.

Work is the primary area in which new thinking became possible. People of pre-agrarian societies worked, but they didn’t conceptualize work as a routine. They practiced it as a ritual; it was part of the continuum of life. By the standards of early agrarian societies, these pre-agrarians did not work very hard at all. Typically, pre-agrarian peoples were able to feed themselves on two or three days of work a week. It wasn’t necessary for them to devise new ideologies to keep people working. The distinction between work and leisure, the ethic of work, and the idea that it was good to work became part of the common ideology of the society. This was the great new development of the era of the sedentary agricultural civilizations.

Woman’s Work Is Never Done

Evidence of this is found in the poetry of China and Mesopotamia. Poets were hired to rhapsodize and praise the virtues of work and effort. Another example is the severe biblical prescription, “Six days shalt thou labor.” This was no longer a time of abundant leisure.

Alongside these new ideas about work came new ideas about sex. Evidence reveals new practices emerging that disadvantaged women in favor of men, such as patrilineal descent systems. These systems asserted that people inherited their status and their wealth from their father rather than from their mother. There is also evidence of a rapid rise in birth rates. Again, sedentary life enables women to breed far more than they could have when they were leading nomadic lifestyles. Women became tied to

the routines of childbirth and child nurture in new ways. Art of the period often depicts women in servile roles. A famous early Indus bronze sculpture of a group of female dancers is regarded as the first depiction of temple prostitutes. These women were clearly sex objects, and that's a way of thinking about women that wasn't possible before.

Politics Like Religion

There is evidence of new political thinking among these civilizations. In Egypt, they had a divine king at the head of society. In Mesopotamia, they had city-states ruled by individual monarchs who competed with one another. In China, they had a unified kingship, but it wasn't a divine kingship—the king may have mediated with the gods, but he wasn't a god himself. In the Indus Valley, although we have very little evidence about how their political life was constructed, they seem to have had a sort of republican system.

However these new political structures were organized, they were the result of thinking about the relationship between the ruler or the ruling elite on one hand and the gods on the other. In Egypt, the king himself was called a god. That kind of thinking represents a claim to authority of a different order from that claimed in Mesopotamia and China, where the kings weren't gods themselves, though they did commune with the divine. In each of these societies, a new thinking that established the role of the king as a mediator between heaven and earth was being forged. In Mesopotamia, evidence shows that the king consulted the stars to learn the will of the gods. In China, the king obtained divine messages from the cracks that formed on shells and bones when burned. A new kind of political ideology was forming in which the king assumed the role of the priest in pre-agrarian societies.

Finally, in the context of politics, the new idea that emerges from the formation of ever-larger states was the idea of a king with universal authority. The first king known to have such an ideology was Sargon of Akkad in Upper Mesopotamia during the third millennium B.C. He established the world's first great empire by combining states he conquered into one single superstate with aspirations to rule the entire world. This doctrine of universal imperialism would have grave consequences for the future—it is the enduring ideology of empire and war.

Another important idea that arose at this time was that of codified law. The essence of this new thinking can be found in the code of Mesopotamian King Lipit-Ishtar, a successor of Sargon's from around 1800 B.C. His code is representative of what was



This bronze sculpture may depict Sargon, a king who ruled over the Akkadians, in the northern region of ancient Babylonia, created ca. 2250 BCE.

new about these laws because it clearly attempted to comprehensively regulate society, which, as far as we know, had never been attempted before. In the texts, Ishtar explains that his laws were the result of divine inspiration, and their purpose was to maintain tradition, abolish enmity and rebellion, bring righteousness and truth, and give well-being to the land. Ishtar's code sought to make society perfect. There's no evidence that anybody had ever thought of law or the state as having that power before.

Write On

The fact that these law codes were written down is the last great innovation of the period. This was a new way of thinking about writing. Writing could be something permanent, with the power to arrest tradition. When writing started, nobody thought of it like that. The remarkable thing is that all the earliest examples of writing are utterly trivial. Writing wasn't devised by great priests and sages, it was devised by merchants and bureaucrats to record the values and quantities of commodities and taxes. It seems that when writing was first established, people would only confide very trivial material to it. Sacred, important, vital information was committed to memory and transmitted orally. To write it down, so they believed, would debase it.

At some point during this period of new law codes came another great moment in the history of ideas—people began to use writing for the sacred. Although we don't know exactly who was responsible, we can speculate on the origins using the evidence of these early law codes. Writing was adapted from a lower, more trivial social purpose by an elite. They must have seen the power of writing to perpetuate memory and influence lives, and so used it to solidify their rule and religion.

FOR GREATER UNDERSTANDING



Questions

1. Why is the city such a radical form of human intervention in the environment?
2. How were ideas about sex influenced by ideas about work?

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The Avalon Project at Yale Law School provides early twentieth century, current interpretations, and translations of the Code of Hammurabi from a legal perspective — www.yale.edu/lawweb/avalon/medieval/hammenu.htm

Lecture 5: Thus Spake Zarathustra

The **Suggested Reading** for this lecture is Felipe Fernández-Armesto's *Ideas That Changed the World*.

The Age of Sages: The End of the Bronze Age

Towards the end of the second millennium B.C., all the great states of what we now call the “Bronze Age” civilizations collapsed or were profoundly transformed. In most of the affected regions of Eurasia, from the eastern Mediterranean across south-west Asia to India, chaos, conflict, and “dark ages” followed. Even in China, where the disruption that accompanied a change of dynasty was relatively slight, a period of “warring states” ensued when the new dynasty collapsed in its turn. It sounds like a bad time for ideas.

Yet in reality the Bronze Age civilizations had long been intellectually stagnant. Their collapse or crises signalled the chance for a fresh start—often in a new place. In the eastern Mediterranean, for instance, in the Ionian islands and on mainland Greece, or in the Ganges valley in India, or the remote Persian region of Fars.

Moreover, counterintuitively, perhaps, chaos and strife favored new ideas. Traditions of teaching, learning, and reflecting on big problems gradually resumed in a changed political environment, where fragmented, emulous states contended with each other for power. Crises induced thinking about solutions. Warring states needed diplomats, bureaucrats, and arbiters. Rulers were prepared to invest in education. They consulted sages with a reputation for wisdom rather as modern rulers turn to think tanks and focus groups.

As a result, the new thinking of the first millennium B.C. became, by comparison with what had preceded it, extraordinarily productive. Not only was there a lot of it, it was also amazingly influential.

The Upanishads

The crucial period—say, from about the eighth century B.C. until around the end of the millennium—was an age of sages, and an age of schools and of networks of thinkers. The earliest school we know of, in India, perhaps around the seventh century B.C., produced the Upanishads. The name means something like “the seat close to the master,” recalling the importance of orally transmitted learning.

Among the most striking new ideas are the conviction of the interconnectedness of an eternal, uncreated universe, and the notion that the world is Brahman's dream—everything the senses tell us is delusive or illusory: to reach reality, we have to escape from the constraints of matter. Equally powerful, perhaps, in its implications was the idea of reincarnation.

The emergence of schools and sages has to be understood against the background of growing exchange of goods and people—and therefore of

ideas—across the Eurasian landmass. This was the era in which all the major civilizations of Eurasia got to know something—at least—of all the others. In India, China, Greece, and southwest Asia, sages debated many of the same topics and themes: the nature and origins of the universe, the difference between truth and falsehood, spirit and matter, change and stasis, right and wrong; and they devised similar techniques and disciplines for investigating those questions: logic, science, meditation.

Zoroaster

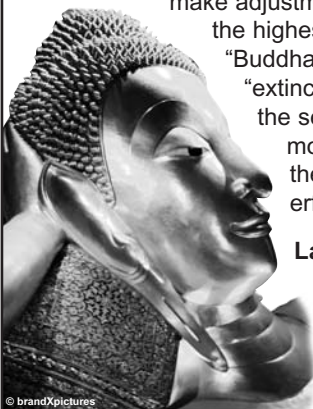
The first successor of the Upanishads we know of was Zoroaster, who worked in what is now Iran in the seventh or early sixth century B.C. Known only obscurely through surviving texts that claim to be his, his thought focussed on the problem of reconciling the conflictive and contradictory processes and principles that are discernible in the world. His “dualist” vision of a universe motivated by and divided between contradictory principles of good and evil, light and dark, informed the mainstream religion of Iran for a thousand years and seeped into religious thought of succeeding ages.



Mahavira and Buddha

Inside India, numerous schools succeeded the Upanishads. Two sages exceeded all others in importance. Mahavira, traditionally dated to the sixth or early fifth century B.C., devised Jainism—a religious discipline designed to free the soul from evil by encouraging the practice of charity, selflessness, truth, and asceticism. This implied a routine too demanding for most people, but it flourished in monasteries and attracted much lay devotion.

Buddha founded a tradition that has proved to be universal in its appeal. He lived at a time now much disputed by scholars, between the mid-sixth and early fourth centuries B.C. He recommended practices designed to achieve happiness through prayer and unselfishness, but the exercises Buddhists were called on to follow were carefully calibrated so that individuals could make adjustments according to their callings and capacities. At the highest level, a follower could attain Enlightenment or “Buddhahood” through “Nirvana,” which literally means “extinction of the flame”—a state of utter indifference to the self. This could most easily be attained in a monastery, but it was possible to become a buddha in the world, too. Unlike Jainism, Buddhism gained powerful constituencies among the rich and rulers.



Lao Tzu

Such codes of life as Mahavira and Buddha proposed were clearly of practical value—but their opponents criticised them as magic. Escaping from the world, extinguishing the self—these

sound to some ears like magical bids for immortality. Striving to ascend through stages of life to mystical self-extinction sounds a bit like shamanic self-transformation. So does reincarnation, in some versions of which the soul had to pass through incarnations as various kinds of animals before reaching perfection. Indeed, the sages surely owed something to the shamans, and their thought probably owed something to magical traditions. They were healers and miracle workers as well as philosophers. The link with magic is explicit in the writings of Lao Tzu, who proposed ways of escape from the political chaos of sixth-century China, through the power of the mind and the practice of rituals.



Despite the magical flavor of some thinking of the sages, they went beyond magic, because they all upheld the efficacy of moral practice alongside that of ritual. And they aimed not only at the control of nature, but of the moral transformation of human beings. The religions they proposed were religions of salvation in another world, not just of survival in this.

Jewish Thinking

In this respect, the most radical and, in the long run, perhaps, the most important new ideas arose among the Jews. Jewish thinking has a disproportionate place in the history of the world when you take into account the Jews' small numbers and the modest place they occupied in the world of the first millennium B.C. They lived in a war zone on the edges of the great empires of Egypt and Mesopotamia. Their early history is obscure, but at the earliest stage we know about, they lived mainly from pastoralism, not the sedentary farming characteristic of most of the societies that produced great sages. The extraordinary story of how their tribal deity became a unique and universal God is still hard to understand. The crucial period in that fascinating transformation occurred when the Jewish state was defeated and the Jews dispersed. Exile made their God seem special. They began to see their sufferings as a test of faith and failing to acknowledge God's uniqueness as a sin.

From the strength of conviction of God's uniqueness arose the most powerful new thought of the age: the idea of a God who can create something out of nothing. Sages in other parts of the world considered this idea but dismissed it as illogical. In the long run, it has become the world's most widespread and popular characterisation of God.

Alongside the religious traditions of the Age of Sages, new secular thinking unfolded. No one, as far as we know, made a clear distinction at the time between religious and secular ideas. But in India, China, and Greece, the problems of epistemology, logic, politics, and science—all of which we now classify as secular—inspired new ideas that were as significant, in their way, as those of religion.

FOR GREATER UNDERSTANDING



Questions

1. Why did Buddhism have universal appeal?
2. How did disillusionment help to shape the Jewish tradition?

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Lecture 6: The Age of Sages: Politics and Knowledge

The **Suggested Reading** for this lecture is Felipe Fernández-Armesto's *Ideas That Changed the World*.

The Proliferation of Ideas

What makes some places, some periods, exceptionally productive in the history of ideas? It's hard to say for sure. One thing that does make a difference to the pollination of genius is communication. Interacting and networking with others, embracing the influence of other cultures, these are practices that enrich your own thinking and culture.

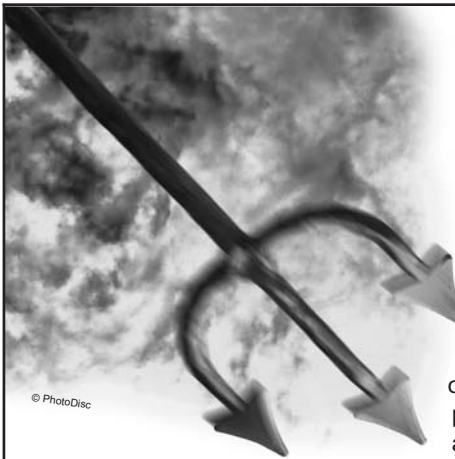
During the middle of the first millennium before Christ, the history of ideas in China, India, Greece, and the Middle East converged within such a framework of communication. This network of thinkers spanned across the Old World. What were the common ideas? For the purposes of this lecture, we will investigate their moral, ethical, epistemological, logical, and scientific ideas. We will trace how ideas converged in civilizations in the time and how they came to be so common. We will also explore what exactly made this age of sages possible.

Two Essential Types of Political Thought

Beginning with political thinking, two categories of thought become apparent: optimism and pessimism. Optimistic political thinking is based on belief in the inherent goodness of humans, who should be liberated with institutions that are favorable to freedom to maximize their potential for goodness. Pessimistic political thinking is spawned by a pessimistic account of human nature in which people need to be restrained, because if you give them freedom, they'll abuse it and do evil with it.

"The nature of man is evil," said the Chinese sage of the mid-third century before Christ, Hsü Ch'ing. "His goodness," he went on to say, "is only acquired by training." On the other hand, also in China, the opposite tradition was initiated by Confucius. "Man," he said, "is born in uprightness. If he loses it, and yet lives, it is merely luck." Thus there are two political traditions—one originating from a positive view of human nature and the other from a negative view of human nature.





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The Jewish Compromise

In the thinking of the Jews, we find a widely favored compromise: the idea that God made humans good and free, but the abuse of freedom made people bad. But there is a logical problem with this: If Adam was good, then how could he have used his freedom for evil? To escape this trap, Jewish thought added an outside source of evil. Goodness was corrupted from outside by the Devil. That decision left politics with a very difficult balancing act, which no system has ever adequately addressed—the balancing

between freedom and thoughts. How do you make the most of human nature? Do you encourage it or do you restrain it? Consequently, the whole history of political thought can be characterized as a debate between those who are pessimistic about human evil and those who are optimistic about human goodness.

Political Pessimism and Plato

For pessimists, the obvious way to restrain human evil is to strengthen the state. In the fourth century B.C., the Athenian philosopher Plato was a great spokesman for this point of view. Plato was a part of a clique of rich, well-educated intellectuals who felt qualified for power, and who therefore resented having to share it with anybody else. His prescriptions for the ideal state were militarism, regimentation, extreme collectivism, eugenics, austerity, a rigid class structure, and active deception of people by the state. Plato's key idea was that political power should be concentrated in a self-electing class of philosopher rulers, whom he called "guardians." These individuals would be qualified for power by their intellectual superiority, heredity, and education. According to Plato, this would make them selfless in their private lives and godlike in their ability to see what was best for the citizens. Plato said the object of the state should be to achieve the "greatest happiness of the whole." Plato's persuasive writings have continued to appeal to state builders ever since.

"There will be no end to the troubles of states or indeed of humanity until philosophers become kings in this world, or 'til those we now call kings and rulers really and truly become philosophers."~Plato

In practice, Plato's "guardians" became the model for centuries of aristocrats and self-appointed supermen whose justification for tyranny has always been that they know what's best. Plato's writings suggest that he believed this empowered class of supermen would actually forgo the pursuit of their own interests in favor of the greater good of the people. Despite Plato's miscalculation, he had a noble objective and optimistic view of his power class and their potential for uprightness. Sages, such as Plato, were in the business of selling benevolent political programs to rulers. While some rulers installed such programs, they didn't always have positive consequences when put in practice.

Pessimism in China: The Legalists

Meanwhile, in China, we find a similar phenomenon. In the fourth century B.C., the school known as the Legalists proposed an even more draconian set of political prescriptions. Their basic principle was that goodness was meaningless. Society required only obedience. What really mattered was that the law should be obeyed. Morality was nonsense; the only good was the good of the state. Law and order were so valuable that tyranny and injustice were small things by comparison. Ethics was described as a gnawing worm that would destroy the state if it was allowed free reign.

This was a new twist in the history of thinking about law. All the previous cases sought to make man moral, to make him perfect by aligning the law with natural and divine commands. But the Legalists asserted that the only function of law was to reduce the state to order. The Legalists existed during a time of political chaos in China, and their doctrine was born of great civil strife and disorder. It would seem like they must have just laughed off the notion of innate human goodness. The sort of laws they advocated included the severing of criminals at the waist, dismembering them with chariots, boring holes in their skulls, roasting them alive, and filleting out their ribs—all of this in the service and the worship of order. Legalists also advocated and glorified war. They recommended economic self-sufficiency and extolled agriculture above commerce. They insisted on the suppression of individualism in the interest of state unity. They were developing a doctrine that was chillingly reminiscent of the totalitarianisms of recent history—Fascism and Stalinism.

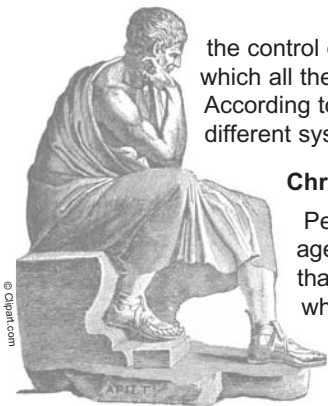
The Optimist Majority

The political optimists of the age of sages were representative of the most widely held view. Confucianism is the key example. According to Confucius, the purpose of the state is to help people to fulfill their potential. The ruler was obliged to the subjects, not, as Legalists would say, the subjects to the ruler.

The Greeks saw the state as a practical device that you could change if you wanted to. An enormous variety of political experiments unfolded in the Greece of the first millennium B.C., including republican, aristocratic, and democratic systems. In the fourth century B.C., Plato's highly influential pupil Aristotle completed an invaluable survey of all the different constitutional forms with which Greece had experimented. He thought monarchy was the best system in theory, but not in practice, because it was impossible to ensure that the best man would always be the ruler. He thought the most practical solution was aristocratic government in which administration was shared by a manageable number of superior men. But because aristocracy tended to degenerate into the pursuit of the self-interest of the wealthy and



Statue of a Chinese warrior from the Ming Dynasty. The Chinese maintained large armies throughout their long history.



Aristotle

the control of power by a hereditary clique, democracy, in which all the citizens shared, was a sort of corrective. According to Aristotle you needed, ideally, a combination of different systems.

Christ the Optimist

Perhaps the most optimistic political thinker of any age was Christ. Christ's view of human nature was that it was redeemable by divine grace. According to what we know of Christ's political doctrines, he seems to have preached a sort of subtle political subversion; the Kingdom of Heaven was more important than the Empire of Rome. And for society at large, Christ was quite demagogic. He was the champion of social outcasts. He showed a bias towards the marginalized and the suffering,

towards children, the sick, the lame, the blind, the beggarly, the weak, prisoners, the "meek who shall inherit the earth."

This was a very radical kind of politics, and it's not surprising that Roman and Jewish authorities should have collaborated to put him to death. His followers turned away from political activism to espouse Christ's proposed main object of life, which was personal salvation.

New Ideas About Knowledge

The sages of the age began to think radically about the nature of knowledge. What they all had in common was a serious determination to tell truth from falsehood and to tell what is real from what is illusory. Plato's allegory of the cave proposes that humans live in darkness and pass the time by watching shadows dance on the wall—our senses deceive us, and we must strive to find a way out of the cave and into the light of day. So how can we penetrate the world of illusions?

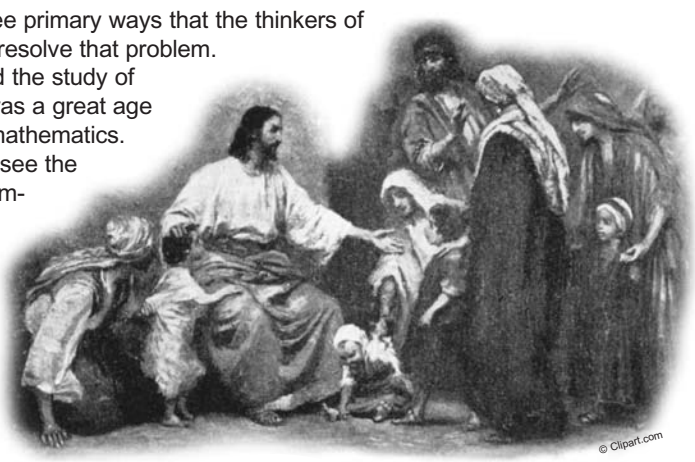
There were three primary ways that the thinkers of the time tried to resolve that problem.

The first involved the study of numbers. This was a great age of new work in mathematics.

Sages began to see the complexity of numbers as the key to an otherwise inaccessible world.

This was a period when people discovered unreachable numbers

and ratios such as Pi and the Golden Number, which according to Greek aesthetics was the key to all beauty.



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Pythagoras and the Universe of Numbers

This was also the period of the invention of geometry, which shows how the mind can reach realities that the senses obscure or warp. The key figure in these discoveries was

Pythagoras. Born in the middle of the sixth century B.C., he was a unique being, half human, half divine, according to his followers. What was most important about him was the faith he invested in the reality of numbers. "All things

are numbers," he said. Shapes and structures are determined by numbers. According to Pythagoras, miracle proportions underlie all relationships; geometry is the architecture of the universe.



Rationalism and Reason

Not all sages of the time shared Pythagoras's obsession with numbers. Confucius said, "I sought the truth in measures and numbers, but after five years I still hadn't found it." If you believe that geometrical figures are real, you believe in the truth of a supersensible world. And once you believe that, then you're believing in something that is like God—no one has ever seen it. We only see crude approximations of it. But once you believe in it, then it's natural to argue that the objects of thought are more real than the objects of sense. Thus, the only triangles we know about are those embodied in our own thoughts—when we draw a triangle, it's not a real triangle, it's just an approximation of a triangle. Rationalists went on to suggest that the same might be true of everything—a real tree is the tree we think of, not the tree that we see embodied in crude material form. Reason seemed able to open new territories in the mind and expose truths that had previously been concealed.

The Paradoxes of Chinese Rationalism

The Chinese rationalist and philosopher Hui Shih of the fourth century B.C. formulated his ideas in a series of brilliant paradoxes. For Hui Shih, the thought itself, the mental impression, constituted reality. Objects themselves could be illusions. Data acts on the mind and the mind processes it before it becomes sensation. For example, it's only when we register the image of a tree mentally that we encounter the reality of the tree. Thought needs no objects outside itself; it can make up its own objects. Thought is pure and untainted by experience. For a true rationalist, the best laboratory is the mind and the best experiments are thoughts.

Consequently, reality loses importance. This type of conclusion is highly impractical and seems to open up a gap between reason and experience. The

last great project of the age of sages in secular thought was the attempt to plug that gap—and there were two ways of doing it.

Aristotle's Solution

Aristotle devised rules both for logic and for the practical application of science that have been followed ever since. The thinking of Aristotle makes sense to us not because he was modern, but because we are Aristotelian, because we still think in the grooves that he carved. His rules of logic, in which you identify a major premise and a minor premise and deduce a conclusion from them, are rules that we follow to this day. In science, Aristotle set the example of observation and experiment as a means of identifying a truth, and of the senses as a reliable means of verifying whether something is factual or not. These are the basic principles of the empirical tradition.

Other Developments in Science and Rationalism

In China, the Taoists worshipped Nature and therefore attached supreme value to the accurate observation of it. The Chinese experimental tradition dates back to the traditions established by Taoist writers of this period. In India, a comparable school of logic known as the Nyaya School was devising rules very similar to those of Aristotle.

To understand the basic structure, the basic architecture of our thinking, and the basic assumptions that we make when we distinguish what is true from what is false—these types of ideas are the heritage of the age of sages. And the fact that similar traditions were sprouting in China, Greece, and India is proof of the interconnectedness of the world of thought of that period. In the next lecture, we will see how the same networks of thought dispersed the religious principles of the thinkers of this age.

FOR GREATER UNDERSTANDING



Questions

1. What was the Jewish compromise in terms of negative and positive views of the universe?
2. Why might Christ be considered one of the most optimistic political thinkers of any age?

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2. Warren Wilson College features an article by D. Mycoff entitled "Philosophical Traditions: Renaissance Platonism" — www.warren-wilson.edu/~dmycoff/plato.html
3. Washington State University provides a short description on the Legalists in China — www.wsu.edu:8080/~dee/CHPHIL/LEGALISM.HTM

Lecture 7: The Age of Sages: Religion

The **Suggested Reading** for this lecture is Felipe Fernández-Armesto's *Ideas That Changed the World*.

God Matters

If you believe in God, he's by definition the most important thing in or beyond the universe. Even if you don't believe in him, he still matters because of the way belief in him influences those who do. During the age of sages in the first millennium B.C., essential religious concepts about God were being formulated that would shape the history of human ideas.

Three new ideas about God arose during this time: the idea of a divine creator responsible for everything in the universe; the idea of a single God; and the idea of God as actively engaged in the life of the world.



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Ideas of Creation

To understand the idea of creation, you must imagine an even more elusive concept: the idea of nothing. The formulation of the idea of nothingness made conceivable a new understanding of the order of Nature. For once you realize the concept of nothing, you can imagine creation from nothing—the key to the tradition of thought essential to most influential religions in the world today.

Ideas of “creation” from the texts of the great civilizations of the Bronze Age were not really about creation, they were about how the universe came to be the way it is. Interestingly, the Big Bang Theory, which is today's favorite explanation of how the universe began to expand from a miniscule core, resembles many early creation myths. The Bang occurred and pre-existing matter was dynamically redistributed in space.

Ancient Egyptian creation myths tell of a creator transforming chaos into a world endowed with time. But the chaos was already there for the creator to mold. Masters of the early Upanishads had a notion of nothing—they called it “the Void.” But they didn't believe it was possible to have nothing, and they wondered how being could be produced from nonbeing. Brahman, the god of early Indian writings, didn't create the world out of nothing; he created it out of himself, “as a spider spins its web.”



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The Greek Logos

The first surviving texts outside of Jewish tradition in which there was a clear concept of nothing were the Greek poems of the eighth century B.C. They describe the birth of a world without prior matter. In that tradition of thinking, emotion, or thought, is the motivation of the universe. The heritage of that thinking was echoed in the Gospel of St. John, which begins, “In the beginning was the logos”—literally the “Thought,” which English translations of the Bible usually translate as the “Word.” When the gospel writer says that, he’s encapsulating the notion of early Greeks who believed that matter first arose from the sheer power of thought.

The Greeks and the Jews

Greek thinking and Jewish thinking slowly began to synthesize. The Jews had the most challenging account of creation from nothing. The Jewish notion was that of a creator who always existed, but who made everything else out of nothing. Therefore, the creator must be unique because nothing else could precede creation; he must be purely spiritual, because there was no matter until he made it; and finally, in the tradition of the Greeks, creation must have been purposeful.

The idea of creation from nothing is the standard account of creation in Christianity, Islam, and Judaism, and is the account of creation that most people believe. Nevertheless, the logical objections to the very existence of nothing, as well as to the problem of how you can create something out of it, continue to remain unanswered today.

Changing Ideas About God

The idea of a god who created everything suggests a god who controls Nature. And logically, if you believe in creation from nothing, God is a unique god. Though we are now very familiar with this idea, it must have seemed strange at first. Until the first millennium B.C., evidence indicates that most people who imagined an invisible world beyond Nature supposed that world was crowded with gods and spirits. The idea of one god overarching the universe was so strange that it was, as far as we know, unformulated until the first millennium B.C. Greek sages recorded the hierarchy of their bountiful pantheon. Persian sages, in the tradition of Zoroaster, reduced them to two, one good and one evil. In Indian thought, a multiplicity of gods collectively

represented divine unity. But in none of these traditions do you find a rigorously monotheistic conception of God.

Some even earlier traditions foreshadowed monotheism rather loosely. In Egypt, in the eighth century B.C., an ancient account of creation known as the Memphite Theology was written down for the first time, though its doctrines were probably far older. According to that text, a unique god initiated the process of creation, and other gods were created by him. The same notion of a single god was foreshadowed in the Upanishads' concept of Brahman. But, in none of these texts do you have a god whose very existence excludes the possibility that other gods might exist. That idea was an original contribution of Jewish thought and was developed in the sacred writings of the Jews of around the middle of the first millennium B.C.

Outside the Jewish world, the idea of monotheism did not readily take hold with others. Buddhism, for example, dispensed with the need for a creator by upholding that the universe was itself infinite and everlasting. Throughout India, China, and Greece, when people did accept the idea of a unique creator, they didn't refute the possibility of other gods.

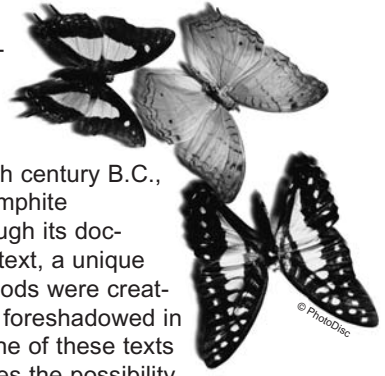
The Most Popular God of All

In the long run, the God of the Jews became the favorite god of the world. This happened for three historical reasons. First of all, there was the Jews' own sacred history of sacrifices and sufferings that served as a compelling example of faith for those who read about them. Secondly, a Jewish splinter group who recognized Christ as the incarnation of God opened its ranks to non-Jews and built up a vigorous and sometimes aggressive tradition of recruitment. Over a period of two thousand years, Christianity became the world's most widely diffused religion. The Christian message has proven itself remarkably adaptable to all sorts of cultural and political environments. And finally, the third development came early in the seventh century of the Christian era, when the prophet Muhammad studied Judaism and Christianity and incorporated the Jewish understanding of God in his own religion, Islam. Today, Islam has attracted almost as many adherents as Christianity. Well over a third of the world's population now belongs to the Abrahamic tradition—the combined tradition that includes Judaism, Christianity, and Islam.

God and Divine Love

The third new idea that arises is the idea of divine love, of a god who maintains an active interest in his creation. This idea did not appeal to Greek thinkers of the era. Aristotle describes God as a perfect being. And logically, he points out if you're perfect, then you don't need anything else. And if you do interest yourself in creation, it contradicts your own nature, because it's a compromise with your own perfection.

Numerous Chinese texts from around the middle of the first millennium B.C. describe the idea of the benevolence of heaven. Confucius's great adversary, Mo Tzu, anticipated a religion of divine love. Mo Tzu says that if you



want people to treat you generously, then you should behave in that way towards them, and if you love your fellow man it will be repaid by love in return. But this is a vision of human love for one another, so although Mo Tzu's doctrine reminds us of the similar doctrine later formulated by Christ, it's a different kind of doctrine because it was not rooted in a notion of a loving God.

Different systems and contexts have inspired the ethics of unselfishness. Unselfishness was recommended in the texts of the Upanishads, Greeks, Confucianists, and the Zoroastrian tradition. Many scholars have supposed that Christ might have been influenced by Buddhist teaching and their idea of universal sympathy.

Man: Master of the World

When you add the idea of a loving God to all these different teachings about human love, you end up with a fundamentally self-centered viewpoint. Humans have a way of privileging their own species by representing it as peculiarly loved by God. And therefore, out of this notion of divine love, the sages of the period preceding Christ evolved yet another new idea—the idea that human kind was special, and “higher than the animals.”

But not everybody agreed with this. Philosophers in Southern Italy in the late sixth century B.C. taught that all things born with life in them should be treated as kindred. But the god of the Jews, Christians, and Muslims was a god who made man in his image and gave humans dominion over all other life.

In the second half of the millennium, thinkers in other traditions formulated similar explanations for man's dominance. Aristotle drafted a hierarchy of living souls in which plants were at the bottom, nonhuman animals were in the middle, and humans were at the top. A similar idea was formulated in third century B.C. China by Chuang Tzu, who said, “Man has spirits, life, and perception, and in addition the sense of justice, therefore he is the noblest of earthly beings.” Even Buddhism ranked humans as higher creatures than others for purposes of reincarnation.

Late in this period, Jews began to use the image of divine love to express man's special relationship with God. Certainly, the idea is emotionally satisfying because love is a universal emotion, something that everybody has experienced and can therefore understand. By making God's love embrace all humans rather than a particularly chosen people, Christianity managed to acquire universal appeal.



FOR GREATER UNDERSTANDING



Questions

1. How does the Big Bang Theory resemble many early creation myths?
2. Why did the God of the Jews become the favorite God of the world?

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NASA's Wilkinson Microwave Anisotropy Probe (WMAP) website features detailed scientific data about the universe, the Big Bang Theory, and attempts to quantify the characteristics of the known universe — http://map.gsfc.nasa.gov/m_uni/uni_101bb1.html

Lecture 8: Ideas About Religion

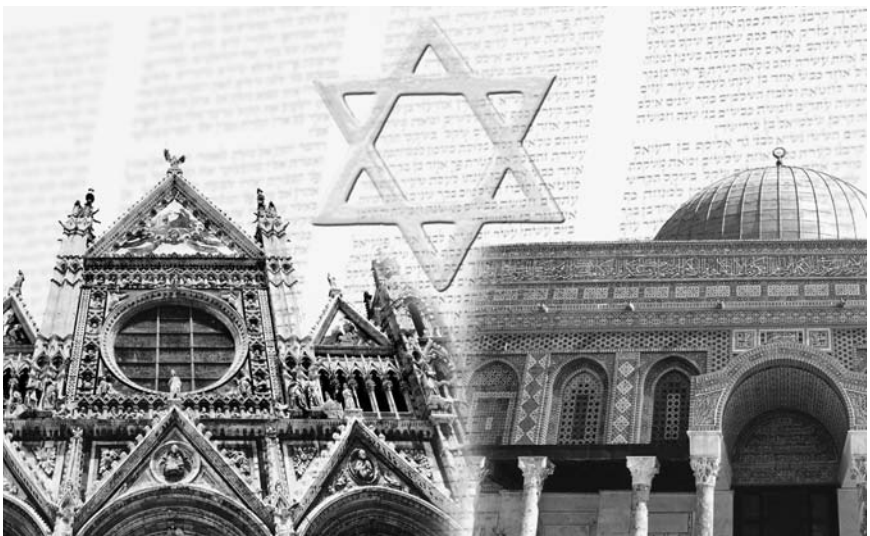
The **Suggested Reading** for this lecture is Felipe Fernández-Armesto's *Ideas That Changed the World*.

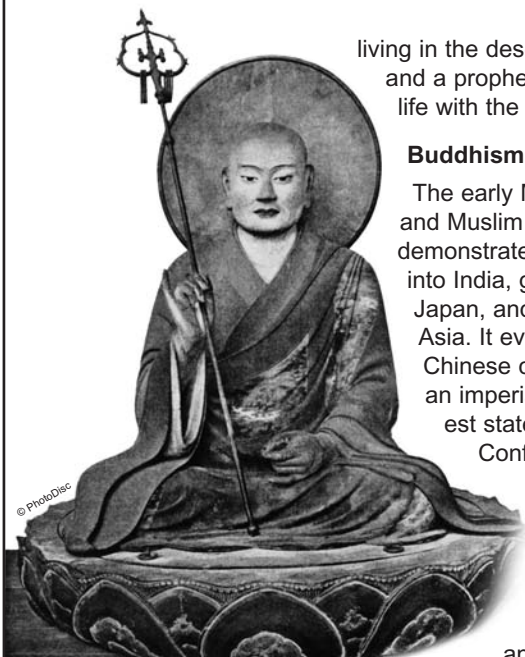
Two Rising Forces: Christianity and Islam

During the 1,500 years after the age of sages and the life of Christ, the great religions of the world were epicenters of new thinking. The two new major religions of the period, Christianity and Islam, opened up the richest areas for new thinking. Both of these religions adopted the two key ideas of Judaism: the uniqueness of God and the creation of the world from nothing. But both of them modified Jewish ethical teaching. The laws of Moses, the “law” and the “prophets,” these were terms that Jews used for their ethical teachings. Christianity replaced law with “grace” as an agent of salvation, and Islam substituted new laws of its own for those of the Jews.

Both religions found constituencies and arenas of expansion in and around the old classical civilizations of Greek and Roman antiquity. As a result, both had to adapt to the classical heritage. They had to square their own teachings with classical learning, reason, and science. In both cases, this task was difficult because of the social contexts in which the new religions thrived.

Christianity was condemned by people who disliked it as a religion of slaves, women, and outcasts. Christ's human father was a carpenter—an artisan of a very modest background. Christ's disciples were all chosen from low social ranks. Muhammad came from a much more prosperous background—a rich merchant family—but he excluded himself from the company of the elite by





living in the desert, adopting ascetic practices and a prophetic vocation, and spending his life with the nomadic Bedouin.

Buddhism: After the Age of Sages

The early Middle Ages saw great Christian and Muslim expansion, and Buddhism demonstrated a similar trend as it spread into India, gained influence in China and Japan, and colonized much of Southeast Asia. It even came close to taking over the Chinese court, which would have made it an imperial religion in the world's mightiest state, but the Taoist and

Confucianist establishments in China effectively kept Buddhism at bay. Buddhism failed to attain official status in any major state, though it did become the official religion in smaller states such as Burma, Siam, and Tibet. Elsewhere, Buddhism

survived and continued to make enormous

contributions to culture, but the rise of Hinduism largely displaced it from India and competed with it in much of Indochina.

While Buddhism declined, other religions, like Christianity and Islam, grew in importance. In the global arena, Buddhism only really became a competitor with Islam and Christianity in the late sixteenth century when it began to expand again in Central Asia. Not until the twentieth century did Buddhism begin to make extensive conversions elsewhere in the world.

Christianity Gains Ground

In the long run—between Buddhism, Christianity, and Islam—Christianity demonstrated the greatest cultural adaptability. Since Muhammad himself, all proponents of Islam have represented their own religion as a way of life with strong prescriptions about society, politics, and codes of behavior. This has made it highly suitable to some societies, but unworkable in others. Christianity is a much less prescriptive religion and it has a much more malleable moral code. It has been able to penetrate just about every type of society and habitable environment.

The Word of God vs. the World of Reason

The teachings of Christ, Muhammad, and Buddha were represented by their followers as revelations from God. So the problem for each of these religions was how to reconcile revelation and scripture with the other great sources of knowledge and truth from the age of sages, namely reason and science. Indeed, the history of ideas over the next 1,500 years would consist of an ongoing dialogue between faith, reason, and science.

Attempts to Reconcile Faith and Reason

Christian thinkers were amazingly successful in reconciling Jewish doctrines with the philosophical ideas of the ancient Greeks and Romans. In the fifth century, Boethius produced a guide to the logic of Aristotle. This guide remained available to Christian thinkers throughout the Middle Ages. They refined it and tried to make Christianity compatible with it. The scientific tradition passed down from antiquity was also strongly preserved by Islamic scholars, who in turn passed it on to the Christian tradition.

The reason and science of antiquity were familiar to Christian thinkers. It seemed perfectly natural and reasonable for them to understand their own religion as not just compatible but convergent with reason and science.

The twelfth and thirteenth centuries were also a vibrant period of scientific experiment and technological innovation in Western Europe. This prolific age of scientific experimentation was not exceeded until the eighteenth century. Christian thinkers were evolving a new doctrine of the compatibility of science and religion based on the insight that nature is itself God's work. So by experimenting, observing, and analyzing, you are exposing the wonder of creation and confirming the existence of God.

The Rejection of Reason and Science

But just as people had recoiled from excessive reliance on reason in defense of faith, so they recoiled from establishing science as the basis of understanding the truth about God. They viewed techniques of reason as a means of confining God. In part, this recoil from science took the form of the rejection of science, and the recoil from reason took the form of the rejection of reason.

In the fourteenth century, a very strong movement of this kind was led by the teacher William of Ockham, who denounced the advocates of reason for what he called "necessitarianism," for forcing God's behavior into the channels permitted by logic.

Other Methods of Finding Truth: Mysticism

Apart from just rejecting reason and science, thinkers of this era tried to find ways around it. The major development was of what we call "mysticism," or the belief that you can apprehend truth directly from God. This was an ancient technique, but it found a new kind of advocate—rational, logical—in St. Augustine of Hippo in the late fourth and early fifth centuries. Perhaps his most significant contribution to the thought of subsequent eras was what historians of philosophy call his Doctrine of Illumination, which claimed that there are certain truths you can know by direct apprehension from God—things like mathematical axioms, the idea of beauty, or the existence of God himself. These types of ideas contributed to a mystical tradition in which thinkers transcend reason and science—even

St. Augustine from a painting by El Greco



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In an illustration from a fourteenth-century Persian book, Muhammed receives the Word of God from an angel.

the authority of the Church and the Scriptures—by opening themselves to direct communication with the divine mind.

Islamic mysticism flourished between the eighth and the twelfth centuries. This tradition was similar to the tradition in Buddhism known as Zen, some of the advocates of which had ideas similar to St. Augustine's Doctrine of Illumination.

Living Right: Religions and Life

Thinkers of this period addressed the problems of reconciling religion and life in two main areas. First, they thought about the state and how you can legitimize authority by appealing to the divine. This was a period that produced both in Christian and Islamic traditions notions of

Holy War, which had frightening consequences for the rest of history. On the

other hand, there was also subver-

sive religious thinking about poli-

tics and ordinary life. This period

saw the origins of a strong move-

ment in medieval Christian thinking

that political philosophers call social

contract theory. This theory claimed that

the legitimacy that God confers on the state rises

upwards through the people. The people entrust the ruler with it, but it's a

sacred trust that the ruler must not break. The best interests of the people

must come first, and above the ruler's own interests. Similar ideas were also

found in Buddhism and Islam.



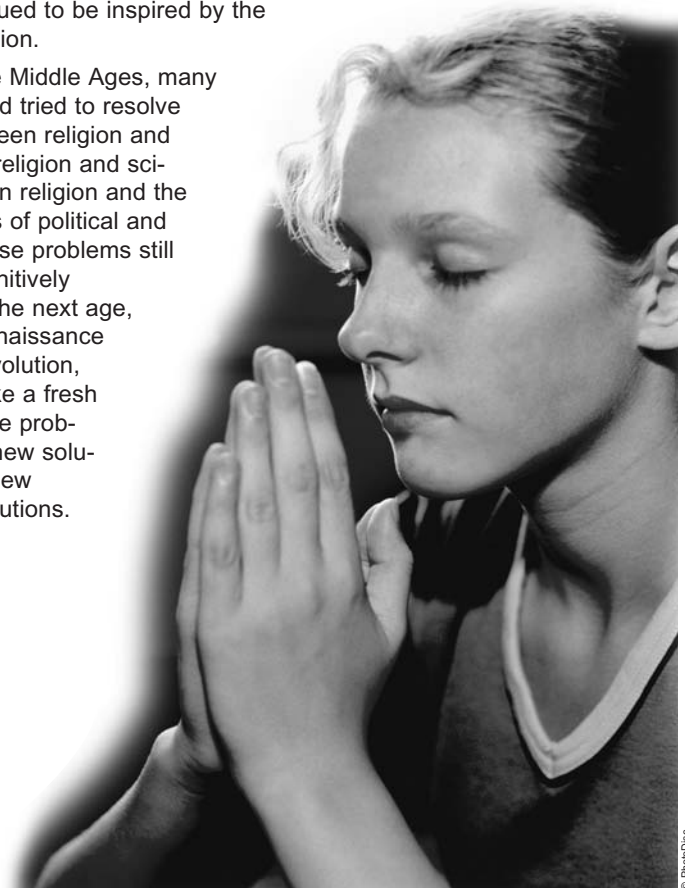
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But how do you stop the elite from exploiting the people? Indeed, history tells of centuries of aristocrats in the Middle Ages who paid lip service to God and went to mass, but who also oppressed the people terribly. A partial solution to this problem was the idea of chivalry—the idea that people who have no specifically religious role can strive to save their souls by leading ordinary lives, praying, observing chastity, and by dedicating to God their prowess on the battlefield.

Religion and Revolution

In Christianity, Islam, and Buddhism, the Middle Ages was a period abounding with preachers and prophets who devised new thinking that made revolution, popular insurrection, and uprisings holy, sanctifying the poor in their violent response to the oppression of the elite. This tradition is called “millennarianism.” In its purest form, it espouses the idea that at the end of time, God will put right all the inequalities of society. But for those revolutionaries of the Middle Ages, it meant something even more immediate. It meant that the poor could justly take events into their own hands and try to realize God’s ultimate objective for the world here and now. Ever since, popular peasant rebellions throughout the world have continued to be inspired by the same religious vision.

By the end of the Middle Ages, many heroic thinkers had tried to resolve the tensions between religion and reason, between religion and science, and between religion and the terrible exigencies of political and social life. But those problems still had not been definitively resolved. During the next age, the age of the Renaissance and Scientific Revolution, thinkers would take a fresh look at those same problems and devise new solutions, or at least new approaches to solutions.



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FOR GREATER UNDERSTANDING



Questions

1. Why have Christianity, Islam, and Buddhism had so much influence in the history of thought?
2. What intellectual and cultural challenges did these faiths face, and how did Christians and Muslims meet them?

Suggested Reading

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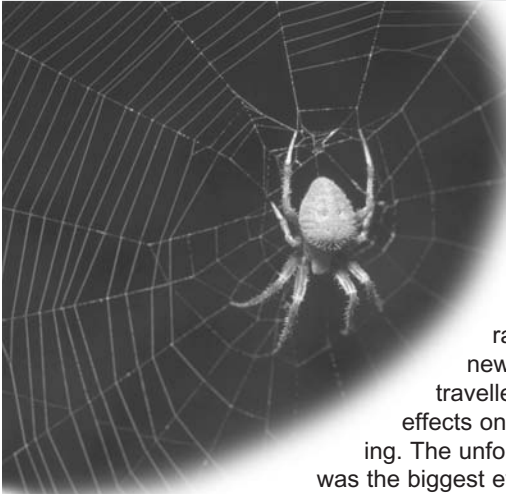
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Websites to Visit

1. The PBS *Faith and Reason* website provides an online guide to the hour-long television program with the same name aired in 1998 — www.pbs.org/faithandreason
2. Wake Forest University (Winston-Salem, NC) website features a lecture by Adjunct Assistant Professor Terry Matthews entitled “Religion and Revolution,” which gives a historical perspective on the American Revolution citing the impact of religion with links to other resources — www.wfu.edu/~matthetl/perspectives/five.html

Lecture 9: The Renaissance and the Scientific Revolution

The **Suggested Reading** for this lecture is Felipe Fernández-Armesto's *Ideas That Changed the World*.



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The Columbian Exchange

During the great ecological revolution known as the Columbian Exchange, life forms of different continents—seeds, germs, insects, predators, and pets—crossed the oceans with people. Some of them were carried deliberately by planters and ranchers who were eager to exploit new soils, but many of the life forms travelled by accident. Either way, their effects on the environment were transforming. The unforeseen result of these changes was the biggest event in evolution since the invention of farming—130 million years of evolutionary divergence was brought to an end. Plants and animals of the various continents had gradually been growing more and more unlike each other, and then suddenly that long process of evolutionary divergence yielded to a new convergent trend.

The Plagues

Meanwhile, for reasons we still don't understand, the world of microbial evolution changed to the advantage of humankind. The age of plague had begun in the fourteenth century when the Black Death wiped out large portions of the populations of Eurasia and North Africa. In the 300 years after the Black Death, plagues reoccurred frequently in those areas. Then, in the sixteenth century, these Old World diseases crossed the oceans and spread to the Americas, killing off almost 90 percent of the indigenous populations.

But by the end of the late seventeenth and early eighteenth centuries, the plagues retreated and populations boomed almost everywhere, and especially in former plague trouble spots such as Europe and China. Traditionally, historians have ascribed this change to better food, hygiene, and medical science. This explanation is not adequate because evidence shows that some places with poor food, medicine, and hygiene experienced



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just as much population growth. The age of plagues ended—in part, at least—because of the way microbes behaved rather than because of the way humans behaved.

Trends in World Inventiveness

The sixteenth and seventeenth centuries marked the beginning of a long, gradual shift in the worldwide balance of inventiveness, innovation, and influential thinking. Emerging ideas were concentrating disproportionately in Europe. Before this time, the power of some human groups to influence others had radiated primarily from civilizations in Asia, India, and especially China.

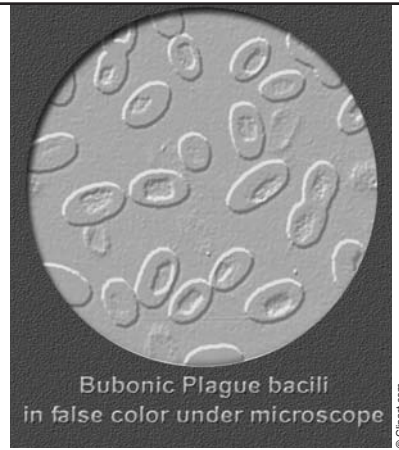
In technology, China had generated most of the world's impressive inventions. Paper and printing, paper money, gunpowder, the blast furnace, the compass, the rudder, the separable bulkhead—all of these came from China. Meanwhile, the only technologies of Western origin of comparable significance for the future of the world were glassmaking and the mechanical clock.

By the end of the seventeenth century, however, signs were accumulating that Chinese supremacy was already under strain from European competition. The turning point occurred in 1674 when the Chinese emperor took control of the imperial astronomical observatory away from native scholars and turned it over to European Jesuits. Throughout the eighteenth century, however, Europeans continued to look to China for models in aesthetics, philosophy, and political wisdom. China remained an immensely powerful civilization in terms of its technology, military potential, and enormous wealth. In those respects, the balance didn't begin to shift in European favor until the eighteenth or nineteenth centuries.

Renaissance and the Scientific Revolution

The word Renaissance means “rebirth.” The people who devised it chose it to designate intellectual trends in the early-modern West, because they wanted to emphasize the importance of the rediscovery of classical learning, classical texts, and the artistic heritage of ancient Greece and Rome. But people had never forgotten the importance of classical antiquity in the West—artists had always copied classical models, scholars always searched for classical texts, and writers always followed classical examples.

Nevertheless, during the late Middle Ages, in schools in France and Northern Italy, something new was taking shape. It was a new kind of curriculum that we now call “humanist.” It was humanist in that it concentrated on humane subjects. This curriculum was characterized by the privileging of moral philosophy, history, poetry, and grammar above ideas of theology, law, and practical subjects. Humanism bred new, secular ways of looking at the world. Humanism also induced scholars to look outside their own societies, to practice ethnography, to turn to the wider world for insights. They were concerned with problems about the history and origins of language, and problems about the historical development of societies. The comparison of differ-



Bubonic Plague bacilli
in false color under microscope

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ent cultures at different times became a major preoccupation of scholarship. The notion of “progress” arose from people looking at the past and seeing societies developing, changing, becoming more like the familiar world of their own day. Meanwhile, the discoveries of explorers, scientific data, and objects of art and nature, collected and catalogued in the forerunners of modern museums, provided new material for scientists to study.

While Renaissance humanism did bring people towards an ever more scientific way of looking at the world, humanism in itself was not enough to provoke a scientific revolution because it remained essentially humane—concerned with human life and human thought.

Renaissance Hermetism: The Magical Origins of the Scientific Revolution

Along with humanism, the Renaissance was rich in Hermetism—ideas based on a magical approach to humans’ relationship with nature. In addition to the wisdom of the ancient Greeks and Romans, there was significant interest in the late fifteenth and early sixteenth centuries in the supposed wisdom of ancient Egypt. Unfortunately, scholars of the period were unsuccessful in deciphering hieroglyphics. They wanted to know about the ancient Egyptians, but the sources weren’t available. So they unwittingly turned to false ancient Egyptian sources; in particular, a text ascribed to Hermes Trismegistus that claimed to represent a distillation of ancient Egyptian wisdom. In fact, this text was a forgery written centuries after Egyptian civilization had collapsed.

The basic doctrine of this pseudo-Egyptian wisdom was that man could manipulate nature magically. In this resurgence of magical ideas, the Scientific Revolution originated.

Think About It . . .

There’s a lot of overlap between the work of an astrologer and that of an astronomer. An alchemist and a chemist will do a great deal of similar work. Most of the great figures whom we think of as the heroes of the Scientific Revolution worked on occult subjects—even Sir Isaac Newton. Scientists of the Scientific Revolution were also Hermetists, magicians, and alchemists.

Other Important Developments: Exploration, Experiment, and Philosophy

There are three other trends that shaped the development of the Scientific Revolution. The first was the sheer breadth of knowledge available to



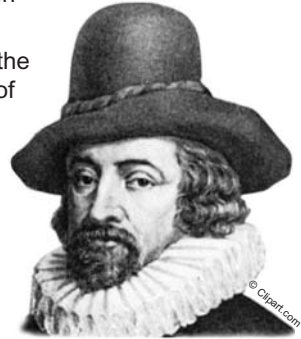
Portrait of Maddalena Doni
by Raphael, 1506

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European scholars in the sixteenth and seventeenth centuries that resulted from world exploration. Explorers brought back animals, plants, and ethnographic specimens and observations from previously unknown lands. All of this became the raw material of scientific investigation back in Europe.

The second great trend was the development of and confidence in experiment as a means of accessing knowledge. The great heroic figure associated with this idea was the early-seventeenth-century English scholar and bureaucrat Sir Francis Bacon. An improbable scientist, Bacon captured the essence of scientific method—the idea that you can make a series of experiments and observations, and if you find consistent results, then you can infer a general law from them.

The third great development was new thinking in the rationalist tradition. The hero of this cerebral form of truth finding was René Descartes. One of his great new ideas was that doubt confirms the reality of the doubter. In contemplating his own doubts, Descartes saw evidence of his own existence—if he didn't exist, then he couldn't doubt whether he was really there or not. Ever since Descartes, there has been a potentially destructive tendency in Western thought: people can believe in their own reality, but deny the reality of everything else.



Sir Francis Bacon
(1561–1626)

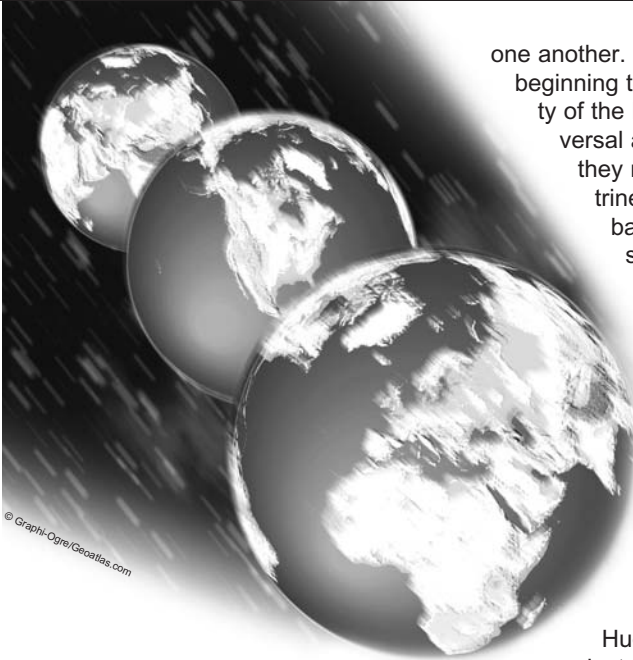
Facing the Realities of Political Change

The sovereign states of Europe were in conflict. New empires were forming as the result of exploration and colonization. During this period, three new political ideas are especially notable for their subsequent importance and enduring influence.

First, there were the amoral ideas associated with Niccolò Machiavelli in the early sixteenth century. A Florentine diplomat and failed politician, he produced the highly influential work *The Prince*. Probably originally intended as a satire, it conveyed a potentially destructive new doctrine for the state—the state exists only for its own ends, the ruler's responsibility is to maximize the interests of the state, and he need not worry about making other people good or being good himself. All subsequent debate about whether the state is responsible for welfare or education is a projection of the debate about whether it is responsible for goodness.

The second major idea was the universality of humankind. It was a surprising and unusual idea. It hadn't occurred to most societies for most of history. Previously, people had defined themselves and their own group as unique moral communities, and everyone else was seen as outsiders. In the sixteenth century, as a result of the campaigns of the great Dominican friar Bartolomé de Las Casas on behalf of the peoples of the Americas, the new idea of seeing the whole of humankind as a single moral community firmly took hold. Some of Las Casas's writings were very popular and impactful.

The final new idea was internationalism. This was a period of the growth of sovereign states which conducted both international relations and war with



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one another. They were gradually beginning to renounce the validity of the Pope's claims to universal authority. As a result, they needed a new doctrine of international law based on the rights of sovereign states to regulate their own affairs and sign treaties with each other. This idea began to take shape amongst scholars in the university of Salamanca in the sixteenth and seventeenth centuries.

In 1625, Dutch jurist Hugo Grotius formulated a doctrine of international law

and state sovereignty that has remained the basis on which interstate relations have been governed ever since. Today that doctrine is under scrutiny again because of the new era of globalization.

FOR GREATER UNDERSTANDING



Questions

1. Why wasn't Renaissance humanism enough to bring about the Scientific Revolution?
2. What is the relation between Hermes Trismegistus and magic?

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Websites to Visit

The National Humanities Center provides many links to resources discussing the biological and social ramifications of the Columbian Exchange — www.nhc.rtp.nc.us/tserve/nattrans/ntecoindian/ecolinksce.htm

Lecture 10: The Enlightenment

The **Suggested Reading** for this lecture is Felipe Fernández-Armesto's *Ideas That Changed the World*.

The Exchange of Ideas

The eighteenth century was a period of vital cultural exchange. The exchange was particularly strong in Eurasia, with the increasing amount of travel and commerce stretching across the Old World from China to Europe and back. The pattern of cultural exchange was wider than ever before because of exploration.

Europe was taking the lead in influencing the thought of the world, but this would not have happened without input from outside Europe. European political thought of the eighteenth century relied heavily on Jesuit accounts of society in China, India, and Japan. Those Asian models were processed by European minds which sought to improve the existing political institutions.

Values of the Enlightenment: Diderot's *Encyclopédie*

In order to understand the priorities and values of the Enlightenment, the essential text to examine is the *Encyclopédie*, which appeared in print between 1751 and 1772. This is where we turn when we want to understand the way people's minds worked amongst the intellectual elite of Western Europe in the eighteenth century. It was a vast work—seventeen volumes of text, eleven volumes of plates—and it bears the revealing subtitle: "Reasoned



A group of Chinese noblemen toured Europe in 1870 to establish commercial ties.

Dictionary of the Sciences, Arts, and Trades.” That title in itself is an ideal introduction to the priorities and values of the Enlightenment because it obviously privileges reason, order, and classification.

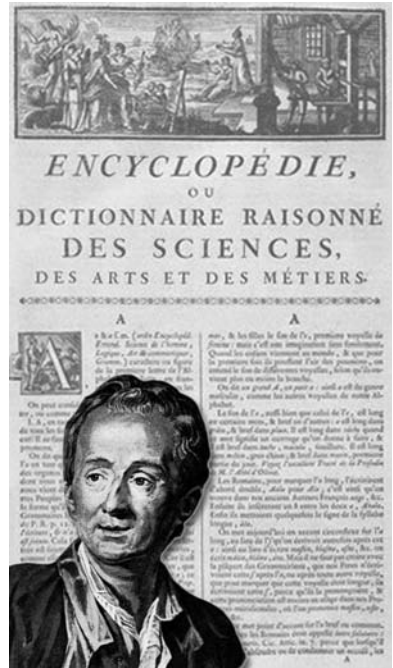
The *Encyclopédie* extolled a scientific and commercial view of the world, and a worldview that is all about how to make things work practically. The machine is the image at the heart of the way Enlightenment philosophers thought about the world. The machine was their metaphor for the way the world functions.

The *Encyclopédie* was immensely influential in its day. By 1779, 25,000 sets had been sold throughout Europe despite condemnation by reactionary governments and established churches. The ideas in the *Encyclopédie* spread through the European elite and were circulated even further in countless spin-off works.

The mastermind of the entire project was Denis Diderot. He wanted a comprehensive work that would “start from and return to man while covering every intellectual discipline along the way.” According to Diderot, the purpose of the *Encyclopédie* was “to assemble the knowledge scattered over the face of the earth, that we may not die without having deserved well of mankind.” But the project had a bias. First of all, it emphasized practical values and placed an enormous emphasis on utility, engineering, mechanics, and technology. The contributors to the *Encyclopédie* were united in seeing the world and the cosmos as a kind of machine.

Secondly, the approach to knowledge used in the *Encyclopédie* privileged reason and science as means to truth. The contributions drew heavily on the work of earlier eighteenth-century thinkers, especially Scottish and English philosophers who, building on the legacy of the Scientific Revolution of the previous century, tried to demonstrate the universal applicability of reason and science.

Although the contributors had different ideas about matters of political philosophy, the tone of the *Encyclopédie* was highly critical of the existing record of Europe’s monarchs and aristocrats. Most of the contributors to the *Encyclopédie* favored constitutional guarantees of the liberties of the citizen against the state. Many of them went as far as to insist on the “natural equality of all men.” Finally, not only did they criticize the political establishment, they also criticized the clerical establishment. The *Encyclopédie* is uniformly hostile to organized religion.



Denis Diderot
(1713–1784)

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The Idea of Progress

For Enlightenment philosophers, progress was absolutely fundamental; it was the idea that was essential to understanding their world. To make the idea of progress credible, thinkers had to address the great problem of suffering and evil.

In the seventeenth century, the rise of atheism made the task of explaining the problem of suffering and evil even more urgent. Some of the most famous work of the times focused on this problem. John Milton's *Paradise Lost* set out to "justify the ways of God to man."

The same question was addressed with a reasoned argument by Gottfried Wilhelm Leibniz in 1710. Leibniz's take on the problem of explaining progress in the face of good and evil starts from the truth that good and evil are inseparable—each is meaningless without the other. According to Leibniz, God must have set the balance perfectly. Leibniz's great critic, Voltaire, lampooned this theory in a catchphrase: "All is for the best in the best of all possible worlds."

Leibniz wanted to show that God's love is compatible with human suffering. When you ally this argument of Leibniz's with a conviction that human beings are fundamentally good, which most thinkers of this period shared, a secular utopia seems possible. People can work toward a perfect world by using their freedom to adjust the balance between good and evil in favor of good.

But belief in progress continued to be inhibited by the suspicion that it was merely a historical phase—exceptional by the standards of history in general. If you believe in human goodness, then you believe in freedom. Thinkers who are pessimistic about human nature tend to favor strong government, even tyranny if it helps keep people's destructive instincts in check. But optimists always want to liberate people to do good.



Ideas of Freedom: Economic and Political

Broadly speaking, up to the eighteenth century, most rulers in Europe thought that the best way to enrich the lives of their people was to control economic activity. Against the historical backdrop of the European economy, this idea made sense because for centuries wealth had been seeping out of Europe into the richer civilizations of Asia as the result of an adverse balance of trade. Enlightenment philosophers rethought that principle and argued that, on the contrary, economic freedom was conducive to prosperity.

The argument was best expressed by Scottish economist Adam Smith in *The Wealth of Nations*, published in 1776. He argued that because everyone naturally seeks their own best advantage, prosperity would be maximized if people were free.

When this doctrine was transferred to the political sphere, it had a revolutionary impact. If you take the idea to its logical conclusion, then the state would have to be dismantled, and individuals or small communities would be left to regulate their own affairs. This type of political environment requires confidence in the goodness of man to make it seem like a practical option.

Some Enlightenment thinkers, such as late-eighteenth-century Englishman William Godwin, did propose the dismantling of the state. However, the mainstream thinking of the Enlightenment was reluctant to go that far.



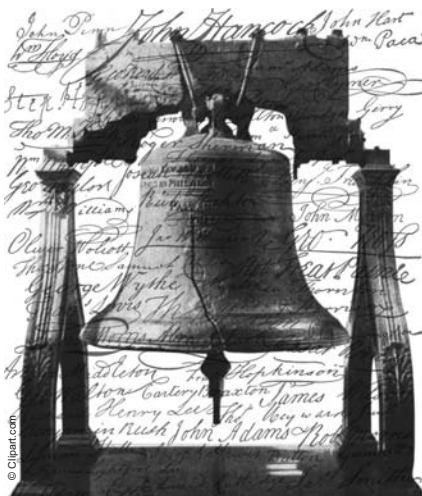
Adam Smith
(1723–1790)

Constitutions of Inalienable Rights

The struggle between constitutionalism and absolutism had begun in Europe. One side wanted the rights of citizens guaranteed by law, and the other didn't.

In the same period, campaigns for human rights were underway. The American Declaration of Independence is the greatest example of the Enlightenment idea of the "inalienable rights" of humankind. Similarly, French revolutionaries sought to constitutionalize the rights of citizens and deprive the state of any right to set those human liberties aside.

Inspired by the ideas of Enlightenment philosophers, feminist writers such as Mary Wollstonecraft emerged for the first time in European history. It was logically impossible to exclude women from human rights and the benefits of freedom. The idea of freedom was leading to the idea of universal equality.



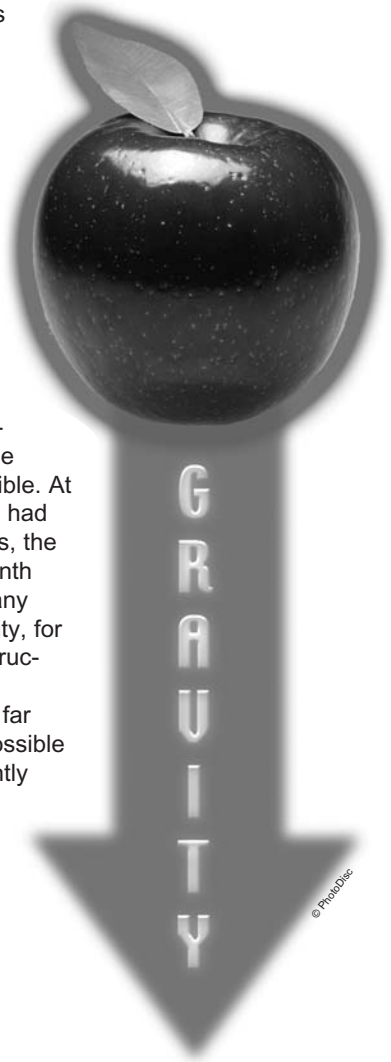
The Liberty Bell and signatures of the men who signed it.

But in practice, how do you contrive a system that at the same time treats everybody equally but gives people freedom to reward themselves by exercising their own initiative? A system like that would seem bound to lead to unequal results. That tension has inspired debate on the subject ever since.

The Great Contradictions

Ideas of political and economic freedoms seem incompatible with that basically mechanistic view that Enlightenment philosophers had of the world. If the world is really like a machine, everything is predictable, and everything is preordained. Enlightenment science was trying to make accurate predictions about the world and the cosmos, while political and economic thinking was introducing potentially chaotic freedoms into the way societies and economies were structured.

Western science of the eighteenth century was concerned with decoding the way the machine worked, but as they explored the machine of the universe even closer, scientists discovered a subversive feature of it that hadn't been expected. This was a machine operated by invisible forces, whose working parts were also invisible. At the end of the seventeenth century, Newton had already discovered one of those great forces, the force of gravity. In the course of the eighteenth century, science unlocked the secrets of many other elusive forces in the universe: electricity, for instance, oxygen, microbes. The invisible structures of the universe were beginning to be revealed, and the world suddenly appeared far more complex than ever before. It was impossible to look at the world without seeing it differently from the way all previous generations had seen it.



FOR GREATER UNDERSTANDING



Questions

1. What did thinkers we classify as belonging to “the Enlightenment” have in common?
2. Was the Enlightenment anti-religious?

Suggested Reading

Fernández-Armesto, Felipe. *Ideas That Changed the World*. New ed. New York: Dorling Kindersley Publishers, Ltd., 2004.

Other Books of Interest

Braudel, Fernand. *The Perspective of the World: Civilization and Capitalism 15th-18th Century*, Vol. 3. Berkeley: University of California Press, 1992.

Gay, Peter. *The Enlightenment: The Science of Freedom*. New York: W.W. Norton and Company, 1996.

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Websites to Visit

1. *The Internet Encyclopedia of Philosophy* provides a short biography of Denis Diderot — <http://www.utm.edu/research/iep/d/diderot.htm>
2. An online review of Diderot’s role as the general editor of the *Encyclopédie* from Jean Starobinski’s article “The Man Who Told Secrets,” from *The New York Review of Books*, Vol. XX, No. 4, March 22, 1973, pp. 18–21 — www.people.brandeis.edu/~teuber/diderotbio.html
3. BBC biography of Sir Isaac Newton — www.bbc.co.uk/history/historic_figures/newton_isaac.shtml
4. Isaac Newton website by Robert A. Hatch of the University of Florida — www.clas.ufl.edu/users/rhatch/pages/01-Courses/current-courses/08sr-newton.htm

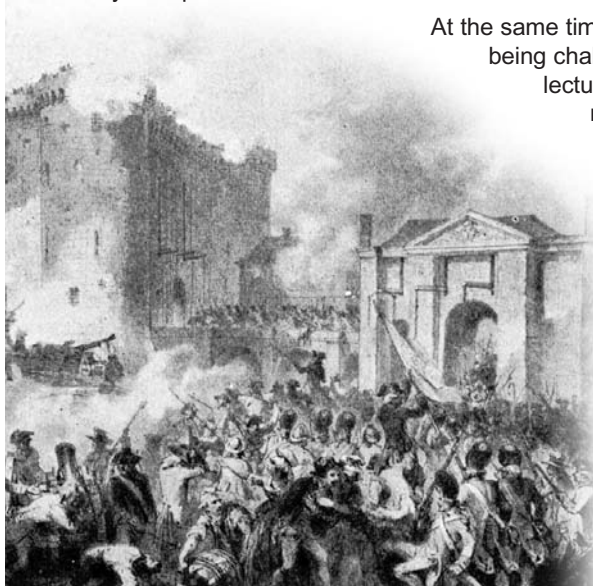
Lecture 11: The Nineteenth Century

The **Suggested Reading** for this lecture is Felipe Fernández-Armesto's *Ideas That Changed the World*.

Enlightenment Under Fire: Critical Events Leading Up to the French Revolution

If history is a landscape, the French Revolution is a trench gouged across it, separating the eighteenth century from the nineteenth. But the French Revolution didn't just happen. It had a historical context that helps to make it intelligible. Confidence in the ideas of the Enlightenment was eroded by a long-term, grinding process of change throughout the second half of the eighteenth century. In the mid-1750s, one of the worst natural disasters of history, the Lisbon Earthquake, occurred. Tens of thousands of people were killed and one of Europe's great cities was ruined. Confidence in progress was shaken. Belief in the supremacy of reason was called into question because this terrible event had been completely unpredictable. Even scientists were unnerved—nature had seemingly struck back at human beings who had the arrogance to believe that they could control it.

After the Lisbon earthquake, even Voltaire was forced to reevaluate everything he believed about the inevitability of progress and the supremacy of reason. This was a crucial turning point in the thinking of eighteenth-century Europe.



At the same time, the Enlightenment was being challenged by two major intellectual currents. The first was a religious revival. The

Enlightenment had been an essentially secular tradition of intellectuals. Ordinary people did not share the same confidence in the omniscience and omnipotence of reason and science. While the Enlightenment philosophers were exalting reason and science, ordinary people were rejecting them, and turning back to God in a markedly emotional way.

The storming of the Bastille



Sensibility

Amongst intellectuals, a new cult of “sensibility” was attempting to reawaken the natural, instinctive, and emotional side of human beings in a way complementary with reason. In part, this turn toward nature was an acknowledgement of the insufficiency of reason. An important discovery that helped to persuade intellectuals that emotions were important was the idea of “popular wisdom.” Many late-eighteenth-century scholars were amazed to discover the wonders of folk literature and popular poetry: amongst ordinary peasants, people of no formal education, there were wonderful works of art.

Exploration and New Ethnographic Models

Meanwhile, explorers were bringing back stories of previously unknown societies. When Europeans first began to hear about Australian Aboriginals and African Bushmen, they considered them as inferior creatures. But the myriad ethnographic discoveries of the period gradually began to convince people that you didn’t need civilization, education, or the apparatus of reason and science to be good. Goodness was natural in humankind.

Two areas of ethnographic discovery introduced Europeans to models of “noble savagery.” The first was around the Great Lakes region of North America, where a series of ethnographic writers praised the qualities of the Huron Native Americans. These peoples were represented as natural philosophers with great skill at responding to and criticizing European doctrines and teachings.

The other area from which influential ethnographical models came was the Pacific, where explorers observed societies that appeared to embody Enlightenment ideals. Natives practiced freedom without ill consequence, and even seemed more virtuous than the people in Europe.

Romanticism

The cult of sensibility, the discovery of popular wisdom, and the encounter with noble savagery combined to make Romanticism. These new discoveries and encounters inspired people to look at nature in a new way. The exploration of the Americas in the eighteenth century was crucial in this respect. Explorers were bringing back pictures of amazing new landscapes. These scenes of nature dwarfed everything that had already been registered in traditional depictions of nature.

But Romanticism was more than just the appreciation of nature. Romanticism valued the unattainable—it was the pursuit that mattered, not the prize. That made the mood of the nineteenth century radically different from the mood of the eighteenth century. Thinkers were free to use a variety of new techniques in addition to traditional science and reason, including intuition. The great spokesman for the value of intuition was Immanuel Kant. He made many important contributions to ethics and philosophy, but he was never

more characteristic of his time than when he challenged reason, and enthroned intuition alongside it.

Idealism

Another defining idea of the nineteenth century was Idealism, the doctrine that only ideas really exist. The doctrine was first proposed in the eighteenth century by British philosopher Bishop George Berkeley. He noted that when we register something through our senses, what we are really perceiving, what we are really aware of, is the idea that we register of it, not the thing itself. Some nineteenth-century thinkers took this idea to the extreme. They proposed a very self-contemplative worldview in which the reality of anything outside your own mind cannot be trusted. This kind of pure subjectivity tends to make people antisocial. To get around that defect, nineteenth-century thinkers on this subject proposed that ideas are validated by being shared.

Nationalism

As a result of Idealism, a series of new ideas emerged about the validity of the collective pursuit of truth and happiness. Nationalism, for instance, is the idea that the nation is a reality, a shared consciousness that tells you something about your own identity. Thus people would be empowered to pursue goodness and universal benefits. In practice, it was a very destructive idea. When two self-validated communities came into conflict with one another, they often waged war.

Socialism

Socialism was another result of the attempt to collectivize human consciousness. At its most basic level, socialism put society above the individual. Individual interests were to be subverted in favor of a collective pursuit. Because of that, socialism appealed to the politically or socially disadvantaged.

Socialism split. On the one hand were socialists who privileged the state as the organism to deliver universal, equally distributed benefits to people. On the other hand, the anarchist tendency within socialism rejected the state as a potential oppressor and wanted society to be reorganized in small communities where people would know each other and work together for the common good.

The most intellectually spectacular current within socialism was communism, or Marxism. This idea was best expressed by Karl Marx, who had an original, two-fold justification for socialism. He had, first, an economic explanation of why socialism would work—workers put the most value into products by their labor, and the labor that went into producing a product was more important



A Japanese and a Russian soldier shake hands, signifying the end of the Russo-Japanese War, 1905.

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than the capital that went into it. Therefore, the workers would ultimately control the production and distribution of the goods. Alongside that economic argument, Marx produced a historical argument, which was that power inevitably gravitated to wealth. As workers assert their own power over production and distribution, they will take political power. Finally, the world will experience proletarian revolution and a socialist utopia.

In the long run, Marx's predictions seemed to be falsified by events. But throughout the nineteenth century and for much of the twentieth, people continued to be convinced by the intellectual appeal of Marx's arguments. The threat from socialism for the rest of the established order became one of the dominant features of the history of the times.

These ideas were the fruits of Idealism. Each generated a movement that pursued the ideal of recrafting society along utopian lines. This was a fascinating feature of the nineteenth century in Europe. Previously, when people sought to improve society, they looked to golden ages in the past. Now people saw utopias in the future.

Utilitarianism

A much more practical kind of utopia was being proposed by liberal and conservative thinkers in the Western world. The example that best characterizes these conservative and liberal projects was utilitarianism, the work of two English thinkers of the early to mid-nineteenth century: Jeremy Bentham and his pupil John Stuart Mill. The essence of their project proposed a simplistic view of happiness as a ratio of pain to pleasure, and an equally simplistic view of the function of the state as responsible for delivering the maximum possible amount of happiness to the greatest number of people.

According to Bentham, that objective would override all others, and if people were called upon to make individual sacrifices of liberty, so be it. His pupil Mill rebelled against that aspect of Bentham's thought. Mill altered the equation in an attempt to reconcile the collective pursuit of happiness with individual freedom. This was logically consistent because individual freedom is an essential part of happiness. But in practice, this balance has proven to be very difficult to strike.



Jeremy Bentham
(1748–1832)

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Karl Marx
(1818–1883)

FOR GREATER UNDERSTANDING



Questions

1. Which events and movements helped to subvert the Enlightenment?
2. Are romanticism, idealism, nationalism, socialism, and utilitarianism connected, and, if so, how?

Suggested Reading

Fernández-Armesto, Felipe. *Ideas That Changed the World*. New ed. New York: Dorling Kindersley Publishers, Ltd., 2004.

Other Books of Interest

Carey, John, ed. *The Faber Book of Utopias*. London: Faber and Faber, 1999.

Kant, Immanuel. *Critique of Pure Reason*. Ed. J.M.D. Meiklejohn. Amherst, NY: Prometheus Books, 1990.

Levine, Andrew. *The General Will: Rousseau, Marx, Communism*. Cambridge: Cambridge University Press, 1994.

Riley, Patrick. *The General Will Before Rousseau*. Princeton, NJ: Princeton University Press, 1988.

Websites to Visit

1. The Philosophy Pages website features a short introduction to Rousseau by Garth Kemmerling — www.philosophypages.com/ph/rous.htm
2. The Internet Modern History Sourcebook from Fordham University provides resources about Karl Marx and socialism — www.fordham.edu/halsall/mod/modsbook33.html
3. The Real Utopias Project at the A.E. Havens Center of the University of Wisconsin discusses the underlying principles and rationales for different emancipatory visions with the analysis of pragmatic problems of institutional design — www.ssc.wisc.edu/~wright/RealUtopias.htm

Lecture 12: A Century of Horrors

The **Suggested Reading** for this lecture is Felipe Fernández-Armesto's *Ideas That Changed the World*.

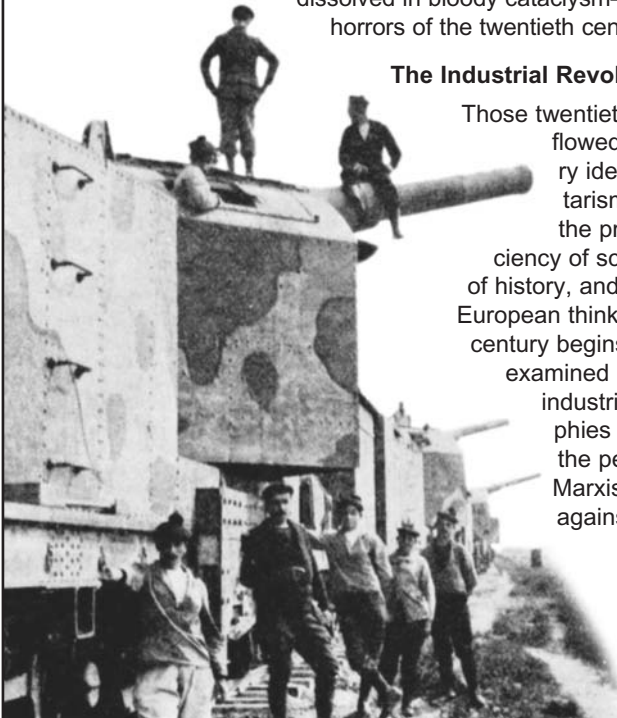
The Illusion of Progress

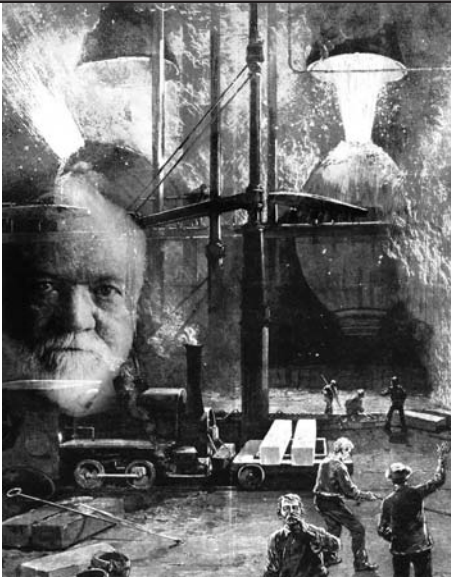
In the nineteenth century, it was difficult to go on thinking of progress as a function of human reasoning. The collapse of the Enlightenment in the French Revolution had brought down the house of reason, exposing human violence and irrationality. Instead of being driven by reason, improvement came to be seen as driven by vast, impersonal forces—laws of nature, history, economics, and biology. The result was a mechanized and brutalized view of the world. The illusion of progress was sustained by amazing breakthroughs in science and technology. An Industrial Revolution driven by steam greatly multiplied the capacity for production. Science discovered previously invisible worlds, the fossil record of the earth, links between species, how to manipulate gases, how to measure previously unknown forces, such as magnetism, electricity, and atmospheric pressure. But every advance could be adapted for evil as well as good. Intellect and morality registered no sign of improvement. Like the Enlightenment that preceded it, this nineteenth-century age of progress dissolved in bloody cataclysm—World War I and the horrors of the twentieth century.

The Industrial Revolution

Those twentieth-century horrors flowed from nineteenth century ideas—nationalism, militarism, the value of violence, the primacy of race, the sufficiency of science, the irresistibility of history, and the cult of the state. European thinking in the nineteenth century begins to make sense when examined against the backdrop of industrial change. The philosophies that best characterize the period—utilitarianism, Marxism—are only intelligible against that background.

Industrial invention increased the ability of nations to wage war. A French armored train (pulled by a steam locomotive) at the Western Front during World War I.





Scottish immigrant and self-taught industrialist Andrew Carnegie (1835–1919) used the capitalist system to establish the Carnegie Steel Company in Pittsburgh, which he later sold to J.P. Morgan for \$480 million. He became a generous philanthropist after his retirement.

At the start of the nineteenth century, Europeans viewed their continent as no greater than the other continents. But over the century Europe grew to gigantic stature and dominance by taking great demographic, industrial, and technical strides. In consequence, European powers ruled much of the world. European dominance was brief, however, because by the end of the century nations such as the United States and Japan had begun to industrialize and overtake many European countries in industrial prowess and capacity for war.

New Ideas Arise

We can divide the new thinking that arose from the ruins of progress into three main classes. First, the political moralities that justified and advanced the totalitarianisms that would come to be in the twentieth century. Second, the impact of new

scientific thinking on political and social worlds. Third, the subversive revolutionary theories of violence that arose in reaction against the growing power of the state and the growing menace of ideas favorable to the rulers, elites, and states of the day.

Friedrich Wilhelm Nietzsche

The most radical contributor to new political morality was Friedrich Wilhelm Nietzsche, a crippled, marginal, twisted outsider who became the great spokesman for the power of elites and for the supremacy of the “superman.” Nietzsche picked up on something that earlier German idealist philosophers had developed: the idea of the primacy of the will. More than reason or imagination, it was will that defined the individual.

In Nietzsche’s moral universe, the man who seizes power is a superior man. For Nietzsche, all women were inherently inferior. Will becomes more important than reason or virtue, and goodness disappears. According to Nietzsche, goodness is a false notion. Moreover, truth disappears. According to Nietzsche, all truth is illusory—he solved the problem of defining truth by asserting it did not exist. The only reality is self-fulfillment. Anger, lust, hatred, all these things become virtuous in the kind of new morality that he proposed. And the person who succeeds in imposing his will on others becomes a natural leader whom everyone should follow, the leader whom Nietzsche calls the “superman.”

Nietzsche probably never saw himself as a servant of the power of the state. His intent was simply to subvert all conventional notions. But it’s easy to see

how his doctrines became very serviceable to the totalitarian dictators who would wreak havoc in the twentieth century.

Particularly chilling was the way Nietzsche idealized war, and he wasn't a rogue thinker in this respect. War in the eyes of a lot of European thinkers of the nineteenth century was a good thing. They believed it would stimulate technological progress, improve the blood stock, eliminate the weak, exalt the courageous, and train nations in the practice of virtue. The notion that war was somehow good was one of the most frightening and surprisingly widely held doctrines of the era.

Developments in Science

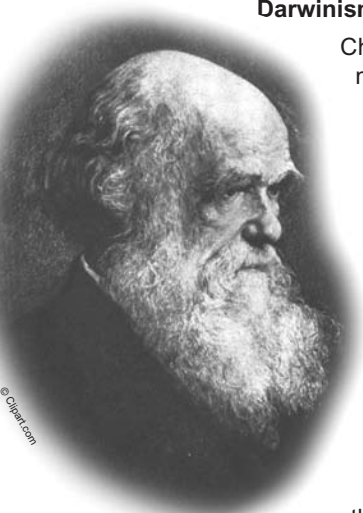
Alongside this new political morality, the nineteenth-century world was changed by the effects of science. One idea that survived the wreck of the Enlightenment was the conviction that science could reveal truths about the world that weren't accessible to any other mental technique. Practical science continued to develop new technologies that proved highly beneficial and extremely useful. The technology of the Industrial Revolution transformed the environment and enriched societies that adopted it. The comforts, food, and means of health available to ordinary people multiplied. All this served to vindicate the scientific project.

Much of the purported science of the nineteenth century wasn't the result of objective investigation, but the work of elites who sought to justify recrafting the world in the way they wanted. In particular, this was an age of racism based in pseudoscientific data that was later proven false or inadequate. One example was craniology—the measuring of people's skulls—which established supposed hierarchies of intelligence and asserted that white Europeans possessed superior intelligence.

Darwinism

Charles Darwin was a deeply unhappy man whose theories, although they were rigorously based on scientific data, were nonetheless influenced by the trajectory and tragedy of his own life. He had married his own cousin. Their children were sickly, and Darwin believed that he had condemned them to lives of evolutionary inferiority.

A very common misconception about Darwin was that he originated the notion that species changed. Most people at the time knew that species changed. What they didn't know was how they changed. Darwin solved that mystery by realizing that some of the species' changes that he could document were explicable in terms of adjustments to the environment. Darwin's model was excellent for explaining



Charles Robert Darwin
(1809–1882)

biological change. But when Herbert Spencer tried to apply it to human societies, it worked rather poorly.

Human society can indeed be characterized as an environment of struggle. However, the assumption that the social arena resembles nature in that those who succeed succeed because they are superior to others, that they deserve to survive more than others because they represent successful adaptations to the environment, is not only a cruel doctrine, but an intellectually unsustainable one.

Iniquities of Science: Social Darwinism and Eugenics

Spencer's doctrine came to be known as Social Darwinism. By projecting a scientific insight on the world of society and politics, it provided a justification for some of the most brutal political developments of the nineteenth and twentieth centuries. It began in the realm of eugenics. Eugenics proposed that the human race could resume progress if the feeble or intellectually dull were eliminated by scientifically prescribed breeding. Once you accepted the idea that you could intervene in human reproduction to stop the breeding of undesirables, then it was only one further step to say that the most efficient way of improving humankind would be to kill off everybody who wasn't fit to breed superior offspring. There's an inescapable link between Darwin's brilliant scientific world and the baneful social consequences of racial violence, eugenic manipulation, and the horrifying program to reshape humankind under the knife.

The ideas associated with Nietzsche and Darwin favored elites and the powerful, and condemned the weak. But justifications for violence and war could also be used at the service of the oppressed against the states and the powerful of the world. The nineteenth century was just as fertile in ideas of revolutionary nihilism as it was in ideas which justified racism and imperialism. One such nineteenth century idea was terrorism. Perhaps the most vivid and illuminating way of looking at the ideas of terrorism is to see them against the background of nineteenth-century thinking about war. Not only were nineteenth-century theorists anxious to justify and vindicate war, they also extended its reach.

Perhaps the most devastating theorist of terrorism was the German anarchist Johannes Most. The entire elite, he argued, including their families, servants, and all who did business with them, were legitimate targets of armed struggle to be killed at any opportunity. Any innocent person caught in the crossfire was a valid sacrifice for a good cause. Most's ideas anticipated the whole of the rest of the history of anarchist terrorism.

The legacy of all this nineteenth-century thinking to the twentieth century was to fuel some of the worst outrages ever inflicted by one group of human beings on others. The consequence would be a deeply troubled period of resurgent chaos.



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FOR GREATER UNDERSTANDING



Questions

1. How did industrialization affect new thinking in the West?
2. What made the ideas of Nietzsche and Darwin adaptable for evil?

Suggested Reading

Fernández-Armesto, Felipe. *Ideas That Changed the World*. New ed. New York: Dorling Kindersley Publishers, Ltd., 2004.

Other Books of Interest

Darwin, Charles R. *The Descent of Man*. Amherst, New York: Prometheus Books, 1998.

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Galton, Sir Francis. *Essays in Eugenics*. Honolulu: University Press of the Pacific, 2004.

Nietzsche, Friedrich. *The Will to Power*. New York: Vintage, 1968.

Schopenhauer, Arthur. *The World as Will and Idea*. Ed. David Berman. Trans. Jill Berman. New York: Everyman's Library, 1995.

Websites to Visit

1. The California State University (Chico) features a 1995 article by Charles F. Urbanowicz, professor of anthropology, entitled "The Life and Death of Charles R. Darwin: 1809–1882" — www.csuchico.edu/~curban/Darwin/DarwinSem-S95.html
2. The perspectives of Nietzsche by Bill Curry at the University of Pittsburgh — www.pitt.edu/~wbc Curry/nietzsche.html
3. The *Stanford Encyclopedia of Philosophy* provides the life and works of Schopenhauer — www.plato.stanford.edu/entries/schopenhauer

Lecture 13: The Restoration of Chaos

The **Suggested Reading** for this lecture is Felipe Fernández-Armesto's *Ideas That Changed the World*.

Into the Twentieth Century

The first decade of the twentieth century was a time of amazing intellectual fervor. An extraordinary barrage of unsettling new thoughts and revealing discoveries challenged the existing traditions. In a single decade, the legacy of the Enlightenment, and much of the thinking of the nineteenth century, plunged into the crucible and emerged changed.

Before the War

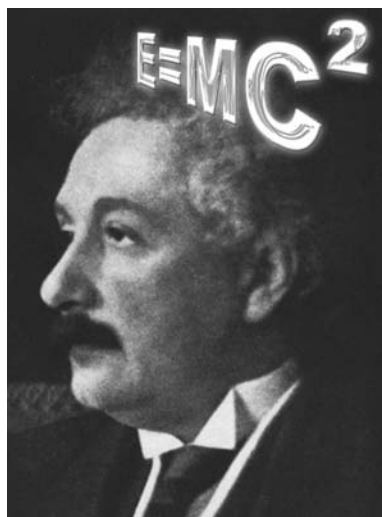
World War I is conventionally viewed as the start of a new period, a disaster after which the human mind had to adapt and adjust because it was no longer possible to detect order in such a scarred and blighted world. Because of the conviction that everything started anew with World War I, it's difficult to see the first decade of the twentieth century in its true light. In reality, the period between the year 1900 and the outbreak of World War I was the most startlingly innovative period in the history of human thought.

Henri Poincaré

During that decade, a scientific counterrevolution exploded certainties inherited from the seventeenth and eighteenth centuries. The figure who started this subversion was Henri Poincaré, a young French mathematician who became an intellectual celebrity. He proclaimed that scientists have their own agendas, that their hypotheses are often selected in advance of the data, and that it's naive to suppose that scientific hypotheses are determined by the experiments that precede them. They are determined by the prejudices and agendas of the scientists responsible for them. What people inferred from his views was that science was unreliable, that scientific facts were merely matters of judgment, and that nothing was certain in the world of the sciences.

Albert Einstein

After Poincaré, it was possible for very radical new thinking to gain audience. The most radical new thinker to profit from that opportunity was Albert Einstein. A low-paid clerk in the Swiss patent office, he was an outsider to the scientific establishment. He



was a young scientist whose teachers in school and professors at university had doubted his ability. But in 1905, he emerged from obscurity to detonate a tremendous explosion in the world of science when he formulated the theory of relativity, which constituted a remarkable challenge to the way people had previously seen the world.

Einstein's starting point was that experimental data had shown that the speed of light doesn't seem to change relative to any observer. Einstein explained it brilliantly by saying that the speed of light is constant, and it's time and space that are relative—it's time and space that change.

Evidence of Einstein's theory beginning to take effect on people's minds can be seen in the art of the time. In the twentieth century more than any other period in the history of art, art has been a mirror of science. It's no coincidence that in the wake of Einstein's publication of the theory of relativity that cubism began to depict a shivered, atomized world jarred into fragments.

The years following the proliferation of the theory of relativity saw equally bewildering new features of the universe revealed by quantum theory. Then Rutherford split the atom, and suddenly even tinier particles of which matter is composed became visible. But while science was unleashing these subversive new images of what the world was really like, potentially devastating philosophical malaise was also at work eroding confidence in traditional notions about language and reality, and how they are linked.

Henri Bergson

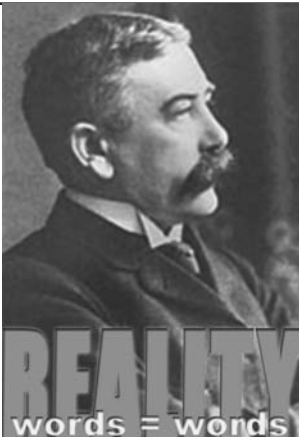
There were three primary contributors to new ideas in this field. The first was Henri Bergson. Hailed as the greatest philosopher of his day, he anticipated Einstein by proposing a new way of looking at time. He said we shouldn't think of it as successive moments but we should think of it as a construct that arises in our own minds and which we project onto events. In a way this is an even more radical rethinking of the nature of time from that proposed by Einstein. Bergson transformed it into an internal idea, part of the human mind.



Henri Bergson
(1859–1941)

William James

The second thinker whose contributions to philosophy were profoundly subversive was the American philosopher William James. On the one hand, he was looking for a justification of his own Christianity. At the same time, he was also looking for an American philosophy. His two-sided search for a philosophy led him to what he called "pragmatism." This was James's response to one of the oldest problems in philosophy—how do you tell truth from falsehood? His answer was that a proposition should be considered true in as much as it is useful. His justification for belief in God, for example, wasn't that God really exists, but that it's a useful idea to believe in. So this wasn't a doctrine about truth at all—it marginalizes and relativizes truth. Ironically, in his attempt to justify Christianity, he ended up giving people no better reason for believing one doctrine than for believing another.



Ferdinand de Saussure
(1857–1913)

Ferdinand de Saussure

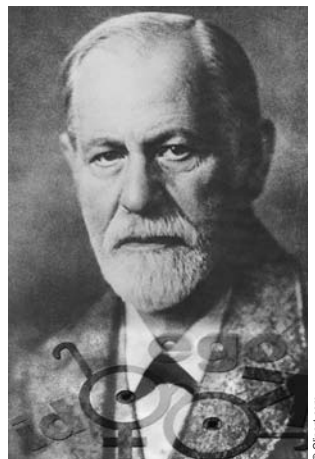
The third thinker was the linguist of Geneva University, Ferdinand de Saussure. He said that language doesn't function as a signifier of reality. Language is a matter of usage—when meaning is conveyed by language it's the result of associations triggered by sequences of words. Many of Saussure's readers concluded that language doesn't tell you anything, except about itself. Thus, language is very loosely if at all connected with objective reality, and that, as Jacques Derrida said, "All reading is more or less misinterpretation." This is a potentially devastating doctrine when combined with the new ideas in science and philosophy. Now there's no fixed space or time, scientific claims are unreliable, the basic matter of the universe behaves

in inexplicable and unpredictable ways, truth is relative, and language is divorced from reality. Science and philosophy alone would have been enough to change profoundly the way people thought. But there were equally unnerving and unsettling contributions from psychology and anthropology.

Sigmund Freud

In psychology, the key figure was Sigmund Freud. He claimed to have exposed the world of the subconscious with the effect of undermining conventional ideas of experience, and, in particular, ideas about the experience of sex and childhood. Freud's claims were extremely ambitious. His journey into the unconscious began when he discovered his own Oedipus complex, as he called it—a suppressed resentment of his father and commitment to compete with him, which he went on to generalize as something that is universally present in the unconscious of human males. That was only the start of a whole series of subconscious drives and urges, which Freud believed arose in every human psyche and no one could escape. His ideas were shocking for people to acknowledge because what he was saying was that human behavior is impossible for the individual to regulate.

But Freud's claims were exaggerated. He made his inferences based on a relatively small number of rather neurotic bourgeois patients whom he treated in his home city of Vienna. Obviously, not everybody in the world develops psychologically in the same way; there are all kinds of stresses that make our psychological development as individuals different from those of other individuals and as groups different from those of other groups. Nevertheless, Freud was a brilliant writer, and his claims proved immensely appealing and influential. Freud's technique of psychological treatment called psychoanalysis gained a vast constituency in the twentieth century, and has led to a fundamental



Sigmund Freud
(1856–1939)

revolution in values. Ultimately, as a result of Freud's influence, Westerners have come to place an extremely high value on the perceived positive health benefits of sexual candor, the release of inhibitions, the struggle against repression, and escaping from feelings of guilt.

Franz Boas

Meanwhile, a revolution in anthropology was happening in America. Franz Boas, one of the great unsung heroes of the Western liberal tradition, was a professor of anthropology and a museum director in New York. He became the master of the most influential school of anthropologists in the world and advanced the discipline by encouraging his students to do fieldwork, which was a new idea at the time. It was possible for Boas's pupils to do field work because they had indigenous American communities close by. As a result, his pupils accumulated vast amounts of scientific data and observations of the lives and thoughts of the indigenous peoples who were previously dismissed as merely savages.

The effect of that data was to prove that there was no such thing as what conventional anthropologists at the time called the "savage mind." Everybody shares the same kind of mind, no matter the technological prowess of the societies they live in, or the material level of culture they enjoy, or the sophistication of their way of life. He concluded that people think differently in different cultures not because some have superior minds, but because all thought reflects the traditions to which it is heir, the society by which it is surrounded, and the environment to which it is exposed. That was a devastating discovery for a world that had become inured to imperialism, a world sliced and stacked in order of race. After anthropology had exposed that truth, it became impossible to justify imperialism in traditional terms again. Conversely, it became possible to rethink the relationship of one culture to another, along the lines of what we now call cultural relativism—the acknowledgement that every culture deserves respect on its own terms.

This explosive first decade of the twentieth century didn't add any radical new political ideas to those that had been inherited from the nineteenth century. However, it did reveal what some of them were like in action. In 1911, the first great peasant revolutions of the modern world broke out in China and Mexico. The power of popular revolution to destroy ancient institutions was suddenly revealed in a way that frightened elites. This period leading up to World War I was both a graveyard and a cradle—a graveyard of certainties inherited from the past and the cradle of further new ideas and mental adjustments to the restoration of chaos.

FOR GREATER UNDERSTANDING



Questions

1. Which traditional certainties did new ideas of the early years of the twentieth century undermine?
2. Were new developments in mathematics, physics, psychology, philosophy, linguistics, and anthropology all equally scientific?

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1. The University of St. Andrews (UK) provides an extensive biography and other resources on the works of Henri Poincaré — www-groups.dcs.st-and.ac.uk/~history/Mathematicians/Poincare.html
2. Emory University features the life and works of William James — www.emory.edu/EDUCATION/mfp/james.html

Lecture 14: The Age of Uncertainty

The Suggested Reading for this lecture is Felipe Fernández-Armesto's *Ideas That Changed the World*.

After the great upheavals of the early twentieth century, the essential question was, could order be restored? New ideas had subverted or exploded the certainties of the past and the universe seemed chaotic and bewildering. As a result of intellectual efforts to meet that challenge, humankind has thought itself into a world of relativism, pluralism, indeterminacy, fragility, intractability, and uncertainty.

Niels Bohr

The spirit of unrest had invaded science. This sentiment was most noticeable in the context of quantum theory. The more observations of the motion of quantum particles was registered by scientists, the more baffling it became. On one hand was the contradictory behavior of light, which seemed to behave both like particles and waves. On the other hand, scientific data made the movement of electrons seem incompatible with conventional assumptions about motion; they moved around unseen and ended up in places where, strictly speaking, according to their measurable speed, it shouldn't have been possible for them to be. The foremost thinker on these problems was the Danish physicist, Niels Henrik David Bohr. He propounded the theory of the complementarity of waves and particles: it was possible to see light as both



Niels Henrik David Bohr
(1885–1962)

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waves and particles simultaneously without contradiction. With his German colleague Werner Heisenberg, Bohr proposed a theory that they called “uncertainty,” or “indeterminacy.” This theory was popularly interpreted to mean that you cannot observe matter without being implicated in the results of the observations. The notion of scientific objectivity continued to fall out of favor. Scholars of other disciplines—sociologists, historians, and economists—who had aspired to attain the objectivity that was thought to be scientific privilege found scientists disparaged.

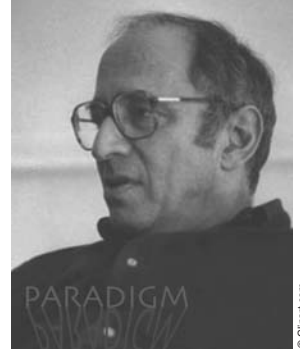
Kurt Gödel

In this world of uncertainty, people clung fast to the belief that there were still some things that you could rely upon. There was logic, an infallible guide to truth. There was still the world of maths and numbers. Then, in the early 1930s, Austrian mathematician Kurt Gödel proposed the theorem that bears his name. He was a passionate believer in the reality of numbers. He had as

much faith in them as Pythagoras or Plato had had in his day. He despised his colleagues in mathematics who viewed maths as intuitionist, conventional, and spontaneous. Nevertheless, the effect of his work was to subvert other people's faith in the reality of numbers because he explored the longstanding claim that maths and logic were essentially similar systems. He demonstrated that they are not mutually commensurable systems. His investigations went further to reveal that in any closed system, whether mathematical or logical, you will always arrive at self-contradictory results. The popular response to Gödel's theorem was that even logic and maths were unreliable methods for finding truth.

Thomas Kuhn

The erosion of popular confidence in science climaxed in the 1960s with the work of Thomas Kuhn, a philosopher and historian of science. In perhaps one of the most influential and misunderstood works ever written about the history of science, he argued that major changes in the scientific consensus arise not because of the availability of new data, but because of what he called "paradigm shifts"—changes in ways scientists see the world. That idea was popularly interpreted as an indictment of the reliability and objectivity of science. Most of Kuhn's readers interpreted him to mean that science was a matter of convention and that the message of scientists could change with their agendas, or prevailing political and social programs.



Thomas S. Kuhn
(1922–1996)

Chaos Theory

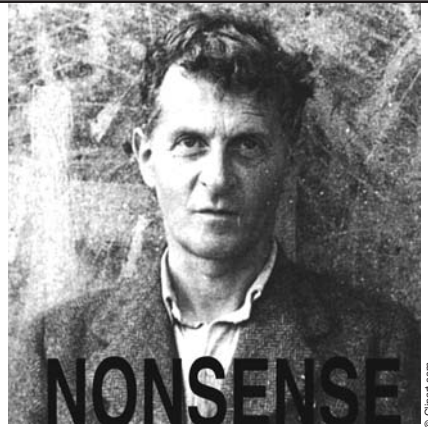
Even more problematic, the way ordinary people felt about science was complicated further by the rise of chaos theory, which was in effect deeply subversive of traditional confidence in scientific approaches to knowledge. Chaos theory arose in the context of meteorology, which was a science in which the difficulty of predicting outcomes is obviously particularly acute. Chaos theory explained the unpredictability of so many scientific sequences by pointing out the enormous disparity between small causes and big effects. Some effects could issue from causes so small and so remote from the effects that the links were effectively untraceable. It wasn't saying that the universe is disconnected and that there are no chains of causation, but in effect, it was saying that it's as if the universe was like that, because ultimately we can't be certain that we can identify the links.

Ludwig Wittgenstein

These challenges to conventional understandings of science and truth that had arisen from scientists themselves fed a growing disillusionment. Another source of this disillusionment arose from developments in philosophy. In 1953, the Austrian philosopher Ludwig Wittgenstein published his *Philosophical Investigations*, which was based on lectures. He provided many questions, and the answers he gives to some of them are profoundly disturbing. Wittgenstein systematizes many of the problems with the relationship

between language and reality that had troubled people since the work of Saussure during the early years of the century. The effect of Wittgenstein's work was to open a chasm between words and the realities they strive to signify. He frequently used lecturers' tricks to shock his audience into attentiveness. He says, "I'm going to convince you of the superiority of one kind of nonsense over another." When you say things like that to an audience, you implant in their minds the suspicion that there isn't really anything to choose between one claim to truth and another. You're encouraging them to respond with equal skepticism to both.

So the gap between language and meaning, between words and reality, continued to grow wider as the century moved on.



Ludwig Wittgenstein
(1889–1951)

The Resurgence of Existentialism

The other major development in philosophy after World War II was the extraordinary rise to prominence of the previously dormant philosophy of "existentialism." European philosophers were trying to cope with the failure of nineteenth-century ideas such as Marxism and capitalism. Both had led to oppressive societies, economic failures, and the terrible conflicts of World War II. The philosopher Martin Heidegger thought it was key to escape from what he called "alienation." Economic rivalries and short-sighted materialism had shivered society into fragments. Individuals felt dissatisfied and unrooted. Heidegger's strategy for coping with that was to say, let's accept our existence between birth and death as the only immutable thing about it. Approach life as a project of self-realization; who we are changes as the project of our lives unfolds. This was a way of relating to the world that appealed to intellectuals. It meant that you could retreat into the security of self-contemplation in revulsion from an imperfect world.

But Heidegger was tainted by collaboration with the Nazis. And in 1945 in France, Jean-Paul Sartre reformulated existentialism as a new creed for the postwar era. "Man," he said, "is only a situation, nothing else but what he makes of himself, the being who hurls himself towards a future and who is conscious of imagining himself as being in the future." In other words, there's no determinism. Man is free; man is freedom. According to Sartre, there's no justifiable ethic except the acknowledgment of the rightness of this idea.

For people unaffected by existentialism, surely the most worrying feature of their lives in the period of the 1950s and 1960s was the fear of nuclear destruction. But that was only one part of a much wider dissatisfaction with the results of science. In spite of the wonderful achievements of medical science, science on the whole had turned out to be absolutely brilliant at destruction, at the creation of terrible technologies for ruining environments and destroying lives.



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Disillusionment with science is one of the great conspicuous features of the late twentieth century. But it is paralleled by disillusionment with politics. Just as science and the Enlightenment in the nineteenth century promised a great future, so too did the utopian political systems. That dream proved illusory as well. In the late twentieth century, people recoiled and retreated from planning, which seemed to have produced suicidal utopias—societies so perfectly planned that people couldn't stand living in them. It wasn't only traditional utopian projects that proved disappointing—the communists and the Nazis had attempted to create utopians of a kind, and the results of their visions were diabolical. Even the counterutopia of the revolutionaries of

1968, who had risen up against overplanned societies in the pursuit of an existential program of individual liberation, eventually failed.

Resurgence of Conservative Politics

After the failures of politics, after the disillusionment of science, what was left for people to turn to in the effort to construct an intelligible, habitable, mental universe? In the late twentieth century, from the 1970s onwards, evidence is quite strong. Two approaches became extremely appealing. The first was conservative politics and the second was religious revival. In politics, the trend was for abandoning the illusions of planning and supposedly returning to a world of small government. In practice, governments got bigger, but society did get less regulated. Statesmen returned to the doctrines of *laissez-faire* in an effort to develop some of the social benefits that planning had failed to deliver by way of boosting prosperity. At the same time, social order became fashionable again. The political philosophy of F.A. Hayek became the universally respected prescription for society. Hayek's genius was to make freedom and order seem not just compatible but natural companions. He proposed that the state is a spontaneous growth of history and doesn't need to be contrived and imposed upon people.

Religious Revival

For much of the twentieth century, conventional wisdom said that religion was doomed, that people would be bought out of faith by material prosperity, scientific explanations of the cosmos, and evermore sophisticated educational institutions. In fact, the reverse happened; people were driven back to religion by their disillusionment with everything else. From the 1960s onwards, church attendance began to recover in the United States. Religious revival exploded even more dynamically in Africa and Asia. The only part of the world that hadn't experienced religious revival on a large scale by the end of

the twentieth century was Europe, but even there evidence shows something similar beginning to happen.

Religious Fundamentalisms

Amongst the surprising features of this religious revival were, first of all, how strong within it traditional religions were. Secondly, and even more conspicuously, was how strong within it new kinds of personal religions, cults, and sects were. But most conspicuous, surprising, and impactful of all was the strength within religious revival of religious fundamentalism. It's a common misconception that religious fundamentalism is something that comes from deep in the past. It doesn't—it's one of the new ideas of the early twentieth century that sprang into being when so much new thinking in so many areas of life was unleashed. It started when Princeton University theologians in the early twentieth century tried to make Christianity scientific by making it verifiable and dependent on biblical texts. So people could turn to the Bible and see clearly whether a theological proposition was valid or not much as you could validate a scientific hypothesis by appealing to the results of experiment.

What started as an academic conceit in the last years of the century became a movement with tremendous global power, with millions of adherents, both in a Christian context and in a Muslim context. Christian and Muslim fundamentalisms have exploded together, with consequences for the world that perhaps have only just begun to be felt, and which we can only contemplate with apprehension.

The Future?

Is this the future of the world? Political conservatism, religious revivalism, growing fundamentalism—is that where the threat to our future stability is going to come from? Well, there is another future that offers more hope and the prospect of long-term security. One of the things that's happened while all these changes have been going on has been the interpenetration of global cultures. Vast migrations have transferred whole populations into unfamiliar environments, fostering enormous cultural exchanges. Our world has become a multicultural society. Pluralism is the dominant feature of today's world and is the idea that holds the key to preserving world peace in the future.

Pluralism

The essence of this idea was expressed by its greatest proponent, Sir Isaiah Berlin. His argument was that different people pursue different values, but all of us are capable of imagining what it would be like to pursue values other than our own. We can therefore appreciate why other people make choices of values different from ours. Within the limits set by our understanding of what it means to be human, we can accept and even embrace conflicts of values. That's what makes human understanding in today's world possible. Paradoxically, in today's world, pluralism is the one thing that we all have in common.

FOR GREATER UNDERSTANDING



Questions

1. Why did people lose confidence in science in the twentieth century?
2. Can you explain the revival of religion and conservatism in the twentieth century?

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2. *The Window: Philosophy on the Internet* from Trinity College (Hartford, CT) features a short but informative page on Ludwig Wittgenstein with links to other related philosophers and sources — <http://www.trincoll.edu/depts/phil/philo/phils/wittgenstein.html>
3. *Sartre Online* provides details of the life and works of Jean-Paul Sartre — www.geocities.com/sartresite
4. The University of Oxford Bodleian Library is the repository of the papers of Sir Isaiah Berlin — www.bodleian.ox.ac.uk/dept/scwmss/modpol/berlin

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