

THE TWO GREATEST IDEAS

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December 20, 2020
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CHAPTER ONE

The Two Greatest Ideas: An Overview of the Narrative

“The eternal mystery of the world is its comprehensibility.”

ALBERT EINSTEIN¹

THERE HAVE BEEN two ideas in human history that underlie a vast number of cultural innovations in human civilization. These ideas are so simple, it is easy to overlook their tremendous power, and it is easy to forget that we did not always have them. One is the idea that the human mind can grasp the universe; the other is the idea that the human mind can grasp itself. I am going to tell a story about these two ideas and how their relationship changed from the dominance of the first to the dominance of the second. The ideas do not conflict and many societies have adopted them harmoniously, but in Western history they took the form of a clash between the idea that we grasp the world before the mind and the idea that we grasp the mind before the world. That clash has left us with intellectual confusion and

The Word “Universe”

The word “universe” comes from the old French *univers* (12th cent.) and the earlier Latin *universum*, which means “all together, all in one, the whole of existing things.” But it is more commonly used to mean “the whole of physical reality,” or everything that came out of the Big Bang. This ambiguity makes it tempting for people to identify all of reality with all of physical reality, and Carl Sagan has announced: “The cosmos is all that is, or ever was or ever will be” (Sagan et al. 1980). But the issue of whether everything that exists is the same as everything physical is clearly not something that can be decided by the meaning of a word. In this book I am using “universe” to mean all existing things, whether physical or nonphysical. Sometimes I use the word “world” to mean the same thing.

cultural discord. Looking back can help us look forward, and at the end of this book I will offer some reflections on the prospects for the ascendance of a third great idea and the unsolved problem of how to conceive of the world as a whole.

The first great idea might seem obvious because it is presupposed by so many of our broad cultural practices—religion, philosophy, natural science, mathematics. All these practices attempt to discover something both deep and universal—the numerical laws of the universe, its physical structure, the origin and future of the universe, and possibly our ultimate destiny. These practices require people to think of the universe as a unified whole rather than as a jumble of unrelated phenomena. But the thought that the world is a unity is not forced on us, and thousands of years of human progress did not rely on it. From earliest times, all the societies of which we have evidence

had the ability to work with objects and manipulate them. But such achievements as mining metals and fashioning them into tools, developing building techniques, and cultivating crops and raising animals do not require the thought that the world is one unified whole; much less do they require the thought that the human mind can grasp it. Probably any invention relies on the belief that there are regularities in nature, but it is not necessary to think that the human mind can grasp the world as a whole to control fire or to make a pot or to plant crops. The same point applies to the decorative arts and the ability to tell a story. In fact, people could tell stories about the gods without thinking that they could grasp the universe, so the first great idea was not necessary for ancient mythology, and religion does not necessarily include the idea of the universe as one.² But in the most dramatic leap in the evolution of human thought, people began to think that we can comprehend the world as a whole. We can see through the plenitude of phenomena in our experience to see the world as one thing. Writers have occasionally raised the curious question of why philosophy, mathematics, science, and most of the great world religions were all started at approximately the same time, in the first millennium BCE.³ I suggest that these achievements were all connected with the rise of the first great idea.

The first great idea might seem extravagant, but when I say that the first idea was an *idea*, I do not mean that it was necessarily a belief, although it probably is and has been a belief for many people. People can entertain an idea long before they believe it to be true, and even if they never believe it to be true. The first idea is the idea of a possibility—something the human mind possibly can do. For some people the idea functions as an aspiration or a hope rather than as a belief. For others it is clearly a belief, even a commitment. I will often treat the idea as if it is true because I believe it is true, but very

little of what I will say in this book hinges on its truth. The power of the idea does not depend upon its being true.

When I describe the first great idea as the idea that the human mind can grasp the universe, I am leaving open the issue of whether the mind is aware of itself as grasping while it is grasping (or thinks it is grasping) the world. Some philosophers have thought that whenever the mind is aware of anything, it is aware of the act of awareness, so an awareness of anything outside the mind is always accompanied by an awareness of the mind grasping what is outside of it. That implies that in some sense, however vague, the mind is always aware of itself. I will return to this issue, but it is significant that the *idea* that the mind can grasp the world is different from the idea that the mind can grasp itself. Both ideas come out of the same mind, but historically they have been associated with very different ways of thinking about the relation between the mind and the world, and different ways of conceptualizing the human person.

In Western history, philosophy is almost always traced to the sixth century BCE with three philosophers who lived in the Greek city of Miletus in present-day Turkey, and who were probably among the first human beings to get the idea of the world as a whole. The first philosopher on record is Thales, and I am sorry to say that for decades I did not appreciate the significance of his proposal that water is the foundation of the world. In my experience, students generally find Thales silly, but his idea that there is some primary substance out of which the entire world is composed was genius of the first order. He and his successors, Anaximander and Anaximenes, had the idea that all of reality is one thing, an idea that has guided human intellectual and material advancement ever since. Anaximander's proposal that the origin and the principle of all things is the "Boundless" or "Infinite" (*apeiron*) was

particularly impressive, not only for the content of the idea but for the fact that he attempted to demonstrate it by argument. Anaximander's urge to map reality extended to mapping the stars and drawing a map of the earth, making him one of the first astronomers and first geographers. When he mapped the stars and the earth and reasoned about the origin of the universe, he must have had the first great idea. He believed that everything that exists is connected in a structure, and since the structure can be mapped, the human mind can grasp it and communicate it to other minds.

Two very different pre-Socratic philosophers had the same idea. Parmenides lived in the Greek colony of Elea in what is now southern Italy around 500 BCE. What historians usually stress about Parmenides is that he was a pure monist. He argued that there is only one unchanging thing in existence, an extreme version of the first great idea. Parmenides is often contrasted with his contemporary Heraclitus from Ephesus, who taught that all things are in perpetual flux.⁴ Yet Heraclitus is the author of one of the strongest and most vivid expressions of the first great idea: "Listening not to me but to the *Logos*, it is wise to agree that all things are one."⁵

The Pythagoreans expanded the first great idea in a way that integrated virtually all domains of human thought. Since they believed that the structure of the universe is numerical, they were able to connect the study of number (mathematics) with the study of number in time (harmonics), with the study of number on a grand scale in space and time (astronomy), with the study of harmony in the human soul (ethics) and in the state (political thought). The governing laws of the universe are the laws of harmony. That produced a unitary vision of the entire material and nonmaterial universe, an accomplishment unsurpassed in human history.⁶ The idea that numbers are a deep feature of the universe spread throughout

the choice of a personal being, and partly that it included the idea that a human being can have a personal relationship with the Creator. The paramount expression of Jewish monotheism appears in Deuteronomy (6:4–5): “Hear, O Israel: The Lord our God, the Lord is one. Love the Lord your God with all your heart and with all your soul and with all your strength.”⁸ This is the definitive statement of Jewish identity, and it is especially remarkable because it expresses both a metaphysical claim about God and a claim about the Jewish people’s relationship to God. It is a version of the first great idea in which personhood is at the core.

The idea that the physical universe was created by the choice of a personal deity had some important implications. It meant that although the universe is comprehensible, it did not come into being out of necessity, and therefore it could not be comprehended by rational reflection alone. Since the features of the universe are contingent, they need to be discovered. The belief in the contingency of the world is one of the metaphysical presuppositions of modern science, and it has been argued that the ancient Jews set the stage for the eventual rise of science since they were unique among ancient peoples in thinking of the universe as contingent rather than necessary and as linear rather than cyclical.⁹

Monotheism was also connected with the idea that there are moral laws that apply to all human beings. Even before the Jews were clearly monotheistic, they had a covenant with God, who required of them that they obey his moral prescriptions, but at some point they began to see some of those prescriptions as universal. There are hints of this idea as far back as the early eighth century BCE at the beginning of the book of Amos, where monotheism is connected with a moral law that is not tied to a particular culture. Amos declares that not only the Israelites but also the inhabitants of neighboring

kingdoms will be judged by God for their evil acts. The Israelite neighbors could not use the excuse that their behavior was endorsed by their local gods. That was a significant move in the development of the belief that there are moral prescriptions that cross the boundaries of individual societies, and the logic of that belief eventually led to the view that there are universal moral laws.

An even more interesting extension of the first great idea appears a century later in the book of Jeremiah, in which God invites people to see their faithlessness from his own perspective. In one passage God says: "How can I pardon you? Your children have forsaken me and sworn by those who are no gods. When I fed them to the full, they committed adultery and trooped to the houses of prostitutes" (Jer. 5:7).¹⁰ Imagine what it does to an intelligent creature to think that there is a single personal Creator with whom they have a relationship, and now they are invited to see themselves from his point of view! The awareness of having such a view must have been transforming to the Jews,¹¹ just as the Pythagoreans were transformed by the sense that their mind could grasp the mathematical structure of the universe. What I find so intriguing about verses like the ones in Jeremiah is not *what* God tells the Jews, but the fact that they thought that they could see into the mind of the being who sees all things.

The incipient idea of a natural law that we see in many ancient peoples, and especially in the Stoics, was developed many centuries later by Aquinas into the idea that there is a single Eternal Law of God that is expressed in the created world in both a universal moral law and a universal physical law. The idea of a universal moral law is a condition for the modern idea of universal human rights, and the idea of a universal physical law is a condition for the development of modern science.¹² So in Western history we see a connected

move from early physics and metaphysics and mathematics to ethics, and then eventually to modern natural science and international law, all of which have roots in the first great idea.

But the form that the first great idea took in the West faltered. After more than two thousand years of dominance, the first great idea declined in importance and the second great idea overtook it. The pivotal period in the confrontation of the two great ideas began in the Renaissance in art and literature, and the seventeenth century in philosophy and science.¹³ And here my story takes a turn.

The second great idea, that the human mind is capable of grasping itself, probably arose at about the same time as the first. Of course, people were aware of their minds long before that, but I am referring to the rise of the *idea* that the human mind can grasp itself. For millennia, the second idea was secondary to the first. That does not mean that people did not reflect on their minds. In fact, in both the East and the West there were highly developed practices of prayer and meditation that focused on the mind, but the purpose of these practices was usually the desire to grasp something else—God or Brahman or the Tao or the One. The individual mind was not thought to be important in itself. What human beings thought of their own minds derived from their idea of the place of the mind in the totality of reality. Since human minds are a component of the world as a whole, the first great idea that the human mind can grasp the world included the second great idea that the human mind can grasp itself. In the West that meant there was a distinct order of knowing. Human beings know themselves primarily through knowing the world. We grasp the world first, and because we can grasp the world, we can grasp ourselves. One's own mind is not transparent to oneself, and it is not the primary object of awareness. The oft-repeated Delphic maxim "Know thyself" was not an invitation

to make introspection of one's mind primary, and it was certainly not an expression of the importance of the individuality of the mind. It would never have occurred to Socrates to replace the first great idea with the second. What Socrates taught us is that we have to find out our nature, and we find it out by following the Socratic method in application to the world, not by an examination of our inner conscious states.

When the first great idea dominated, the distinctiveness of consciousness was not an issue, and the distinctiveness of an individual consciousness was certainly not an issue, although Saint Augustine's brilliant sense of interiority might have been one of the exceptions.¹⁴ People probably noticed that there is something different about grasping one's own mind than grasping minds in general, but there was little or no attention to the idea that the mind's grasp of itself differs *in kind* from the mind's grasp of the universe, even that part of the universe that contains minds. When a human mind grasps itself, it grasps something that is unique, but I do not see any indication that the uniqueness of individual consciousness was treated with any more importance than the uniqueness of the human body for most of human history. It seems to me that love is always directed towards the uniqueness of a person, and so personal uniqueness would have been experienced, but love is not part of human thought.¹⁵ In any case, the idea of the individuality of consciousness did not change anything in the way philosophers thought of the place of the human being in the universe. Nor did it change the practice of religion. Nor did it change the practice of morality. In Christianity, human personality became more interesting with the doctrine of the Incarnation, which directly connected human persons with the Godhead, and we see the importance of the human individual in Gospel passages in which Jesus says that God knows even the number of hairs on your head (Luke 12:7;

Matt. 10:30), and the parable in which God is compared to a shepherd who will search for a single lost sheep (Luke 15:4-7). But the description of the mind of Jesus in the Gospels is meager in its particulars and is focused more on his teaching of truths that reveal what human beings need to learn about themselves, not the unique personality of the most important person in Christianity. There are roots of the idea of subjectivity in early Christianity, but Christianity never attempted to make the second idea dominate the first.

It is commonplace to observe that the early modern period was important, and I dislike repeating something commonplace, but I am convinced that the second most dramatic event in the history of human thought really did happen around the seventeenth century in Europe. The idea that the human mind can grasp itself took on a degree of importance that separated it from the idea that the human mind can grasp the universe. Starting with Descartes or thereabouts, the second great idea began to supersede the first.

There are a couple of things to note about this historic change. First, the second idea would not have risen to such importance if the first idea had not faltered. The unity of the study of nature and human destiny and morality started to fall apart. Descartes would not have made the second idea the starting point of an entire method of philosophy if he had been satisfied with the first. He says that explicitly.¹⁶ The Reformation of the sixteenth century had broken the unified authority of the Christian religion in expressing the version of the first great idea that virtually everyone accepted. Since morality had been connected with religious authority, the undermining of religious authority led to the undermining of the conception of morality as obedience to authority, the voice of God expressed in human institutions, preparing the way for a new foundation of morality in the individual. Aristotelian natural

The Big Shift

Era of the primacy of the first idea	Era of the primacy of the second idea
The mind is an open window to the world.	Contents of the mind “represent” the world.
The mind does not have a fixed edge.	The mind has a fixed boundary.
Perceptual theories are forms of direct realism.	Direct realism about perception abandoned.
Philosophy begins with metaphysics.	Epistemology becomes “first philosophy.”
Focus on persons as having a place in nature.	Focus on the self and its subjectivity.
Morality is living in harmony with the universe.	Morality is grounded in self-governance—autonomy.

idea dominated, semantics was what we now call internalist: a meaning is an item in the mind that corresponds to something in the world. When philosophers divided the individual mind from the rest of the world, the issue of how language connects each mind to the world and whether a language is the same for all users of the language became critical.¹⁸

There were other important shifts in philosophy. No longer did philosophy begin with metaphysics, the study of being *qua* being. That status went to epistemology, the theory of knowledge. The metaphysical study of human beings shifted from a focus on the *person*, a being defined by its place in the world, to a focus on the *self*, the bearer of individual subjective consciousness. The consequence was a dramatic shift from the idea of morality as living in harmony with the universe to the idea of morality as grounded in autonomy, or self-governance, and the ultimate bearer of authority became the self.

The dominance of the second great idea led to far more skepticism about the human ability to comprehend the universe than an approach that made the first idea basic.¹⁹ If you have to start with the contents of your own mind and then

try to figure out how to combine those contents in a way that allows you to infer what the universe outside your mind is like, you have a job that might be insurmountable at the first step.²⁰ And even if you can get beyond the skeptical threat, you will find it difficult in the extreme to construct a view of the world with anything like the comprehensiveness of the great religions or the great metaphysical systems of the past. Consequently, the dominance of the second idea had a deflating effect on traditional metaphysics and theology and any attempt at a grand worldview.²¹

The second idea did not destroy the first idea in all forms. One of the most important philosophical forms of the second great idea was the British empiricism of the eighteenth century—not the kind of empiricism of Aristotle where you look around you and investigate, but the only kind of empiricism possible when you have to construct the materials of the world out of your perceptual states. That made empirical science foundational. It also made it possible to treat the universe of mental states as a complete universe, so it is not surprising that the rise of the second great idea led to the empirical idealism of George Berkeley, in which all objects are in minds, and by a different path to the idealism of Hegel, in which the history of the world is the history of consciousness. The clash between realism and idealism became important once the second great idea rose to prominence. Prior to its rise, there was no idealism with which to contrast realism.

We see, then, that the dominance of the second idea was accompanied by and partly caused by the rise of modern science and its breathtaking success in improving human lives as well as advancing our knowledge of the physical world. In the minds of many, the combination of trust in science and lack of trust in the Christian worldview led to the idea that science is capable of giving us a theory of everything. That

reduced the first idea to the product of empirical science. But science did not transform human consciousness the way the first idea had done. Earlier I wrote that the first idea gave human beings a sense of importance in the universe. When it diminished, the beliefs that had given people meaning were gone, and what was left was the idea of scientific and technological progress. By the twentieth century, Max Weber famously declared that science undermines religion, not only theology, by revealing a reality devoid of meaning and value, bereft of the presence of God, and therefore “disenchanted.”²² Volumes have been written arguing that there is no conflict between science and religion, but some science triumphalists like Daniel Dennett embrace the disenchantment of the world that results from the dominance of the view that science gives us a theory of everything.²³ The disenchantment that comes from the reduction of the first idea to natural science can therefore be seen as a good thing, but it seems to leave modern people with no sense of what connects *them* to the universe, an objection expressed by Thomas Nagel (2009) in a frequently cited essay.²⁴ Nagel observes that not everyone has what he calls “the religious temperament,” and I would agree that not all people long for a view of the world as a whole in which their own lives play a significant role, but it is worth noticing the difference between those products of the exercise of the first great idea that are satisfying in this way and those that are not.²⁵

The rise of the second great idea has had many welcome consequences. When the mind reflects on itself, it is aware of directing itself in thought and action, so the rise of the second great idea led to the idea that self-governance is the primary bearer of authority over any individual person, whereas previously the mind looked outside itself for authority. The acceptance of self-governance is the greatest block to tyranny human civilization has ever produced, and the focus on the

value of the human being as an individual rather than as a member of a social group was critical for the recognition of individual human rights, one of the greatest achievements of the modern era.²⁶

Another important consequence of the second great idea is that we now value the uniqueness of each person's subjectivity, and that has had enormous implications for the way we treat individual differences. It has affected virtually every aspect of culture and social life. We enjoy people who are unlike other people. We appreciate human variations. We celebrate the differences between individual points of view and attempt to understand them. We recognize the value of persons whose differences make them less able to perform ordinary human functions than the norm. We would not have cared about that were it not for the power of the second great idea.

The first great idea never disappeared, and both of the two great ideas exist in the way we think about human beings. A human being is a person and a human being is a self, and there is an important difference between a person and a self. A person is a being in the world seen as a whole; a self is a being as seen from inside its own mind. A person has dignity because it possesses *rationality*, identified as the distinctive property of human beings and the ground of our value during the entire premodern era. In contrast, a self has dignity because of the value of its unique subjectivity, making autonomy in the sense of self-governance a political and moral ideal.²⁷ I believe that Kant should get credit for trying to give equal importance to both of the great ideas, and the two ideas confront each other in Kant's work—particularly, in his attempt to make autonomy both the value of an individual's self-direction and the universal value of rationality. But it seems to me that in Kant's work the second great idea is ultimately victorious. As much as he wanted to retain the first great idea, he thought that he had discovered that what we grasp when we think we grasp the

universe is not the universe in itself, but the universe as an object of possible experience. For many philosophers, that was the final nail in the coffin of the first great idea.

The discovery of subjectivity created a major problem in the history of both of the great ideas. First, it meant that people in the premodern period must have made a mistake when they thought that they had successfully grasped the world as a whole. They had not. Their idea of the whole of reality was missing subjectivity, and if subjectivity is real, it was missing something real. It is even possible that what it was missing was the most important part of reality. But in the centuries since the modern period began, people have been unable to integrate subjectivity into a conception of the entire universe. The discovery of subjectivity brought with it the dichotomy between the subjective world—the world of your unique conscious experience—and the objective world—the world without conscious experience. Combining them into a conception of the whole has proved to be a daunting task. A view of the whole based on the scientific description of the objective world is popular in many quarters, including much of professional philosophy, but so far it has been unsuccessful. Neither the era dominated by the first great idea nor the era dominated by the second has succeeded in forming a conception of the whole of reality.

During the twentieth century the second great idea started to fracture. One direction of attack appeared with the discovery of the subconscious by Freud and the subsequent emergence of the idea that the part of the mind that the mind can grasp is severely limited. Later in the century there arose the idea that the self is socially constructed and shaped by the outside world, and Foucault argued that the process by which the mind grasps itself is just as complex and problematic as the process by which the mind grasps the world.²⁸ The result is that both ideas are objects of skepticism, yet they both persist. Two decades into the twenty-first century, we are still



FIGURE 1. The Roman Pantheon. Mikhail Malykh, via Wikimedia Commons.



FIGURE 2. Frank Gehry's Guggenheim Museum, Bilbao, Spain. Steppschuh Photography.

enter the Pantheon may be unaware of the cosmic significance of these numbers for the Pythagoreans, but the preoccupation of the building with order and symmetry is obvious. Perhaps Hadrian's passion for mathematics explains the many Pythagorean features in his Pantheon, and while we do not have direct evidence of his intent, it is said that he kept a secret collection of Pythagorean teachings.* The Pantheon is a magnificent expression of one of the most abstract examples of the first great idea.

A striking contrast with the Pantheon, and a work of art that succeeds brilliantly in expressing the modern sense of subjectivity is Frank Gehry's Guggenheim Museum in Bilbao, Spain. Gehry's building is a mass of curving titanium forms that remind me of the scales of fish in an animated film. The shape of the museum is unlike anything recognizable, although it might be similar to a futuristic ship. It appears to shatter traditional forms in an anti-Pythagorean outburst and magically reassemble them. Still, flights of fancy are not enough to make a building. It had to stand up, and it required extensive technological innovation to handle the engineering and construction challenges that Gehry could not have managed before the era of advanced computer technology. Of course, the city of Bilbao and the Guggenheim Foundation did not say anything about the two great ideas, but they wanted something daring and they got it. The response from both the critics and the public when it opened in 1997 was ecstatic.

Gehry's Guggenheim Museum and the Roman Pantheon are a visual testament to the contrast between the two great

*See Joost-Gaugier (2006), chap. 10, "The Pythagoreanism of Hadrian's Pantheon," esp. 176–177.

ideas. Both buildings are architectural and engineering marvels that are among the most advanced of their respective ages. The Pantheon was built at the center of an empire and commissioned by the emperor. The Bilbao Guggenheim was built in a dilapidated Basque steel city looking for a way to renew itself. The dome of the Pantheon was originally gilded as befits the home of all the gods, and it was surrounded by magnificent buildings and an enormous open square. The Guggenheim shimmered in the midst of sooty, forgettable buildings on the edge of a dirty river. When I see the Pantheon, I want to enter it and sit and contemplate it. My reaction to the Guggenheim Museum is to walk around it and view it from every angle. The Roman Pantheon was designed for the Romans to honor the Olympians gods, with attention both to its interior and to its position in the grand city of Rome. The Bilbao Guggenheim is intended to be a museum to hold art, but the museum itself is much more interesting than the art it contains. It could just as well hold plants or books or nothing at all, and I think it would be fair to say that the museum was built for itself. Gehry could have built it anywhere. The museum catapulted Bilbao into the post-industrial age, which it did spectacularly by defying its surroundings and leading to their revitalization. Bilbao clearly wanted something that did *not* fit the landscape. The building owes nothing aesthetically to the past and not even to the present. It is a flight of one person's imagination.

CHAPTER TWO

The World Precedes the
Mind: The Primacy of
the First Great Idea

(FIRST MILLENNIUM BCE TO
THE RENAISSANCE)

The Two Great Ideas in a Narrative

Human beings are conscious, like many other animals, but there must have been a moment in our evolutionary history when we became conscious of being conscious. We became aware of our own awareness. It is natural to distinguish our awareness of our awareness from our awareness of the world, and babies are apparently able to make that distinction not long after birth.¹ The idea that we can grasp the whole world is a natural extension of the idea that we can grasp part of the world—our immediate surroundings—and the idea that we can grasp our whole mind is a natural extension of the idea that we can grasp part of our mind—the part that is aware at any given moment. The two great ideas are extensions of

natural powers of the mind that we exercise all the time. In ages of history more optimistic than our own, people had confidence that these two ideas expressed actual powers of the mind, but even when confidence in one or both powers diminished, the ideas survived as aspirations. In spite of millennia of cultural upheavals of every kind, the two great ideas have never disappeared.

I proposed in the first chapter that there have been two major revolutions in human intellectual history. One marked the rise of the first great idea, which gave us within a short period of time the origins of mathematics, metaphysics, science, religion, and moral theory, followed by an era dominated by the human passion to grasp the structure of the world. This era did not lack the desire to grasp the mind that grasps the world, but it was taken for granted that the primary object of our awareness is the world. The first revolution occurred in many parts of the world, but the West had a second revolution, which marked the ascendance of the second great idea and the belief that our primary object of awareness is our own minds. During that era the belief that we can grasp the whole of reality faded in social consciousness for at least two reasons: decline in trust in the authorities that had produced and preserved the medieval Christian version of the first great idea and, even more seriously, decline in trust in the power of the human mind to get very far beyond its own subjective perceptions. There remained the idea that the mind aims at grasping as much of the world as possible, but there was a striking shift in the answer to the question, What is the primary object of awareness—the world or the self?

What reason would there be to tell the story of human history this way? Can we learn anything from it? Historians of philosophy tell their story differently from art historians, and both differ from historians of religion or historians of

shorter the story and the longer the period of history a story encompasses, the more there are important things left out. What can we possibly hope to learn from a story when very different stories could be told instead, or no story at all?

I think it is significant that we always have stories about the past in mind when we reflect upon the future. We have personal stories; we have national stories. We have stories that highlight past injustices, or cultural triumphs. A story shapes our self-concept and our self-concept shapes the story, but we tell the story to others because we hope it can help our joint reflection upon the direction we take in the future. I believe that ideas have power in the world. Material conditions are not the only things that direct human history. My aim is to identify a common idea that runs like a thread through a long period of history, then breaks, but continues to exist in pieces. Another thread became dominant, but that also is becoming tattered, and when we look at the whole fabric, we see many frayed edges and disintegrating patterns. My story will miss many significant cultural moments, but an advantage of approaching human history from the abstract viewpoint I am adopting is that abstraction gives us a degree of emotional detachment that can make it easier to see our history through the eyes of others, and that can soften cultural controversies such as those we will discuss in chapter 4.

I believe that both of the two great ideas are universal, but I propose that thinking of Western history as a narrative of the switch from the dominance of the first idea to the dominance of the second can illuminate our understanding of the past and give us perspective on current problems. The two great ideas are compatible, but their dominant historical expressions conflicted. When the first great idea dominated, people thought that they grasped their mind through their grasp of the world; when the second great idea dominated, it was the

reverse. That makes it difficult to see how to put them together in a way that respects the power of both ideas in our history, but I propose that the way to begin is to look at that history with the aim of identifying what the change was and why it arose.

In this chapter we will look at the rise and development of the first great idea in the premodern period—in the mathematics, metaphysics and science, the arts and literature, and the moral thought of the era. The first great idea was sometimes a presupposition and sometimes a driving force. Sometimes it was conscious, but more often it was unconscious. The philosophy in an era is more likely than the art or the literature to make the idea conscious because that is what philosophers are supposed to do. We are supposed to make implicit ideas explicit so that we can see both hidden similarities and hidden differences between one person's cultural creations and those of another, and that is one way to help us understand each other. In the next chapter I will tell the story of the second great idea from the Renaissance through the twentieth century in the same way.

*The Origin of Mathematics,
Science, and Metaphysics*

Many decades ago, Karl Jaspers (1953) called the historical period from roughly 800 BCE to 200 BCE the deepest dividing line in human history. He named it “the Axial Age.” Before this period, language was invented, great technological innovations were made, and societies were formed with functioning governments. But, Jaspers argues, there was a transformation in human consciousness in the Axial period that determined human understanding of the self and the universe ever since. Independently in three regions of the world—China, India and Persia, and “the West” (Palestine and Greece), the great world

religions and philosophies began,⁷ but in spite of the obvious differences among early Hinduism, Buddhism, Jainism, Zoroastrianism, Taoism, Judaism, and Greek philosophy, they had something very interesting in common.⁸

What is new about this age, in all three areas of the world, is that man becomes conscious of Being as a whole, of himself and his limitations. . . . He asks radical questions. Face to face with the void he strives for liberation and redemption. By consciously recognizing his limits he sets himself the highest goals. He experiences absoluteness in the depth of selfhood and in the lucidity of transcendence. (2)

Jaspers claims that after the Axial Age, there were no more great spiritual innovations in the world.

If Jaspers is right, both the two great ideas burst into human consciousness at the same time in different parts of the world. Jaspers focuses on the rise of the great religions and philosophy, but there were revolutions in mathematics and science at the same time. We know that practical mathematics preexisted the Axial period since arithmetic, algebra, and geometry had been used in the Mesopotamian states from around 3000 BCE and by the Egyptians from 2000 BCE for commerce and to plot the stars and to create calendars. But in the sixth century BCE, the Pythagoreans turned mathematics into a theoretical discipline, and Euclid's systematization of geometry in the fourth century BCE is still standard textbook geometry. Even its twentieth-century non-Euclidean forms are a modification of Euclid. That suggests that we can interpret Jaspers's Axial Age as pivotal not only in the history of religion and philosophy but also in mathematics, and since mathematics was a powerful tool for the measurement and prediction of natural phenomena, the Axial Age was pivotal for astronomy and other sciences.

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