

DRAFT: PLEASE DO NOT QUOTE WITHOUT PERMISSION

NOTE: Some of the slides used in the presentation are found below at the end of the text.

Lecture 1

How to do things with texts. And why bother?

This series of lectures will focus on some aspects of the philosophy of Leibniz. In particular, I want to show how Leibniz came to his idealistic view of the world, the view that all there are in the world are monads, the view that the objects of our experience must be understood to be families of tiny minds, to use Bertrand Russell's colorful phrase. This is a very puzzling view of the world, and it is difficult for us, now, to understand how someone as smart as Leibniz was to have come to it. I would like to make Leibniz's view intelligible by showing how he came to hold it, by showing the philosophical issues that led him to this odd conception of the physical world. My approach in these lectures will be historical: I am primarily interested in what Leibniz thought, and why he thought it, how what we would consider his philosophical thought relates to other things that concerned him, most notably his natural philosophy, and how it relates to what others of his contemporaries were thinking about at the same time.

What I do might well be described as intellectual history. (I wouldn't use the term 'history of ideas' myself, but those outside the field might consider it a subtle distinction.) However, I was trained as a philosopher and I teach in a Department of Philosophy, and always have. Although I spend a great deal of time with colleagues who are professional historians, particularly historians of science, I do still consider myself a philosopher. I will assume that those of you who will come to these lectures with a primary interest in history of philosophy or intellectual history will understand what I am trying to do, and won't require any special pleading. But before digging into the history, I want to address a few words to the philosophers.

Why should we, as philosophers, be interested in the history of our subject? Why should we take these old texts seriously? Now, there are many reasons for wanting to do so. One is pedagogical: historical texts are excellent for use in the classroom, as a way of introducing students to what we now consider the main problems in philosophy, to standard arguments and positions, and they do so in a way that is often quite accessible, without having to give a lot of background or without entering into the dizzying complexity of distinctions and technical terminology that enter into current books and journal articles. But is there a genuine *philosophical* use for such old texts? Why should advanced students or practicing philosophers trouble themselves with the history of philosophy?

Jonathan Bennett, who has long been a vigorous advocate for the history of philosophy offers one kind of answer. Bennett proposes what he calls the "collegial approach" to the history of philosophy. On that approach, Bennett writes, "one studies the texts in the spirit of a colleague, and antagonist, a student, a teacher—aiming to learn as much philosophy as one can from studying them." Bennett continues, quoting Grice with approval: "I treat those who are great but dead as if they were great and living, as persons

who have something to say to us *now*.”¹ This, indeed, has been a main approach to history by philosophers past. Plato, Aristotle, and St. Thomas referred regularly to their predecessors, discussing their views, subjecting them to critique and keeping what was valuable. Modern philosophy was born with the rejection of the history of philosophy, and the status of the study of past philosophy has been problematic ever since. In his *Discourse on the Method*, Descartes began by rejecting what he learned in school in favor of what he could discover for himself through reason and experience. But the rejection of history didn’t last long. The history of philosophy was of particular importance to Kant, for example, who used history of philosophy, from Descartes to Hume, as a way of placing himself at the culmination of European thought. (In so doing, by the way, he created historical categories that still haunt the modern historian of philosophy, categories that we are still trying to escape.) Hegel made the history of philosophy even more central to his thought. And so it went, and in the view of some contemporary philosophers, so it continues. But the ways in which these philosophers used the history of philosophy were very much in the spirit of Bennett’s collegial approach: earlier figures were seen as sources of arguments and positions to challenge or from which to borrow.

Now, there is a bundle of practices that characterizes the kind of history that Bennett and other collegial historians practice: the tendency to substitute rational reconstructions of a philosopher’s views for the views themselves; the tendency to focus on an extremely narrow group of figures (Descartes, Spinoza, and Leibniz, Locke, Berkeley and Hume in my period); within that very narrow canon the tendency to focus on just a few works at the exclusion of others, those that best fit with our current conception of the subject of philosophy; the tendency to treat the philosophical positions as if they were those presented by contemporaries, and on and on and on. In the prospectus for the *Cambridge History of Seventeenth-Century Philosophy*, Michael Ayers and I wrote the following passage, which drew fire (from one of our own contributors, no less!) even before the volume was finished:

...[O]ur view of philosophy as a discipline has in large part been shaped by a standard account and critique, in many respects tendentious and oversimplified, of the various philosophical positions for which the great names of the early-modern period are the supposed spokesmen. Commentators in the analytic tradition in particular, writing very much out of their own philosophical interests and preconceptions, have often lost sight of the complex context in which seventeenth-century philosophy was written. In doing so, they have not only distorted its achievements but have denied themselves the tools necessary for the interpretation of the very words and sentences they continue to read and expound.

We ourselves were surely guilty of some exaggeration here; what we presented was a kind of cartoon version of the “analytic” history of philosophy as it existed at that time. Not all historians of philosophy were like that even in the period. Even so, the old history of philosophy was a useful demon to posit, even if it didn’t altogether fit the practice. And we wanted to do something rather different in the history of philosophy.

What characterizes this new attitude that my generation brought to the study of the history of philosophy was the more serious emphasis on the “history” in the history of

¹ See the Introduction to vol. 1 of Jonathan Francis Bennett, *Learning from Six Philosophers: Descartes, Spinoza, Leibniz, Locke, Berkeley, Hume*, 2 vols. (Oxford and New York: Oxford University Press, 2001). The quotations are from p. 1.

philosophy. But just as there is no single correct way of approaching the history of a period or a place or an event, there is no unique way of making the history of philosophy historical. In this way the new histories of philosophy in my domain constitute a grab-bag of different approaches which have in common only the idea that the history of philosophy should grapple with philosophy in a seriously historical way. Whatever exactly that mean.

One thing that it has meant is an attempt to avoid what many of us see as the characteristic features of the “collegial” approach. That means trying to capture the real complexity of the positions taken by a Descartes or a Locke, trying not to impose the simplified versions of their positions that have crept into the philosophical literature. It means reading their philosophical works in their proper context, intellectual, cultural, and even social. That means reading Descartes’ philosophical works, for example, in the context of his other writings in mathematics and natural philosophy, which in the earlier generation were thought to lie outside of philosophical interest. (I think here, for example, of Anthony Kenny’s important translation of Descartes’ letters. In the introduction to the volume he explained that he had omitted all of what he called “archaic science.”) It means reading not only the great names, but also some of the less well-known philosophical figures of the age, and figures whom we would not necessarily consider philosophical at all. It even involves understanding something of the social and political context of philosophy, how people were educated, what roles philosophy played in society, who the philosophers were and what their audience was, how they communicated with them and how their views were received. And perhaps most importantly, it means not assuming that their conception of philosophy was the same as ours, and that they were involved in the same intellectual project that we are when we do philosophy.

My own particular heresies in the history of philosophy derived from my acquaintance with the history of science. I was a graduate student at Harvard, enamored of Quine’s program for naturalizing everything. At the same time I was assisting in a course in which we were reading Descartes. Reading about Descartes, I learned of his importance for the history of science. This was particularly interesting to me, given my Quinean tendencies. If Descartes was both a philosopher and a scientist, then how did he turn up as the villain of Quine’s story, rather than the hero? This made me curious to read some of Descartes’ scientific writings, and try to figure out how they related to his more straightforwardly philosophical writings. More generally, I have been interested in connecting the history of philosophy to the history of science, and as the history of science went more in the direction of social and political context, I found myself drawn in that direction as well. But that’s just my own particular take on the subject. Other recent historians of philosophy have taken the subject in many other directions, linking the history of philosophy with theology, politics, history of the universities, exploring more deeply the wide diversity of views hiding behind such labels as “Cartesianism” or “atomism”.

Those of us who take this more rigorously historical approach to the history of philosophy were (and still are, I suppose) accused of neglecting the “philosophy” part, of being “mere” intellectual historians (or even antiquarians) as opposed to *real* philosophers. I admit it: I have real antiquarian tendencies. But, at the same time, I think

that approaching the history of philosophy in this broader and more historical way has some real philosophical payoffs. Let me argue for just one.

It is often taken for granted that the discipline of philosophy that we practice today is substantially the same as it was in past times. It is this assumption that underlies the way philosophers have generally used the history of philosophy as a source of arguments and problems for their current work. But a careful and genuinely historical study of early-modern philosophy gives us a rather different conception of the subject, something from which we as philosophers in the twenty-first century can learn.

I certainly do not mean to deny that there are individual questions that are common for earlier thinkers and for us. Take, for example, skepticism and the question of the grounds of knowledge. For someone writing in the late sixteenth or early seventeenth century, skepticism was a major challenge. But, I would claim, it was not the *same* challenge for them as it is for us. For someone writing in that period, Marin Mersenne, for example (to choose someone for whom skepticism was a central question), it was a response to the problem that after centuries of trying to sort out competing and radically different ways of understanding the world—Aristotelianism, Platonism, the Chemical Philosophy, Atomism—it still seemed as if there were no grounds for choosing one over another.² The problem of skepticism was a pressing problem, a challenge to the very intelligibility of the world. For us, it is quite different, I think. Whatever the philosophical skeptic decides, the world of science goes its merry way. Detached from the larger issues of understanding the world (and the larger cultural issues that that entailed), the problem of skepticism has become a philosophical problem in the modern sense.

Or consider the closely related problem of the validation of knowledge in Descartes. For us the epistemological problem, the problem of the nature of knowledge and its justification is a paradigmatic philosophical question. But it is important to note here that Descartes' conception of the problem is very different from the later philosophical conception of the problem. For Descartes, the problem of knowledge wasn't an abstract philosophical problem, a general concern about what we are justified in knowing. For Descartes it was closely connected with the Aristotelian physics that he wanted to reject, and the mechanist physics that he wanted to build. Descartes advanced the conception of knowledge that he wanted to defend and validate not for what we would think of as purely philosophical motives. His point was, at least in good part, to undermine the generally empiricist epistemological assumptions that lead toward Aristotelianism and to replace them with an epistemology of clear and distinct perception that will underlie a fundamentally Cartesian world of geometrical bodies in motion. The over-dependence on the senses leads us directly to an Aristotelian conception of the world, where bodies have innate tendencies to rise or fall, where some things are really hot and other things really cold, some really wet and others really dry. When we base our beliefs on clear and distinct perceptions, though, we discover that the essence of body is extension alone, and that the tendencies and sensory qualities that we tend to attribute to body are simply impositions of mind on matter. Descartes' point in validating clear and distinct perceptions wasn't to answer abstract and purely philosophical worries about

² See, e.g., Marin Mersenne, *La verité des sciences. Contre les septiques [sic] ou pyrrhoniens* (Paris: Chez Toussaint du Bray, 1625). That work is a dialogue between the Christian philosopher (a stand-in for Mersenne himself), the skeptic, and the alchemist.

skepticism and the possibility of knowledge, but to ground a particular conception of the physical world, what we would call a genuine scientific program.³

Or consider the problem of the freedom of the will, for us a paradigmatic metaphysical problem. For the seventeenth century, on the other hand, it was deeply connected with the problem of how to fit human beings into a developing mechanist conception of the physical world governed by deterministic laws of nature. Philosophers today generally take the physical world as fixed, and outside the domain of their interest and competence when they discuss problems such as freedom of the will. But in the early modern period, the world was at least as much at stake for the philosopher. To understand our place in the world, the philosopher had to come to an understanding both of us, and of the world. For Descartes, as for his Aristotelian teachers, the study of human beings, including their minds as well as their bodies, was a part of natural philosophy, physics. The problem he and his contemporaries faced was to come to a conception of the world that took made sense of the laws and principles that govern inanimate nature at the very same time as they made sense of the human beings that live in that world.⁴

In this way a careful and contextual study of the history of philosophy will show the way in which the very scope of the term ‘philosophy’ has changed between earlier times and our own. Even though in many cases one can find problems in earlier thinkers that are obviously coordinate to problems in contemporary philosophy, most often they are not found in the same intellectual and cultural context. It is not unimportant that the problems of knowledge and skepticism, mind and freedom were situated as part of a larger enterprise that included what we would call science and theology in the seventeenth century: this larger enterprise was the domain of philosophy.

I will not pretend that this antiquarian version of the history of philosophy is in any *direct* way of importance for contemporary philosophers or their students: it won't give them the keys to solving hard problems in metaphysics or epistemology or the philosophy of language. But the antiquarian study of the history of philosophy gives us something else. Part of being a good philosopher is being reflective about what exactly philosophy is, what kinds of questions it treats, what kind of an enterprise it is, how it relates to other intellectual—and even non-intellectual—enterprises. The philosopher who does not reflect on what he is doing is, in a sense, trapped in current practice. This may be satisfactory for what we might call normal philosophy, the ‘normal scientific’ phase of philosophical research, to use the Kuhnian terminology. When we are dealing with philosophical problems within a single and well-defined paradigm, then we don't need to reflect on what exactly philosophy is. But as philosophers, we also need to think larger thoughts, we need a larger vision of what we are doing. It is this that the antiquarian can provide. It is ironic but true that it is the most history-bound historian of philosophy who can provide the philosopher with fresh views of the subject, and show the non-historical philosopher alternative ways of conceiving what philosophy is. Realizing how philosophical problems as well as the very concept of philosophy have

³ This reading of Descartes is elaborated in Daniel Garber, "*Semel in Vita: The Scientific Background to Descartes' Meditations*," in Daniel Garber, *Descartes Embodied: Reading Cartesian Philosophy through Cartesian Science* (Cambridge: Cambridge University Press, 2001), pp. 221-56.

⁴ On this question, see Daniel Garber, "Mind, Body, and the Laws of Nature in Descartes and Leibniz," in *Descartes Embodied*, pp. 133-67.

changed over the years can help us free ourselves from the tyranny of the present, essentialism with respect to the notion of philosophy itself. It can also allow us to see some of the philosophical problems that grip us in new ways.

My theme in these lectures will be the development of Leibniz's philosophy, in particular his views on substance and body. (I will use the term 'philosophy' loosely here; in a little bit I want to come back to this issue and talk about what that means for Leibniz and his contemporaries.) In particular, I will be especially interested in how Leibniz became an idealist. Talking about Leibniz as an idealist is not entirely unproblematic; the term itself did not enter the philosophical vocabulary until after Leibniz's death. (One of the very earliest appearances of the word is in Baumgarten's *Metaphysica* (1739), where the idealist is characterized as "solos in hoc mundo spiritus admittens" "admitting only spirits in this world" (§ 402). Hans Poser claims to have found an earlier use in Wolff, shortly after Leibniz's death, in which he claims that Leibniz *wasn't* an idealist.) What I mean when I talk about Leibniz's idealism is the view that all there really exist in the world are entities that are understood on broad analogy with Cartesian minds. As Leibniz puts it in a letter he wrote to Burcher de Volder in 1704 (to which we will later return):

Indeed, considering the matter carefully, we must say that there is nothing in things but simple substances, and in them, perception and appetite. Moreover, matter and motion are not substances or things as much as they are the phenomena of perceivers, the reality of which is situated in the harmony of the perceivers with themselves (at different times) and with other perceivers. [L to DV 30 June 1704 G II 270; AG 181]⁵

The simple substances in question here are, of course, what Leibniz calls monads, and the claim is that all there is in the world, at root, are monads. There is a lot packed into this, to be sure. Unpacking this idea and showing its historical development in Leibniz's thought will be our main theme.

When I say that I'm interested in how Leibniz became an idealist in this sense, the implication is that he wasn't always so. This is, indeed, what I want to assert. In this respect the story I want to tell is rather different from the standard textbook account of Leibniz's philosophy. Traditionally, Leibniz has been taught largely from two texts, the *Discours de métaphysique* (1686) and the *Monadology* (1714). (Indeed, many journal articles on Leibniz's thought still focus on these texts.) These two texts are generally assumed to tell the same story, and that is a story centered around a world composed of monads:

1. THE MONAD, which we shall discuss here, is nothing but a simple substance that enters into composites--simple, that is, without parts.
2. And there must be simple substances, since there are composites; for the composite is nothing more than a collection, or aggregate, of simples.
3. But where there are no parts, neither extension, nor shape, nor divisibility is possible. These monads are the true atoms of nature and, in brief, the elements of things. ["Monadology," §§ 1-3]

⁵ 'G' is the Gerhard edition of Leibniz's philosophical writings; 'AG' is the Ariew and Garber translation (Hackett).

The assumption has generally been made that from the beginning of Leibniz's so-called "mature" period, starting in the mid-1680s, when Leibniz was in his late 30s and early 40s (and when he wrote the *Discours de métaphysique* and entered into his important correspondence with Antoine Arnauld) to the end of his life in 1716, his core doctrine remained largely unchanged, and that he remained a committed idealist. In the world of Leibniz scholarship, particularly in the English-speaking world, this picture has been called into question by a number of scholars in the past 20 years (though it is still very much a minority position). But the attacks have been largely piecemeal and unsystematic. The only way one can undermine the conventional wisdom and find the real Leibniz is by going back to the beginning of Leibniz's career, and understanding how he came to hold the views on monads that characterize his later writings. In this way, what I would like to do here is present a full and systematic alternative reading of Leibniz's thought.

This is something that simply could not be done even a generation ago, and was completely impossible in the years following Leibniz's death in 1716. At that crucial moment, when Leibniz's philosophical heritage was being defined, the reader who wanted to learn about Leibniz's philosophical thought had very little to go on. **[SLIDE BELOW ON WHAT WAS AVAILABLE IN EARLY 17C]** There was the *Theodicy* (1710) and a handful of papers that had been published during Leibniz's lifetime, including the "New System" (1695), the "Meditations on Knowledge, Truth and Ideas" (1684), the "Brief Demonstration" (1686), the "Specimen Dynamicum" (1695) and "On Nature Itself" (1698). Leibniz's letters with Clarke were published in 1717, the year after Leibniz's death, in an edition by Clarke. And then there was the "Monadology." That appeared in 1720 in German, and then in 1721 in Latin. A simple, dogmatic, and relatively brief summary of an area of Leibniz's thought, it quickly became a canonical text. Assumed to embody the heart of Leibniz's thought, the other texts were read through its lens by interpreters such as Christian Wolff and Alexander Baumgarten, who fashioned around it a Leibnizian philosophical system, in part to adopt, and in part to criticize. This system, as then discussed in the enormously influential writings of Kant, had great staying power, and as further texts were added to the canon by successive editors, they were interpreted in terms of the "Monadology."

As important as they have become for our current reading of Leibniz, it is somewhat surprising that the *Discours de métaphysique* (1686) and the important correspondence between Leibniz and Antoine Arnauld (1686-90) were first published only in 1846, in an edition by the German editor C.L. Grotefend. But they probably owe their current centrality to Bertrand Russell. For Russell, these texts, and especially the *Discourse* were central proof-texts for his logicist reading of Leibniz, claiming that Leibniz's view of the world derives not from abstract metaphysical arguments or from his dynamics but from his logic. Even though Russell sought to reorient our view of Leibniz in some respects, his view of a Leibnizian system centered around a world of monads was very much continuous with the grand traditions of earlier Leibniz interpretation.

And so it goes until our days. But now we are in a much better position to understand Leibniz's philosophical thought than earlier generations were. Many, many texts have been edited and published since the first readers of Leibniz's thought attempted to understand what he was up to. But most importantly, for more than a century, the Berlin Akademie der Wissenschaften (and its predecessors) have been working on a new edition of Leibniz's writings. The record is by no means yet complete; but it would be

irresponsible not to use what we have to try to put together a more historically accurate and nuanced account of Leibniz's philosophical development than the one that currently dominates the literature.

Over the course of these lectures, I shall argue that the centrality of the *Discours de métaphysique* and the *Monadology* in later interpretations is a matter of pure historical accident, and that when we understand their historical place in his thought, and the larger intellectual context that his numerous other philosophical writings give us, a very different philosopher will emerge. One of the things I hope to do in these lectures is introduce this unfamiliar and almost new philosopher to you, something closer to the real Leibniz, historically situated, and presented on the basis of a very wide selection from his texts, as opposed to the Leibniz of philosophical legend and lore. But the wealth of new texts that we now have at our disposal raises problems of its own. Leibniz never produced a definitive work in philosophy. (Again, I will return to what the term 'philosophy' means to Leibniz and his contemporaries.) The one (mature) philosophical book he published was the *Theodicy* (1710), an answer to some criticisms of Bayle. The *Nouveaux Essais* (1704), an answer to John Locke is an important source of Leibniz's views, but as a commentary on Locke's *Essay*, it isn't a systematic development of his own thought. As I mentioned earlier, Leibniz did publish a number of essays in learned journals during his lifetime, and these give us some clue as to what Leibniz thought was important enough to tell others about. But none of these is systematic and complete in the way in which Descartes' *Meditations* or Spinoza's *Ethics* are. But after these published works, we descend into the maelstrom. Leibniz was a pack-rat, and hardly threw away anything. (Herbert Breger, the head of the Leibniz archive in Hannover recently told me that their calculations show that it would take a reader fully twenty years, full time, just to read all of the manuscript remains that Leibniz left.) His manuscript remains thus constitute a tangle of drafts of published papers, papers written for publication that he never got around to publishing, papers written for publication that he abandoned, notes to himself that he never intended to publish, but which correspond to things which he did, all the way down to jottings and conjectures, unsuccessful attempts to work things out that he abandoned even before he finished writing them out. This makes it difficult to figure out what exactly Leibniz believed on any subject: the fact that he expressed some philosophical position in a piece of paper we now have doesn't necessarily mean that he believed it, even when he was writing it. Or that he continued to believe it for even a day or two after he wrote it. But it may. Which is to say, reading Leibniz is delicate business, and to put together a reading of his thought often means making some subtle judgments about how much weight to give to a particular text. My revisionist reading of Leibniz's thought will involve a revisionist reading of the significance of some of his texts. There is always the danger, of course, that such a reading will come out looking arbitrary. I will do my best to guard against that.

The criterion of success will be the coherence of the story that I tell. Yes, I will be telling a story. History of philosophy is rarely thought of in terms of narrative history, but that is what it is, and should be. We are dealing with a smart person, whose views develop and change over time, and not a Platonic idea, the Leibnizian Philosophy, all in caps, which exists outside of time. What I want to do is tell the story of how Leibniz started, what considerations mattered to him, and how they caused his philosophy to grow and change, and ultimately arrive where it did. Indeed, even this is something of an

idealization. People's lives are not like novels, with a neat and tidy ending. I shall argue, in the end, that Leibniz's philosophy doesn't finish with the monadology, but that even while he wrote that, he was already contemplating the next stage of his philosophy, a journey to another destination which his death prevented him from reaching.

Now, with all of these preliminaries out of the way, I would like to begin talking about some history. I will begin with some general background to the philosophical project in the seventeenth century before turning to some more particular background on Leibniz himself.

Where I want to begin is with the question of what philosophy means in the earlier seventeenth century. (This my look *very* general indeed, but, I promise, it is directly relevant for understanding what Leibniz is about.)

I have already said something about what philosophy meant to the seventeenth century in my earlier comments. I suggested that there was not a radical distinction between what we call philosophy and what we call science: questions that we call philosophical were intimately connected with questions that we would consider scientific. I cannot emphasize that enough: when dealing with philosophy in the seventeenth century, we must understand that what we think of as philosophical questions were deeply interconnected with questions about the nature of the physical world, the laws of nature, the explanation of phenomena in physics, astronomy, optics, biology, and mathematics that we now take to be the domain of the special sciences. This is not to say that there were no distinctions at all. In the typical school course in philosophy, for example, two or three years of a student's academic life, one did distinguish between the units covering logic, ethics, metaphysics and natural philosophy or physics (the two terms were synonymous). **[SLIDE: EUSTACHIUS title page]** But I would emphasize that natural philosophy was centrally part of the philosophical curriculum, and included, in addition to general discussions of the nature of body, space, and causality, very specific discussions of cosmology, the elements, mixed bodies, minerals, and living things, including plants, animals, and the human body. **[SLIDE: Eustachius, outline of Nat. Phil.]** Indeed, the question of the soul as the principle of life was quite centrally a part of the curriculum in natural philosophy. There was a distinction between natural philosophy proper and the mathematical sciences, such as mechanics, optics, astronomy and music. **[SLIDES: Galtruche, Keckerman]** Mathematics in this broad sense was also generally taught, though not part of the philosophy curriculum. Not everyone had the breadth that Leibniz had, who, in his way was an important contributor to a number of these areas of inquiry. But even so, the connections were there. In that respect, I would argue, one cannot really talk about *either* science *or* philosophy in our senses of the terms in this period; the disciplinary boundaries familiar to us were yet to be drawn. Also important were the connections between philosophy and theology. This is, perhaps, less surprising. In an age when religious questions were taken very seriously indeed, and with a figure, like Leibniz, for whom religion and religious politics were central, it should not surprise us that questions such as that of the intelligibility of transubstantiation on one or another physical theory should be questions of interest to the philosopher. When discussing these questions in Leibniz we will thus have to cross boundaries we now take for granted. But rather than thinking of ourselves as crossing boundaries, I would rather that we tried to

reorient ourselves to the intellectual geography as Leibniz saw it, and try to see the connections between different questions that he saw.

Natural philosophy (or, as it was also known, physics) a radical transformation in the seventeenth century. In the beginning of the century, every student learned physics from Aristotelian textbooks; by the end the world looked quite different.

For the Aristotelian physics taught in the schools, the basic explanatory principles were matter and form. Together, matter and form were taken to compose body. Matter is what remained constant in change, while form is what changed when a body changed its properties; accidental form explained changes in accidents (from brown to yellow hair, from hot to cold), while substantial form explained changes in substance, from air to water, or from frog to prince. And so, for the Aristotelian physicist, the characteristic properties of bodies were explained in terms of these forms, thought of as innate tendencies bodies have to behave in one way or another; stones were thus thought to fall, and fire to rise, fire to heat and water to cool by virtue of the forms that the bodies in question have.⁶

There were a number of challenges to orthodoxy that came from a number of different directions, including from neo-Platonic sources, from alchemy, from scepticism, from atomism. By mid-century, though, one emerged as especially prominent. Having its roots in the mathematical science of Galileo, Gassendi's atomism, and Descartes' program for the reform of the sciences (and its home outside the universities), it was dubbed by Robert Boyle as the new corpuscular or mechanical philosophy.⁷ According to the new mechanical philosophy, as Boyle canonized it in his influential *Origin of Forms and Qualities* (1666) [SLIDE of title page], the only explanatory principles in physics were size, shape, and motion. And so, it was held, the properties bodies have are to be explained not in terms of form, accidental or substantial, but in terms of the broadly geometrical properties of the tiny particles that make up larger bodies, in terms of the motion of tiny corpuscles of different sizes and shapes, whose motion changed through collision alone.⁸ By the time Leibniz was a young man, the mechanical philosophy,

⁶ For representative developments of the foundations of Aristotelian natural philosophy, see, e.g., St. Thomas Aquinas' *De principiis naturae*, translated in *Selected Writings of St. Thomas Aquinas*, ed. and trans. R.P. Goodwin (Indianapolis, IN: Bobbs-Merrill, 1965); part III of Eustachius a Sancto Paulo's *Summa Philosophiae Quadripartita*, a popular textbook originally published in 1609, but often reprinted later; and Scipion Dupleix, *La physique*, originally published in 1603, also reprinted later, and now available in an edition edited by Roger Ariew, based on the 1640 edition (Paris: Fayard, 1990). For modern accounts, see, e.g., Edward Grant, *Physical Science in the Middle Ages* (New York: John Wiley and Sons, 1971) and David C. Lindberg, ed., *Science in the Middle Ages* (Chicago: University of Chicago Press, 1978).

⁷ Note that Henry More used the term earlier, though he meant it as a dismissal of the program. Also, it wasn't entirely clear that it was meant to name the program, as much as to describe it. Check with Gabbey for reference.

⁸ This new billiard-ball world was the work of many in the century, including Galileo, Descartes, Hobbes, Huygens, Gassendi, and others. For some it was linked to the doctrines of the ancient atomists, with their unsplitable atoms swimming in a void, while others saw infinitely divisible material substance swimming in a plenum; for some it was linked with the framing of precise mathematical laws, while others were content with more general and less precise descriptions of the behavior of bodies; for some it was experimental, while for others it was largely a priori. There was also profound disagreement about just how new this new mechanical philosophy really was. While some adherents represent it as quite revolutionary,

particularly in its Cartesian form, represented the progressive orthodoxy with which every serious thinker had to deal. And Leibniz, from his earliest years, thought of himself as a serious thinker. This is the background against which we must read Leibniz's thought.

At this point we can turn to Leibniz himself. **[SLIDE: Chronology]** Gottfried Wilhelm Leibniz was born on July 1, 1646, in Leipzig. [Note: Descartes died in 1650, Galileo in 1642] Though Leibniz started school when he was seven, more important than his formal education in those years was his reading. He taught himself Latin at an early age, and was admitted into his late father's extensive library, where he read widely. At age fifteen, Leibniz entered the University, first the University of Leipzig (1661-1666), and then the University of Altdorf (1666-1667), graduating with degrees in law and in philosophy. The education he received there was conservative, a mixture of traditional Aristotelian school philosophy and Renaissance humanism. Though he was invited to join the faculty at Altdorf, he chose instead to enter the service of the Elector of Mainz, where he stayed until he was sent to Paris in the spring of 1672 on diplomatic business.

While he had done significant work in a number of areas before going to Paris, including law, theology, mathematics, and physics, the trip was crucial to Leibniz's intellectual development. Though he had taken an interest in the moderns while in Germany (Hobbes was particularly influential on his early thought), it was only after he reached Paris that Leibniz was able to enter the mainstream of European thought in the period. Leibniz made copious references to the moderns in his earlier writings, but, as he admitted later, it was only in Paris that he actually read them with care. There he came to know the important mathematician and physicist Christiaan Huygens, who introduced him to new currents of thought, which Leibniz absorbed quickly. In those years, Leibniz laid the foundations of his calculus, his later physics, and his philosophy. While there are no publications from these years in Paris, many unpublished notes survive, important for understanding the emergence of his mature thought.

Leibniz returned to Germany in December 1676, passing through Holland, where he discussed philosophy with the reclusive Spinoza. It is then that he first entered the service of the House of Hanover. He served under Duke Johann Friedrich until his death in 1679, under Duke Ernst August from 1680 to 1698, and then, finally under the Elector Georg Ludwig. Except for his travels, he remained at Hanover for the rest of his life. [Note: Newton's *Principia* in 1687]

While at Hanover Leibniz undertook a very wide variety of tasks. Leibniz served as a mining engineer (unsuccessfully supervising the draining of the silver mines in the Harz Mountains), as head librarian of a large collection of books, as a general advisor and a diplomat, and was particularly interested in finding ways for the Catholics and the

many, including Leibniz in some parts of his career, represent it as quite continuous with the old Aristotelian thought, consistent with either medieval Aristotelianism, or with what Aristotle himself originally intended, however much Aristotle's thought may have been distorted by later thinkers. For a survey of the mechanical philosophy, see E. J. Dijksterhuis, *The Mechanization of the World Picture* (Oxford: Oxford University Press, 1961), and R. S. Westfall, *The Construction of Modern Science: Mechanisms and Mechanics* (New York: Wiley, 1971). For 17th Century attempts to reconcile Aristotle and the new mechanical philosophy, with special reference to Leibniz, see especially Christia Mercer, "The Seventeenth-Century Debate Between the Moderns and the Aristotelians: Leibniz and the Philosophia Reformata," in I. Marchlewitz and A. Heinekamp (eds.), *Leibniz' Auseinandersetzung mit Vorgängern und Zeitgenossen* (Studia Leibniziana Supplementa, 27) (Stuttgart: Franz Steiner, 1990).

different sects of Protestants to reunite. Leibniz was also given the responsibility for writing a history of the House of Hanover. While he collected and published many previously unknown historical documents (a task which required extensive travel in Europe, something Leibniz didn't mind at all), and published a number of other historical writings, this project barely got off the ground. All that he seems to have completed was a geological history of the region of Lower Saxony, the *Protogaea*. While it proved to be an important work in the history of geology when it was finally published in 1749, it did not seem to please Leibniz's employers, who had hoped for a history of somewhat more recent times.

Through the rest of his life, Leibniz continued to explore the philosophical, scientific, and mathematical questions that interested him from his earliest years, as we shall see in greater detail in the lectures that follow.

When his employer Georg Ludwig went to London in 1714 to take the throne of Great Britain as King George I, Leibniz did not follow. He was out of favour for his failure to make progress on the history of the House of Hanover, as well as for his generally old-fashioned manner. Furthermore, it is likely that George feared his long-running dispute with Newton and the British intellectual establishment over the priority of the discovery of the calculus would cause difficulties. Whatever the reason, Leibniz remained in Hanover, where he died on November 14, 1716. Though celebrated in his life, and considered a universal genius for the breadth of his interests and activities, in death he was virtually ignored, buried in a small ceremony, and left in a grave that was to remain unmarked for many years. (Note that the dates I chose to give in the chronology are somewhat arbitrary; there is a lot more that could be added. But this gives at least some of the main landmarks.)

Leibniz's own intellectual development and temperament is nicely summarized in the following letter, which he wrote to Nicolas Remond, counselor to the Duc d'Orleans in Paris, in January 1714:

Besides always taking care to direct my study toward edification, I have tried to uncover and unite the truth buried and scattered under the opinions of all the different philosophical sects, and I believe I have added something of my own which takes a few steps forward. The circumstances under which my studies proceeded from my earliest youth have given me some facility in this. I discovered Aristotle as a lad, and even the Scholastics did not repel me; even now I do not regret this. After having finished the trivial schools, I fell upon the moderns, and I recall walking in a grove on the outskirts of Leipzig called the Rosental, at the age of fifteen, and deliberating whether to preserve substantial forms or not. Mechanism finally prevailed and led me to apply myself to mathematics. It is true I did not penetrate into its depths until after some conversations with Mr. Huygens in Paris. But when I looked for the ultimate reasons for mechanism, and even for the laws of motion, I was greatly surprised to see that they could not be found in mathematics but that I should have to return to metaphysics. This led me back to entelechies, and from the material to the formal, and at last brought me to understand after many corrections and forward steps in my thinking, that monads or simple substances are the only true substances and that material things are only phenomena, though well founded and well connected. I have found that most of the sects are right in a good part of what

they propose, but not so much in what they deny. ... I flatter myself to have penetrated into the harmony of these different realms and to have seen that both sides are right provided that they do not clash with each other; that everything in nature happens mechanically and at the same time metaphysically but that the source of mechanics is in metaphysics. It was not easy to uncover this mystery because there are few men who take the pains to combine both types of study.

[Leibniz to Remond, Jan. 10 1714]⁹

This is a late letter, from the very end of Leibniz's long life, and one would not be surprised to find inaccuracies, exaggerations, and, as often happened with Leibniz's autobiographical reminiscences, rhetorical elements that owe more to the position for which he is arguing than to any serious attempt to remember the past. It also gives us a rather narrow view of Leibniz's intellectual activities: there is little mention of mathematics, and no mention at all of his work in logic, linguistics, history, theology, law, or jurisprudence, not to mention his wide activities as a practical diplomat and engineer. But still, this gives us a pretty good idea of what Leibniz thought was important in one aspect of his complex intellectual personality. It is noteworthy here that his account of how he came to the monadology seems to go squarely through his natural philosophy; this is a point to which I shall return a number of times as we examine his thought.

There are a number of other things worth emphasizing here, though. Leibniz's openness to different philosophical positions is quite noteworthy. He presents himself as having tried a bit of everything, and as seeing the value in all. He begins by reminding his reader that he started by studying the schoolmen; indeed, he is even somewhat proud of his acquaintance with these texts. But he has also studied the moderns, which he also appreciates. In fact, he purports to seeing something of value in all the main opposing schools of thought. To this extent we might see Leibniz as an eclectic, building a philosophy out of elements taken from different places and times. Leibniz might thus be thought of as a kind post-modernist architect *avant la lettre*. But that isn't entirely fair. Though he obviously had an irenist streak, Leibniz also had a very definite program which he advanced and explained by telling Remond exactly how he came to adopt it. The implicit message is that he, Leibniz, over the course of his long career, had considered carefully the claims of all the opposing schools, and had not rejected them precipitously, but proceeding carefully, taking what each has to offer, had been led step by step to his own rather surprising and original view. Leibniz here tells Remond the story about his youthful studies in traditional school philosophy, his dramatic conversion to the mechanical philosophy at the age of fifteen, while walking in the woods. And then he tells us about the slow path, "after many corrections and forward steps," from mathematics and matter, through metaphysics and forms, arriving eventually at the monads that we all know and love. This is the path that I want to trace in the lectures that follow.

NOTES:

⁹ GP III 606 (L 654-5). As Leibniz uses the term, 'entelechy' is virtually identical with form.

- (1) I will be available for discussion on Wednesdays of the weeks that I lecture, 11-12 in the Ryle Room.
- (2) No reading is necessary to follow the lectures, as long as you are prepared to believe the account that I am giving you of the texts. But for those who want an independent view, the most important text over the next few lectures will probably be the correspondence with Arnauld and, to a lesser extent, the Discourse on Metaphysics. See me for more details and guidance.

Leibniz's Main Published Philosophical Writings (ca. early 1720s)

- “Meditations on Knowledge, Truth and Ideas” (1684)
- “Brief Demonstration...” (1686)
- “New System” (1695)
- “Specimen Dynamicum” (1695)
- “On Nature Itself” (1698)
- *Theodicy* (1710)
- Correspondence with Clarke (Posthumous: 1717)
- “Monadology” (Posthumous: 1720 (German); 1721 (Latin))

S. U. M. M. A. *Am. d. 640*

PHILOSOPHIÆ
QUADRIPARTITA,
De rebus Dialecticis, Ethicis, Phy-
sicis, & Metaphysicis;

Autore

FR. EUSTACHIO
A. S. Paulo, ex Congregatione
Fuliensi, Ordinis Cister-
ciensis :

Infnitis mendis repurgata.



CANTABRIGIÆ,

Ex officina ROGERI DANIELIS almæ Aca-
demie Typographi c. l. d. c. XLVIII.

prb 34

Questiones proemiales De ipsa Naturali philosophia, Qu.

Summa Philosophicæ tertia pars est Physica: Cujus tres sunt partes:

Prima, de Corpore naturali generatim:	I. Tractatus, de principijs rerū naturalium:	1. Disputatio, de illis generatim, 2. Disp. de iisdem spectatim; 3. Disp. de Natura, & Composito naturali,	
	II. Tract. de Causis rerum naturalium:	1. Disp. de causis in genere, 2. Disp. de quatuor causarum generibus, 3. Disp. de causis per accidens,	
	III. Tract. de cōmuni- bus re- rum naturalium Proprietatibus	1. Disp. de Quantitate; ubi, de Infinito, 2. Disp. de Loco; ubi, de Vacuo, 3. Disp. de Tempore; 4. Disp. de motu;	10
Secunda, de corpore naturali Inanimato:	I. Tract. de Mundo & Cœlo:	Prior Disp. de Mundo, Posterior Disp. de Cœlo, Appendix hujus Disp. seu brevis Institutio Geographica,	5 9
	II. Tract. de Elementis:	1. Disp. de natura & proprietatibus Elementorum generatim, 2. Disp. de variis mutationibus Elementorum, 3. Disp. de singulis Elementis,	cap. 9. Qu. 6 14
	III. Tract. de corporibus Mixtis:	Prior Disp. de Mixtis imperfectis, seu Meteoris, Posterior Disp. de Mixtis perfectis,	14 5
Tertia, de corpore naturali Animato:	I. Tract. de Anima generatim:	Prior Disp. de iis quæ ad naturam Animæ perti- nent, Posterior Disp. de facultatibus animæ generatim,	10 5
	II. Tract. de anima Vegetante:	1. Disp. de facultatibus animæ vegetantis genera- tim, 2. Disp. de facultate Alendi, 3. Disp. de facultate Accrescendi, 4. Disp. de facultate Generandi,	2 10 6 3
	III. Tract. de anima Sentiente:	1. Disp. de Sensu in communi, 2. Disp. de sensibus Externis: 1. S. de iis generatim 2. S. de Visu, 3. S. de Auditu, 4. S. de Olfactu, 5. S. de Gustu, 6. S. de Tactu, 3. Disp. de sensibus Internis, 4. Disp. de Motu animalium,	6 20 8 2
IV. Tract. de animo Rationali:	1. Disp. de iis quæ spectant ad substantiam animæ Rationalis, 2. Disp. de iis quæ spectant ad facultates animæ Rationalis 3. Disp. de statu animæ Separatæ;	4 11 7	

P. Petri Galtruchii
AURELIANENSIS
SOC. JESU
MATHEMATICÆ
T O T I U S,

Hoc est { 1 *Arithmetica,* } { 5 *Gnomonica,*
 { 2 *Geometria,* } { 6 *Geographia,*
 { 3 *Astronomia,* } { 7 *Optica,*
 { 4 *Chronologia,* } { 8 *Musica,*

Clara, Brevis & accurata Institutio.

In gratiam studiosæ Juventutis adornata.

L O N D I N I,

Typis *M. Clarke,* Impensis *Richardi Greens*
Bibliopolæ *Cantabrigiensis.* 1683.

SYSTEMA
COMPENDIOSUM TOTIUS
MATHEMATICES,

hoc est

GEOMETRIÆ,
OPTICÆ, ASTRONOMIÆ,
ET
GEOGRAPHIÆ

*Publicis Praelectionibus Anno 1605. in Celeberrimo
Gymnasio Dantiscano propositum.*

A
BARTHOLOMÆO KECKERMANNO S. S.
Theolog. Licentiato & Philosophiæ
Professore

*In fine accessit brevis Commentatio Nautica, ab eo-
dem Autore ibidem proposita Anno 1603.*

Adjecto indice Capitum Singulorum librorum.

*Demum, ut Liber evaderet Integer Cursus Mathemati-
cus,*

*Accessit his omnibus brevissima in Geographiam Ma-
nuduçio.*

*Item Methodus facilis Arithmeticæ Practicæ
Per Gemmam Frisitanæ.*

O X O N I I,

*Excudebat Gulielmus Hall pro Francisco Oxlad
Anno M DC LXI.*

THE
O R I G I N E
O F
FORMES and QUALITIES,

(According to the *Corpuscular Philo-
sophy*;) Illustrated by *Considerations* and
EXPERIMENTS,

(Written formerly by way of *Notes* upon an
Essay about N I T R E)

By the Honourable
R O B E R T B O Y L E,
Fellow of the *Royal Society*.

*Audendum est, & Veritas investiganda; quam etiam si
non assequamur, omnino tamen propius, quam nunc sumus,
ad eam perveniemus. Galen.*

O X F O R D,

Printed by H. HALL Printer to the University,
for R I C: D A V I S. An. Dom. MDCLXVI.

Leibniz: A Brief Chronology

- 1646: Born, Leipzig
- 1652-1661: First studies, Nicolai-Schule
- 1661-1666: Student, University of Leipzig
- 1666-7: Student, University of Altdorf; refuses professorship
- 1667: Enters the service of the Elector of Mainz.
- 1672-76: Sent to Paris on a diplomatic mission, he encounters Huygens, learns about the moderns, and invents the calculus, all in his spare time.
- 1676: Returns to Germany, passing by way of Holland (where he meets Spinoza), and enters the service of the House of Hannover.
- 1680-86: Concerned with the draining of the Harz Mountains
- 1684: Publication of the “Meditations on Knowledge, Truth and Ideas,” as well as the “Nova Methodus pro maximis et minimis.”
- 1687-90: Visits Italy and Austria in search of historical documents, and to spread his philosophy; drafts the *Dynamics*, but fails to publish it.
- 1695: Publication of the “Specimen Dynamicum” and the “New System”
- 1703-4: Drafts the *New Essays*, but fails to publish it.
- 1710: Publishes the *Theodicy*
- 1712-1714: Visits Vienna for historical documents, and to spread his philosophy.
- 1714: George, Elector of Hannover leaves for England; Leibniz races back from Vienna to miss him by two weeks, and is told to remain in Hannover.
- 1716: Dies, Hannover.