

## 1 Introduction

Many people first came across the name "Leibniz" when reading Voltaire's *Candide*, and the encounter is not likely to inspire confidence in Leibniz as a great philosopher. In Voltaire's biting satire, the optimism of Doctor Pangloss – whose character is based either on Leibniz himself or on his disciples – appears as a foolish and almost wickedly complacent response to the evils of our world. The reader cannot help but sympathize with Candide's rhetorical question: "If this is the best of all possible worlds, . . . what can the rest be like?" Even initial exposure to Leibniz's own texts is not always encouraging. Perhaps the most widely read of Leibniz's works is the *Monadology*, and although, in many respects, a brilliant summary of his final metaphysical views, it is not the best introduction to his philosophy. It is natural to feel, as Bertrand Russell once did, that we are presented with "a kind of metaphysical fairy tale, coherent perhaps, but wholly arbitrary"; part of the problem is that the fairy tale metaphysics is presented to us in a "take it or leave it" manner with little in the way of sustained argument. Initially, then, Leibniz's reputation as a philosophical genius of the first rank may strike us as puzzling.

Deeper acquaintance with Leibniz's work should serve to dispel these doubts. Leibniz did indeed hold that this is the best of all possible worlds, but this thesis is not the complacent nonsense that it appears to be. A little reflection shows that it is a fairly natural position to take up in response to problems of philosophical theology. For if God is essentially good, then it is difficult – but not impossible – to escape the conclusion that the world that he created must be the best of those alternatives available to him. Moreover, and more importantly, Leibniz's apparatus of possible worlds provides a compelling and influential framework for tackling deep prob-

lems about necessity, contingency, and free will. Although the interpretation of Leibniz is controversial in this area, it is largely within this framework that he seeks to do justice to our intuition that Julius Caesar, for example, might have done otherwise than cross the Rubicon. Or consider the *Monadology*. Far from being a gratuitous metaphysical fairy tale, the theory of monads is, in fact, a solution to the problem of determining the fundamental building-blocks of reality consistent with Leibniz's conviction that matter is infinitely divisible. Moreover, the theory of monads has remarkable parallels with modern metaphysical theories such as reductive materialism. The reductive materialist seeks to argue that all that fundamentally exists is matter, and that apparently nonmaterial things, such as minds, are, in reality, physical items – namely brains. In a structurally similar way, Leibniz argues that all that fundamentally exists is minds (strictly, souls), and that bodies can somehow be reduced to mental entities. Indeed, the theory of monads is a kind of idealist mirror image of modern reductive materialism. Reductive materialism may appear today to be more intuitive than the reductive idealism of the *Monadology*, but the underlying debate is very far from being concluded in the materialist's favor.<sup>3</sup>

Leibniz shares with Descartes and Spinoza the deep conviction that human reason is competent to discover the ultimate nature of reality, and, for this reason, he is traditionally classified with them as a “Rationalist” philosopher. Yet though Leibniz shares their ambitious conception of the philosophical enterprise, in important respects he stands apart from the other two. Descartes and, less explicitly, Spinoza impress the reader by their insistence on the need to make a clean break with the philosophical past in order to arrive at the truth: the edifice of knowledge must be reconstructed on new foundations. As Descartes said, “I realized that it was necessary, once in the course of my life, to demolish everything completely and start again right from the foundations if I wanted to establish anything at all in the sciences that was stable and likely to last.”<sup>4</sup> Leibniz, by contrast, is much less of a revolutionary in spirit; he is far more respectful of the whole philosophical tradition deriving from the Greeks. Although at times he can be a sharp polemicist, the entire tendency of his philosophy is to seek synthesis and reconciliation wherever possible. As he himself puts it, “the majority of the philosophical sects are right in the greater part of what they affirm,

but not so much in what they deny" (Letter to Remond, 10 January 1714, G III 607). Particularly during his earlier career, Leibniz sought to reconcile the new mechanical philosophy of the Scientific Revolution with the Aristotelian-Scholastic tradition which Descartes and Spinoza largely rejected. Leibniz's circential habit of mind is not confined to his philosophy; it displays itself further in the various schemes for political and religious reconciliation which occupied him throughout his career.

Leibniz's preoccupation with peace and reconciliation is understandable, for the Germany of his youth had been ravaged by the horrors of the Thirty Years' War – a war in which dynastic and religious rivalries were inextricably involved. Leibniz, born in Leipzig in 1626, was the son of a university professor. After his father's death in 1652, the prodigiously gifted boy had the run of the family library, and he soon showed the tendency towards polymathy which was a hallmark of his whole career. As Roger Ariew notes (see Chapter 2), Leibniz, having taught himself Latin at seven or eight, embarked on a vast reading course of poets, orators, historians, jurists, philosophers, mathematicians, and theologians. Leibniz was later educated at the universities of Leipzig and Jena, but he was, to a large extent, self-taught and retained some of the habits of mind of the autodidact; he never acquired the ability to wear his immense learning lightly.

Although he was offered a university post, Leibniz, like other great thinkers of the seventeenth century, turned his back on an academic career. His contemporaries' reasons for rejecting academic careers are clear; the universities of the age were bastions of the "old" learning, offering little exposure to the ferment of new ideas associated with the Scientific Revolution. Leibniz's motives for rejecting an academic career may have been different and more complex, for he never harbored the contempt for Scholastic learning that is characteristic of Descartes or Hobbes. Leibniz may have been guided at least in part by the feeling that a university setting would not afford him an adequate outlet for his own full range of interests, which included politics, religion, and diplomacy, as well as philosophy and science. Most of Leibniz's life was spent in the service of minor German courts, where he took advantage of the opportunities offered to devote his energies to political and religious projects. For instance, during his employment in the service of the Elector of Mainz, Leibniz conceived the idea of diverting French expansionist

ambitions away from Germany towards Egypt, and he was sent on a diplomatic mission to Paris to try to interest Louis XIV in this scheme. (The idea, never actually proposed to Louis' ministers, was later taken up by Napoleon.) After his return from Paris, Leibniz entered the service of the Electors of Hanover – his final employer. Georg Ludwig, ascended the British throne as George I. In addition to his official duties as court librarian and historian, Leibniz busied himself with projects for political and religious reconciliation. One such project was an ambitious scheme for reuniting the Catholic and Protestant churches; as Aries shows (see Chapter 2), Leibniz displayed great intellectual subtlety in seeking to find doctrinal formulae on which both sides could agree. Many of Leibniz's schemes were no doubt impractical and unrealistic, and despite his extensive network of connections (carried on through a vast correspondence) all over Europe, Leibniz never seems to have had the knack of pulling strings. On the other hand, the recent history of our own time should make us cautious in passing judgment about what is and is not possible in the realm of politics, for some of Leibniz's schemes have an almost eerily prophetic quality. For instance, Leibniz's concern with trying to establish a degree of sovereignty for German princes within the framework of the Holy Roman Empire anticipates current concerns about the place of nation-states within a united Europe.

Leibniz's diplomatic mission took him to Paris in 1672, and he stayed there for four years. At that time, Paris was the intellectual capital of Europe. Leibniz took full advantage of the opportunities it offered; he made great strides in the study of mathematics (discovering the differential calculus, independently of Newton, in 1675) and he immersed himself in the study of the philosophy of the Moderns and of the French Cartesians, in particular. Yet, as Stuart Brown argues (see Chapter 3), despite Leibniz's exposure to the thought of the Moderns, other strands of seventeenth-century thought are no less important for understanding Leibniz. In addition to the Moderns, Brown isolates the Scholastic and Renaissance strands for special attention. Leibniz's links with the Scholastic tradition are evident not just in his characteristic insistence on reconciling Aristotle and the Moderns, but also in the very choice of problems to place on the philosophical agenda. As Brown argues, "many of the problems that particularly exercised Leibniz were Scholastic ones"; his life-

long concern with reconciling free will with divine foreknowledge and predestination is an obvious example. Leibniz's links with Renaissance philosophy are seen not just in the overall eclecticism of his philosophy but also in some of his more esoteric doctrines which suggest the influence of neoPlatonism. The thesis, central to Leibniz's metaphysics, that every individual substance is a microcosm of the whole universe is an idea he would have encountered in Renaissance philosophy. As Brown points out, Renaissance neo-Platonic philosophy exhibited a tendency towards idealism, and idealism is at the heart of Leibniz's final metaphysics.

Although he regarded himself generally as on the side of the moderns, Leibniz sought to incorporate Scholastic and Renaissance ideas in his philosophy. But as Brown notes, he was not unaware of the dangers of these attempts at synthesis, particularly where Scholasticism was concerned. For much of the seventeenth century, the Aristotelian tradition remained relatively vital; textbook accounts have tended to exaggerate the speed of its demise at the hands of the Moderns. But by the end of the seventeenth century the situation had changed. Particularly in France, toleration for Scholastic concepts and vocabulary was diminishing, and Leibniz came to worry that, by sounding like a Scholastic, he might prejudice his chances of gaining a fair hearing for his system. Perhaps the residue of Scholasticism in his philosophy is one reason why, as we shall see, his system was not well received in the country of Voltaire.

Leibniz's philosophical interests were many and varied, but at the center of his philosophy is his metaphysics – his theory of the fundamental nature of reality. When most people think of Leibniz's metaphysics, they are apt to remember his theory of monads – the thesis that the ultimate constituents of reality are “windowless” (i.e. noninteracting) souls or soul-like substances whose states are harmonized by a benevolent God. Although the theory of monads is the most famous version of Leibniz's metaphysics, it makes a relatively late appearance in his philosophical career; even the term “monad,” in the sense which became standard for Leibniz, does not appear in his writings before 1695. Much recent scholarly work has been devoted to tracing the evolution of Leibniz's metaphysical thought towards its final flowering in the theory of monads, and in this volume this interest is reflected in two essays which divide Leibniz's metaphysics on chronological lines. Christa Mercer and Rob-

eri. Sleight discuss the development of Leibniz's metaphysics up to the *Discourse on Metaphysics* of 1686, generally recognized as Leibniz's first mature work (see Chapter 4); Donald Rutherford in his essay (Chapter 5) concentrates on the later metaphysics of monads.

Mercer and Sleight argue that although Leibniz was, at an early stage, attracted by the new mechanistic physics, he was also dissatisfied with its metaphysical foundations; neither Epicurean atoms nor Cartesian matter, divisible to infinity, could be the fundamental building blocks of physical reality. Rather, Leibniz believed that the new physical theory needed to be anchored in a metaphysics of substance whose inspiration would be essentially Aristotelian. As Mercer and Sleight show, certain intuitions about substance which derive from Aristotle remain fairly constant in his philosophy. For example, the Aristotelian principle that a substance must be in some sense explanatorily self-sufficient makes an early appearance in Leibniz's thought and remains until the end. Mercer and Sleight show how fruitfully Leibniz develops Aristotle's doctrine of substantial self-sufficiency; Leibniz extends this thesis to cover all substantial properties, not just essential ones. Thus, on the basis of Aristotelian principles Leibniz arrives at some of his most familiar metaphysical doctrines: substances are causally independent of everything except God; they are genuine unities; no two are exactly alike (the Identity of Indiscernibles), and they bear marks of their future states and traces of all their past ones. Mercer and Sleight argue that these teachings are essentially in place in Leibniz's thought by 1676 – ten years before the *Discourse on Metaphysics*. It is important to see, however, that this conclusion is consistent with the view that Leibniz's metaphysics had to go through a further stage of evolution before it reached its final form. For although, at a rather early date, Leibniz was clear about what conditions had to be satisfied by an entity in order to count as substantial, he was much less certain about what entities, in fact, satisfied these conditions; in technical terminology, although the intension of the term "substance" was clear to Leibniz, its extension was not. Leibniz seems never to have believed that a merely extended being, such as Cartesian body, could count as a substance, but at least around the time of the *Discourse on Metaphysics*, he seems to have entertained the idea that organic bodies, or bodies unified by the presence of a substantial form, might indeed satisfy

the conditions for substantiality. It is not until around 1700 that Leibniz found a solution to the “extensional” problem with which he could not rest satisfied; he finally became convinced that only souls or soul-like entities could qualify as substances.

In a letter written in 1704, Leibniz told his correspondent, De Volder, that strictly speaking “there is nothing in the world except simple substances and, in them, perception and appetite” (30 June 1704, *C II* 270; *L* 537). Leibniz thus provided a concise statement of the basic thesis of his final metaphysics, the theory of monads. Rutherford argues that for all its apparent strangeness, the theory of monads – a metaphysics of some power, with attendant difficulties he does not seek to minimize; the major difficulty perhaps is to understand what account Leibniz can give of the status of bodies within an ontology that regards only souls as ultimately real or substantial. On one occasion, Leibniz tells the same correspondent, De Volder, that he does not seek to eliminate body, but only to reduce it to what it is (letter to De Volder, 1704 or 1705, *C II* 275; *AG* 181); thus, Leibniz makes it clear that he wishes to offer some kind of reductionist account of bodies, but the problem is to understand the nature of the reduction. Some commentators have supposed that Leibniz, like Berkeley, intends to offer a version of phenomenalism, or in other words, a theory according to which bodies are harmonized sets of the contents of perceptions. Rutherford argues, however, that such an interpretation does not do justice to Leibniz’s many statements to the effect that bodies are founded in some mind-independent reality; for Leibniz, bodies are not sets of perceptions, but aggregates of monads. Rutherford also rejects the suggestion that, because of their mental confusion, human minds simply misperceive certain monads as three-dimensional bodies in space; in Rutherford’s view, this interpretation fails to capture Leibniz’s intention to identify bodies ontologically with pluralities of monads. Although the theory of monads is Leibniz’s official metaphysics in his later writings, Rutherford recognizes that there are occasions when Leibniz seems to depart from the strict purity of the theory. Perhaps the most notorious of Leibniz’s attempts to modify the doctrine is his introduction of the concept of a substantial bond (*vinculum substantiale*) over and above monads which somehow accounts for the unity of organic bodies. Leibniz introduced this notion when challenged by a Jesuit to give an account of the miracle of transubstantiation, and Rutherford, like Bertrand

Russell before him, is inclined to dismiss the substantial bond as the concession of a diplomat rather than the creed of a philosopher.

If metaphysics is at the center of Leibniz's philosophy, what we now call epistemology or the theory of knowledge occupies a somewhat peripheral role. Despite the fact that they are grouped together as "Rationalists," Leibniz showed little of Descartes' interest in the project of finding indubitable foundations for human knowledge. Unlike Descartes, Leibniz was never seriously impressed by the challenge of extreme scepticism, and as Robert McRae argues (in Chapter 6), Leibniz seems to have regarded Descartes' hyperbolic doubt in the First Meditation as a kind of flashy, rhetorical trick which served no useful philosophical purpose. Leibniz was similarly unimpressed by Descartes' first positive move in the reconstruction of the edifice of knowledge – namely, the famous *cogito ergo sum*;<sup>6</sup> Leibniz claimed that there are other propositions such as "Various things are thought by me" [*Varia a me cogitantur*] of which one can be equally certain (G IV 357). Such a response may suggest a blindness to the fact that the *cogito* is not merely incorrigible but also self-verifying; to deny that one is thinking or that one exists is pragmatically self-defeating in a way that to deny that one is thinking of a plurality of things is not. Yet, as McRae argues, Leibniz's response to Descartes is also vulnerable to criticism from a rather different direction; for Descartes himself sometimes claims that there are other judgments equally as certain as the *cogito*, and Leibniz seems to have forgotten this fact.

If Leibniz was unimpressed by Descartes' epistemological project in the *Meditations*, he nonetheless agreed with Descartes on certain issues; in particular, he sided with Descartes against Locke in approving of the originally Platonic doctrine of innate ideas. Indeed, the agreement between Leibniz and Descartes on this issue is one of the reasons why the two philosophers have traditionally been classified together as "Rationalists" in opposition to "Empiricists" such as Locke, since the theory of innate ideas implies that the human mind is not dependent on experience for all its knowledge. However, philosophers have sometimes found it difficult to see what is at issue between defenders and opponents of innate ideas, and McRae shows that there are ambiguities and complexities in Leibniz's account; not merely does Leibniz offer different arguments for innate ideas, but he seems to use the term "innate" in different senses. McRae

letter addresses the difficulty of how Leibniz can say that mathematical knowledge is innate given his theory that mathematics is the science of the imaginable.

Leibniz's relative lack of interest in the foundations of knowledge is one aspect of his thought that sets him apart from other philosophers of the early modern period. Leibniz is also out of step with his leading contemporaries in his attitude towards logic. In an age when the subject tended to be regarded with suspicion because of its alleged association with the more barren aspects of Scholasticism, Leibniz was a keen student of logic, and he made important contributions to its development; indeed, he has traditionally been seen as one of the early pioneers of symbolic logic. Yet, as G. H. R. Parkinson points out (see Chapter 7), when modern scholars speak of Leibniz's logic, it is not so much his technical contributions to the subject they have in mind but rather his theory of truth and of the nature of the proposition, for these are highly relevant to broader philosophical issues. As Parkinson shows, Leibniz propounded a distinctive "intensional" theory of truth in terms of concept-containment; simplifying somewhat, we can say that for Leibniz a proposition is true if and only if the concept of the predicate is contained in the concept of the subject. Such a theory raises important problems which were first identified by Leibniz's correspondent Arnauld and have been debated since; the chief problem is that the theory seems to have the consequence that all truths are necessary truths. Leibniz certainly did not wish to be committed to this consequence, since he reasonably regarded the denial of contingency in the world as inconsistent with the freedom of the will which he wished to uphold against Spinoza's necessitarianism. Thus, Leibniz was well aware of the problem of accommodating contingency in his philosophy, and Parkinson examines Leibniz's various attempts to solve the problem.

In the second of his essays in this volume (see Chapter 8), Donald Rutherford argues that Leibniz, in his attitude to language, is once again out of step with his leading contemporaries. According to Rutherford, other major seventeenth-century philosophers tended to think of language "as a barrier between the mind and the world that must so far as possible be overcome"; Leibniz, by contrast, regarded language "as a lens that necessarily intervenes between the mind and world and that can, depending on the skill of the optician, either

distort or magnify our apprehension of the world." This conviction that language can, in principle, be a perfect image of reality finds expression in Leibniz's project for a "universal characteristic" or artificial language. Leibniz was not alone in his enthusiasm for such a project; similar schemes were advanced in the seventeenth century by lesser figures such as Wilkins and Dalgarno. Yet, as Rutherford shows, in the case of Leibniz at least, there is a basic ambiguity in the nature and scope of the project. In one interpretation, the universal characteristic is intended to be a truly ideal language which would symbolically represent the content of thought by means of "real characters." In another interpretation, the goal of Leibniz's project is more modest and is concerned only with form, not content; its aim is simply to express the logical relations among concepts and propositions. In this latter reading, the chief interest of the universal characteristic lies in its role as a precursor of modern symbolic logic. Rutherford argues that Leibniz's views on this issue may have changed over time; in his later writings, Leibniz tended to focus more on the formal, logical nature of the project – what he called the *specieuse generale*. Rutherford suggests, however, that Leibniz never wholly abandoned his early ambition to create an ideal artificial language.

Leibniz's interest in language is by no means exhausted by his project, or projects, for a universal characteristic. As Rutherford shows, Leibniz took a typically lively interest in a wide variety of issues having to do with natural languages, ranging from historical inquiries into the origins of languages to more properly philosophical investigations into the semantics of proper names and general terms. Leibniz's historical inquiries are apt to appear badly dated, and certainly his etymological speculations often strike the modern reader as fanciful, but his contributions to semantics – especially the semantics of general terms – are very much alive; indeed, Leibniz arrived at insights into the functioning of "natural kind" terms which have been independently rediscovered in our own time by Saul Kripke and Hilary Putnam. One issue that Rutherford takes up is the relationship between Leibniz's project for a universal characteristic and his inquiries into natural languages – in particular, did Leibniz ever advocate the eventual replacement of natural languages by an artificial language? The ambiguity in Leibniz's conception of the scope of the universal characteristic suggests that there can be

no simple answer to this question; Rutherford answers it with a carefully qualified “yes.”

One underlying motive for Leibniz’s commitment to the project of a universal characteristic was his desire for peace; he believed that an artificial language would help to promote communication and understanding among peoples divided by their different languages. In a different way, Leibniz’s eirenic temperament emerges in his physics, a discipline which he did much to advance by clarifying the concept of force. As Daniel Garber shows (see Chapter 9), although Leibniz was a modern physicist who fully accepted the seventeenth-century commitment to mechanical explanations, he was also committed to reconciling the new physics with Aristotelian principles wherever it was possible to do so; in particular, he sought to anchor his dynamics in a quasi-Aristotelian metaphysics of matter and form. One striking way in which Leibniz seeks to retain the Aristotelian legacy is his attempt to find a place for the category of final causes which had been banished from physics by Descartes and Spinoza.

But whereas Leibniz sought accommodation with Aristotle in his physics, he was much less accommodating in his attitude to the physical theories of two of his leading seventeenth-century rivals, Descartes and Newton. Leibniz was a severe and devastating critic of Descartes’ conservation principles and laws of impact, which he showed to be seriously at odds with the empirical data. Towards the end of his life, Leibniz was also a severe critic of Newtonian physics and of what he took to be its inadequate metaphysical foundations. By this stage Leibniz’s personal relations with Newton had been soured by the “priority dispute” over the discovery of the differential calculus (see Roger Ariew’s chapter), and a year before his death in 1716, Leibniz entered into a somewhat bitter exchange of letters with one of Newton’s leading disciples, theologian Samuel Clarke. In this important correspondence, Leibniz employed some of his main metaphysical principles – the Principle of Sufficient Reason and the Identity of Indiscernibles – for polemical purposes against the Newtonian theory of absolute space and time. More recklessly perhaps Leibniz further attacked the Newtonian theory of universal gravitation for its supposed commitment to action at a distance. (Newton himself rejected action at a distance, but it was embraced by some of his disciples). As Garber shows, Leibniz’s polemic

against the Newtonian theory placed some strain on his general willingness to defend the Aristotelian-Scholastic tradition wherever possible. For Leibniz, the Newtonian theory of attractive forces seemed to herald the reintroduction into natural philosophy of those Scholastic 'occult qualities' which his contemporaries prided themselves on having banished; indeed, in Leibniz's eyes this was one of the great achievements of seventeenth-century physics. Here, then, Leibniz appears in the guise of a rather dogmatic defender of the mechanical philosophy against the Aristotelian tradition.

Natural theology – or that part of theology which uses reason to establish the nature and existence of God – was one of Leibniz's lifelong concerns. It was also a concern that was integrated with other areas of his thought. As Leibniz writes in a passage quoted by Garber, 'those beautiful laws of physics are a marvellous proof of an intelligent and free being against the system of absolute and brute necessity' (*Theodicy* Part I, par. 345, G VI 319) which he associates above all with the name of Spinoza. Sometimes, however, Leibniz reverses the direction of the argument; adopting the perspective of an omniscient and benevolent God, he seeks to discover what physical laws would most recommend themselves to such a being, and would thus be instantiated in our world. Such a strategy has no more than a heuristic value for Leibniz, for he would not seek to deny that any hypotheses arrived at in this way would stand in need of empirical verification.

As we have seen, Leibniz thought that there was much of value in the philosophical past, and in view of this attitude we would expect that he would tend to approve of traditional proofs of God's existence. As David Blumenfeld shows in the first of two essays on Leibniz's natural theology (see Chapter 10), this expectation is, indeed, satisfied. Leibniz writes that "almost all the methods which have been used to prove the existence of God are sound and could serve the purpose if they were rendered complete" (*New Essays*, A VI, vi: RB 438). Leibniz offers four main proofs of the existence of God, and all four are traditional ones; in some cases, though, Leibniz gives them a distinctive twist to bring them into line with the special features of his system. Blumenfeld focuses on those two proofs which he believes to be of most enduring philosophical interest: the ontological and the cosmological arguments.

The ontological argument is far from being Leibniz's own inven-

tion, having its own long history which goes back to St. Anselm in the eleventh century; in Leibniz's own time versions of the proof had been put forward by both Descartes and Spinoza. Nevertheless, Leibniz makes at least one distinctive contribution of his own. The essence of the argument is that the existence of God is logically implied by his nature; a most perfect being, or (what Leibniz regards as equivalent) a necessary being, must have the perfection of existence and, hence, must exist. Critics of the argument from Aquinas to Kant have tended to focus on the issue of whether existence is indeed a perfection; in the terms of Kant's objection, existence is not a genuine predicate. Leibniz, by contrast, stands apart by insisting that in order to establish the soundness of the argument, it is crucial to show that a most perfect being is logically possible. It is in this sense that Leibniz regards the ontological argument as one of those proofs which need to be rendered complete. Blumenfeld examines Leibniz's attempt to complete the proof, and finds that the attempt is fraught with difficulties arising from other commitments in his philosophy.

Whereas the ontological argument is entirely *a priori*, the cosmological argument is, at least in part, *a posteriori*: it depends on the premise that a contingent series of things exists. Among other important issues, Blumenfeld examines an implicit debate between Leibniz and Spinoza; at least on a standard reading, Spinoza holds that the existence of the world is not contingent but necessary. Central to the debate between Leibniz and Spinoza is the question of whether there are any unactualized possibilities. Leibniz believes that there are: King Arthur of Britain, for example, is a possible being but not an actual one, for he did not exist. Spinoza, by contrast, believes that the actual is co-extensive with the possible and that, since Arthur did not exist, he is not even possible. Blumenfeld adjudicates the debate by arguing that Leibniz's commitment to unactualized possibilities is at least more intuitive than Spinoza's rejection of this thesis.

Leibniz's God, unlike Spinoza's, *deus*, chooses among possible states of affairs; in the Leibnizian terminology, which has been borrowed in contemporary metaphysics of modality, he chooses among "possible worlds," and the world which God chooses is the best. As we saw at the outset of this Introduction, this thesis that Voltaire made notorious is, in fact, a fairly plausible piece of natural theology. Nonetheless, it obviously prompts some questions about its con-

tent: by what standard, we may ask, is this the best of all possible worlds? Voltaire's satire in *Candide* focuses on the criterion of human happiness, but, as Blumenfeld shows (see Chapter 11), Leibniz's basic standard for adjudicating possible worlds is different; it is not moral but metaphysical. For Leibniz, the best world is the one that contains the maximum variety of phenomena and the maximum simplicity of laws. How this standard should be interpreted has been the subject of lively debate in the literature, and Blumenfeld canvasses the various possibilities. He rejects the idea that, for Leibniz, variety and simplicity pull in different directions and that God is forced into a trade-off in order to achieve maximum overall perfection. Instead, Blumenfeld argues that our world is the one in which both variety and simplicity are at a maximum.

If the variety/simplicity criterion is Leibniz's basic yardstick for assessing possible worlds, we may wonder whether Voltaire's satire is completely off target. The answer is "not quite," for though philosophers have wished that Leibniz had confined himself to offering an exclusively metaphysical standard for evaluating possible worlds, he does not, in fact, do so; he proceeds to argue that the actual world is not only the best metaphysically, but also the best morally: it is that possible world in which human happiness is at a maximum. Indeed, Leibniz sometimes seems to think that the world's having the most moral perfection can be derived from its having the most metaphysical perfection. As Blumenfeld shows, throughout his career Leibniz remained both a metaphysical and a moral optimist, but as he also shows, in his later works such as the *Théodicee*, Leibniz seems to have retreated from some of the more blatantly anthropocentric claims of his earlier writings.

Unlike Spinoza with whom he otherwise has so much in common, Leibniz was not a moral or political philosopher of the front rank, and some assessments of his contributions in these areas have been distinctly unflattering. But as Gregory Brown argues (see Chapter 12), this dismissive attitude towards Leibniz's achievements in moral philosophy is unjustified. Leibniz offered "a profound and inventive philosophical underpinning for conventional legal wisdom." Perhaps the most striking aspect of Leibniz's moral philosophy is once again its tendency towards the synthesis of apparently opposing views, as Brown shows, Leibniz makes an attempt to reconcile the views of the radical Hobbes and the more traditional natural law theorist Hugo

Grotius. Leibniz rejected Hobbes's voluntarist view that natural law (considered strictly as law) is morally binding because it expresses the will of God, and sided instead with Grotius's thesis that natural law would oblige human beings even if, *per impossibile*, God did not exist. But despite Hobbes's evil reputation in the seventeenth century, Leibniz was not afraid to follow him on the issue of psychological egoism; in other words, he agrees with Hobbes in holding that all our actions are directed in some sense towards our own perceived good. As Brown shows, Leibniz's concept of justice makes his commitment to the thesis of psychological egoism problematic: "By his own psychological assumptions, no one can act except for his own perceived good; but in order to act in a truly just way, one cannot act on mercenary motives. It would thus appear that no one can ever act in a truly just way." Brown shows that Leibniz's notion of disinterested love is the key to the solution of this problem: the truly just or virtuous person loves others in a disinterested way by finding his or her happiness in their happiness.

The range of Leibniz's thought is truly astonishing; the relations between his philosophy and what we would now regard as independent disciplines are complex and fascinating. But many of Leibniz's ideas discussed by contributors to this volume were not fully accessible either to his contemporaries or to his successors in the eighteenth century. Leibniz published just one philosophical book, the *Theodicy*, and a handful of articles in learned journals, otherwise much of his work did not see the light of day until long after his death, and indeed the publication of his *Nachlass* continues apace even in our own time. Leibniz himself remarked that anyone who knew him only from his published writings did not really know him (letter to Placcius, 21 February 1696, DC VI i 63). Because of Leibniz's reluctance to publish, his early readers had access to only a fraction of his total output and therefore acquired a one-sided and misleading impression of his achievement; the popular, rather unsatisfactory book, the *Theodicy*, came to assume an undue prominence in Leibniz's corpus. Not surprisingly, Leibniz's reputation as a great philosopher was slow to develop and was only fully established when his logical writings began to be published in the last century. As Catherine Wilson shows (see Chapter 13), given the progressive tendency of much of his thought, some early readers were puzzled by Leibniz's willingness in the *Theodicy* to defend such orthodox

doctrines as eternal punishment and wondered about his sincerity in that work. Hence, there sprang up an idea which, misleading though it may be, has proved remarkably enduring and resistant: the view that Leibniz had two philosophies – one, profound and esoteric, and another which was popular, superficial, and written to defend the dogmas of orthodox theology.<sup>1</sup> Moreover, as Wilson also shows, another factor working against the recognition of Leibniz's genius was a profound change in philosophical climate in the wake of Locke: there was a reaction against the kind of speculative metaphysical system-building of which Leibniz seemed a leading representative. The mood of this reaction was expressed in a rather popular fashion in the writings of Voltaire and Condillac, but it received its most sophisticated philosophical defense in the work of Kant. In his *Critique of Pure Reason*, Kant argued that a speculative metaphysical system such as the theory of monads involves an illegitimate extension of reason beyond its proper sphere of application – the limits of possible experience. Whether Kant is right in his critique of speculative metaphysics remains one of the central issues in philosophy; earlier in our century the Logical Positivists went even further than Kant in their attack on metaphysics, but contemporary philosophers are, in general, more sympathetic. It is true that Leibniz's system of monads finds few supporters today, though it remains one of the most impressive examples of revisionary metaphysics, and there is much in its reductionism from which philosophers can learn. But leaving monadology aside, the fertility of Leibniz's mind is truly remarkable, and many of his ideas have exerted a positive influence on contemporary philosophers. His theory of possible worlds, his semantics of proper names and general terms, his relational theory of space and time, his doctrine of innate knowledge – these and countless other ideas represent an enduring legacy to modern philosophy. Certainly it would be facile in the extreme to suppose that Leibniz's philosophy had been simply demolished by Kant.

## NOTES

- 1 Voltaire, *Candide*, trans. Butt, p. 37.
- 2 Russell, *A Critical Exposition of the Philosophy of Leibniz*, p. xiii.
- 3 I do not mean to imply that the theory of monads, or indeed any form of idealism, is the leading alternative to reductive materialism. Some form

of dualism is of course a major competitor. It should also be noted that there are other forms of materialism – for example, eliminative materialism which holds that though the mental cannot be reduced to the physical, nothing in the world falls under the former concept.

- 4 Descartes, Meditation I, Adam and Tannery, *Opera de Descartes* VII 17; Cottingham, Stoothoff, and Murdoch, *Philosophical Writings of Descartes* II 12.
- 5 The Latin here is ambiguous. Leibniz may also be read as saying that he seeks to reduce body to what is. But in any case, the main point is clear: bodies are to be reduced to simple substances or monads.
- 6 The phrase *cogito, ergo sum* does not appear in Meditation I, instead Descartes writes: "I must finally conclude that this proposition, *I am, I exist*, is necessarily true whenever it is put forward by me or conceived in my mind." (Adam and Tannery VII 25; Cottingham, Stoothoff and Murdoch II 17.) For Descartes' use of the famous Latin phrase, see Adam and Tannery VII 120; Cottingham, Stoothoff and Murdoch II 100. See also the *Discourse on Method* for the French version: Adam and Tannery X 41; Cottingham, Stoothoff and Murdoch I 127.
- 7 In modern times this view is associated above all with Bertrand Russell; see his *Philosophy of Language*, p. vi.

## 2 G. W. Leibniz, life and works

Gottfried Wilhelm Leibniz<sup>1</sup> was born at Leipzig on July 1, 1646 into a noble and academic family: the son of Friedrich Leibniz,<sup>2</sup> Professor of Moral Philosophy and Registrar of the University of Leipzig, and of Friedrich's third wife, Catharina Schmuck, the daughter of a Professor of Law.<sup>3</sup> Leibniz lost his father in 1652 at the age of six, and his mother took charge of his education. He started school at seven, and, as soon as he knew enough Latin (which, Leibniz says, he taught himself at seven or eight), he was allowed into his father's library. There he undertook a vast reading of poets, orators, historians, jurists, philosophers, mathematicians, and theologians – from Livy and Clavius to Cicero, Quintilian, Seneca, and Pliny; to Herodotus, Xenophon, and Plato; to the histories of the Roman Empire and the Fathers of the Church.<sup>4</sup> His universal and assiduous reading made him knowledgeable in almost every field. Leibniz tells us that history, poetry, and logic were among his earliest interests:

Before I reached the school class in which logic was taught, I was deep into the historians and poets, for I began to read the historians almost as soon as I was able to read at all, and I found great pleasure and ease in verse. But as soon as I began to learn logic, I was greatly excited by the division and order of thoughts I perceived in it. I immediately noticed, to the extent that a boy of 13 could, that there must be a great deal in it. I took the greatest pleasure in the predicaments, which seemed to me the official mold of all the things in the world, and I turned to all kinds of logics to find the best and most detailed form of this list. (G VII 516)

During his lifetime, Leibniz produced treatises of great value on the widest possible range of subjects.

The extent of Leibniz's work can be glimpsed by looking at Louis Dutens' eighteenth-century edition of Leibniz's corpus, still the only complete work to represent all of Leibniz's interests.<sup>5</sup> Dutens' six volumes are as follows: [I] theology, including essays on the Trinity, original sin, the love of God, the Eucharist, the status of unbaptized children, religious tolerance, piety, the reuniting of Catholics and Protestants, and the problem of evil; [II] philosophy, with treatises on logic, metaphysics, and epistemology,<sup>6</sup> and natural philosophy, including works in general physics (on the barometer, magnets and the generation of ice), chemistry (the history of the invention of phosphorus and the desalination of water), medicine, botany, and natural history; [III] mathematical works, with essays on the differential calculus, optics, Descartes' law of conservation of motion, projective motion and acceleration, conic sections, various transcendental curves, infinite series and infinitesimals, binary numbers; [IV] Chinese history and philosophy,<sup>7</sup> history and antiquities, including Leibniz's collection of documents for the History of the House of Brunswick, letters on calendar reform, and on the origin of the French and German nations, and jurisprudence; [V] diplomatic correspondence and philological works, including letters on the formation of scientific societies and to various librarians; [VI] philological correspondence and etymological works.

Leibniz's far-reaching interests render the biographer's job extremely difficult. Consequently, some biographers have decided that it is impossible to make sense of his career chronologically. For example, Fontenelle states:

In somewhat the same way that ancients could manage simultaneously up to eight harnessed horses, Leibniz could manage simultaneously all the sciences. Thus we need to split him up here or – speaking philosophically – to analyze him. Antiquity made only one person from several Hercules; we will make several savants from only one Leibniz. Another reason that determines us not to follow the customary chronological order is that he wrote about different matters during the same years and that this almost perpetual jumble, which did not produce any confusion in his ideas, these abrupt and frequent transitions from one subject to another completely opposite subject, which did not trouble him, would trouble and confuse the history.<sup>8</sup>

Difficult as it might seem, the chronological approach is best, since it is most appropriate for presenting the development of his thoughts. It

is now standard to divide Leibniz's career into four periods, roughly corresponding to his various employers and his locations: (1) childhood, from 1646 to 1667, with Leibniz residing mostly at Leipzig and Nuremberg; (2) first steps in politics, theology, and philosophy, from 1667 to March 1672, with Leibniz residing in Frankfurt and Mainz; (3) the Paris Period (including trips to London), from March 1672 to November 1676; (4) Hanover, from 1676 to his death in 1716. It should be noted that historians of philosophy tend to concentrate on this last period at Hanover, that is, Leibniz's mature philosophical period, from the *Discourse on Metaphysics* [1686] and the subsequent correspondence with Arnauld, to the *Monadology* and *Principles of Nature and Grace* [1714]. This last period can itself be subdivided into five others: (4.1) Hanover, under Duke Johann Friedrich (1676–79); (4.2) Hanover, under Duke Ernst August (1680–87); (4.3) trip to Southern Germany, Austria, and Italy (November 1687–July 1690); (4.4) Hanover, under Elector Ernst August (1690–98); and (4.5) Hanover, under Elector Georg Ludwig (1698–1716). I will consider Leibniz's life and works chronologically according to the above divisions and subdivisions. But since this is a biographical chapter to a book on Leibniz's philosophy, broadly interpreted to include his theology, philosophy of language, physics, psychology, as well as the more traditional areas of metaphysics, theory of knowledge, logic, and ethics and political philosophy, one can expect that philosophy will be given fuller treatment in the chapters that follow. Thus, I intend to pay particular attention to some of Leibniz's more unusual interests.

### 1 LEIPZIG AND NUREMBERG, 1646–1667

Leibniz attended university from ages fourteen to twenty-one, first at the University of Leipzig in Saxony (1661–66) and then at the University of Altdorf in the territory of Nuremberg (1666–67).<sup>9</sup> His studies were directed toward jurisprudence and philosophy. Apparently, he was refused the doctorate of Law from Leipzig because of his youth, though there is a story that the Doctorate was blocked by the Dean of the Faculty under the influence of his wife whose ill-will Leibniz incurred. Be that as it may, he received a Doctorate the next year at Altdorf. The thesis he defended was entitled *De casibus perplexis in jure* (*On Difficult Cases in Law*). It was published subsequently with two other small Leibnizian treatises on law.<sup>10</sup>

Another story from the same period illustrates much about Leibniz's intellectual milieu in the 1660s; the story is also interesting because of what it reveals about Leibniz, who was willing to repeat it. When he was at Altdorf, Leibniz went to Nuremberg to see some scholars who told him about a secret society of alchemists seeking the philosopher's stone. Leibniz decided to profit from this opportunity and learn alchemy, but it was difficult to become initiated into its mysteries. He proceeded to read some alchemical books and put together the more obscure expressions – those he understood the least. He then composed a letter that was unintelligible to himself and addressed it to the director of the secret society, asking that he be admitted on the basis of his great knowledge, of which the letter was proof. According to the story, no one doubted that the author of the letter was an adept alchemist or almost one; he was received with honor into the laboratory and was asked to take over the functions of secretary. He was even offered a pension.<sup>11</sup>

During this same period, he met the Baron Johann Christian von Boineburg, Minister to Philipp von Schönborn, the Elector of Mainz. According to one story, they met by chance while Leibniz was dining at an inn in Nuremberg; according to another, Leibniz was introduced to Boineburg by one of the alchemists. Boineburg recognized Leibniz as a young man of great promise and talent, and although Leibniz had an invitation to join the faculty at the University of Altdorf, he chose instead to go into public service. Under Boineburg's patronage, Leibniz entered the service of the Elector of Mainz and occupied a number of positions in Mainz and nearby Nuremberg. There he stayed until he was sent to Paris in the spring of 1672 on diplomatic business, a trip that deeply affected his intellectual development.

#### II. FRANKFURT AND MAINZ, 1667–1672

Leibniz's first publications, other than his university theses and dissertations, concerned politics and jurisprudence. In 1669, under the assumed name of Georgius Ulicovius Lithuanicus, Leibniz wrote a treatise about the Polish Royal succession.<sup>12</sup> When John Casimir, King of Poland, abdicated his crown in 1668, the Palatine Prince, Phillip Wilhelm von Neuburg, was one of the pretenders. Leibniz

argued that the Polish Republic could not make a better choice than von Neuburg.

That same year, he dedicated to von Schönborn a new method of learning and teaching jurisprudence, *Novae methodus discendae docendaeque jurisprudentiae*. He appended to the work a list of what was missing in the law, the *Catalogum desideratorum in jure*, and promised to supply it. He also published a description of his project to reform all of German law, the *Ratio corporis juris reconcoecivendi*. In the latter work, Leibniz claimed that the various topics of law were in great confusion – German law consisting of a mixture of the Roman code, traditional Germanic common law, and the statute and case law of the various German states. Leibniz sought to rearrange and reshape the law, introducing order by defining all legal concepts in terms of a few basic ones and deducing all specific laws from a small set of principles – clearly an enormous and overly optimistic task.

In 1670, Leibniz, aged twenty-four, published his first philosophical work. Marius Nizolius of Bertello (in the state of Modena) had published a treatise, *De veris principiis, et vera ratione philosophandi contra pseudophilosophos* (On true principles, and the true method of philosophizing against the false philosophers) in 1553. Nizolius' "false philosophers" were all Scholastics, past and present. The main theme of the book was that the technical Latin of the Scholastics had corrupted philosophy; that anything incapable of being described in simple terms in the vernacular should be regarded as nonexistent, fictitious, and useless. Nizolius attacked the Scholastics' alleged monstrous ideas and barbarous language, even treating Saint Thomas Aquinas as one-eyed in the land of the blind. According to Nizolius, the centuries of admiration given Aristotle proved only that scholars were fools. By the seventeenth century, the book had fallen into oblivion. Upon Boineburg's instigation, Leibniz published it with a preface and some notes and used the occasion to show off his general erudition and knowledge of philosophy.

In the preface, one sees an unusual kind of editor and commentator, one who does not attempt to praise the work or excuse its deficiencies: "the errors of Nizolius are many and great," wrote Leibniz. He praises Nizolius, but only because of the courage of his enterprise and whatever truths he may have perceived at the time. He points out Nizolius' invalid reasoning and defective doctrines.

Leibniz chastises Nizolius for his excesses and orthodoxy against Aristotle who, Leibniz claims, is not blameworthy for the faults of his alleged disciples. In the "Letter to Thomasius," which he printed as an appendix to his preface,<sup>13</sup> Leibniz went so far as to say that he approves of more things in Aristotle's book on the *Physics* than in Descartes' *Meditations*. The project must have appealed to Leibniz because of Nizolius' theme of philosophizing in the vernacular and his nominalism, both of which, Leibniz claimed, were virtues to be found in the works of the modern reformers – and Aristotle – but to a lesser degree in the works of the Schoolmen. The subject of nominalism provided Leibniz with the opportunity to expound upon the nature of universals and the general rule, "entities must not be multiplied without necessity."

Leibniz also published his first work in natural philosophy during the same period. In 1671 he published his *Hypothesis physica nova*, a two-part treatise. He dedicated the first part, the *Thesis motus abstracti*, to the Académie des Sciences de Paris and the second, the *Thesis motus concreti*, to the London Royal Society. The former is an abstract theory of motion along the lines described in Leibniz's Letter to Thomasius (appended to the Nizolius edition) and, on the whole, is derived from Cartesian and Hobbesian sources; in the latter Leibniz attempts to apply the abstract theory. In this early work, Leibniz accepts the void and defines matter as simple extension. He argues that there is an actual infinity of parts in the division of the continuum, against the indefinite of Descartes, which he terms an imaginary concept. Leibniz's critique of Descartes' conservation of quantity of motion seems already well developed in the work, but he has not yet arrived at his fundamental concept of force, basing his analysis of motion on *comatus*. That *comatus* is not force seems to be indicated by Leibniz's conclusion that a body cannot be without motion, for it would then be indistinguishable from space.

Leibniz's other activities during the period included his duties as librarian. He put together a catalogue of books, based on Brineburg's library, as a model for other libraries. Moreover, he proposed something he called a *nucleus librorum*, a list of books to help librarians in selecting works, but did not receive a license to proceed with the project.

One of the principal political problems Leibniz set out to resolve was the French threat. Germany had been seriously damaged by the

Thirty Years War. Leibniz came up with various schemes to weaken French power by weakening its economy. He published anonymously a biting satire on Louis XIV called *Mars Christianissimus* (Most Christian Mars), that is, Most Christian War-God, referring to the king's imperialism:

There will be some who will imagine that His most Christian Majesty would do better to begin his beautiful designs by routing the Turks than by afflicting the poor Christians; but those people do not reflect at all that it is the Germans and the Flemish who live on the frontiers of France and not the Turks, that one must pass from one's neighbors to people far away, and move in these matters by solid degrees rather than by vain and perilous leaps.<sup>14</sup>

As part of his overall strategy, he devised a plan to distract Louis away from Northern Europe by enticing him into attempting the conquest of Egypt – a new crusade against the infidels. Bosneburg seemed impressed with the plan and sent Leibniz to Paris to present it to the French government. The occasion to do so did not arise, but Leibniz spent some years in Paris and visited London as a consequence.

### III. PARIS AND LONDON, 1672–1676

The intellectual world of the late seventeenth century was in great tumult. Aristotelian philosophy had dominated European thought since the thirteenth century when the bulk of the Aristotelian corpus was rediscovered and translated from Greek and Arabic into Latin. But much had happened by Leibniz's time. New doctrines had emerged from Galileo and his students, Torricelli and Cavalieri, from Descartes and his followers, from Gassendi, Pascal, Hobbes, and from countless others. Although Galileo was condemned by Rome in 1632 and Descartes' works were put on the *Index of Prohibited Books* in 1663, a new philosophy was taking hold; the substantial forms and primary matter of the Schoolmen were giving way to a new mechanist world of geometrical bodies or atoms in motion. With this new world came mathematical tools for dealing with the newly conceived geometrical bodies. Old problems were raised anew, including problems of necessity, contingency, and freedom: in a world of atoms governed by laws of motion. Other problems con-

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