

## Remote Learning Module for 30 March 2020

### Lecture Notes: Leibniz, his Life & Times

Gottfried Wilhelm Leibniz was probably the last great universal polymath to grace Planet Earth. He was a first-rate mathematician (calculus & combinatorics) and a logician of the highest rank (symbolic logic), built one of the first mechanical calculators, and contributed importantly to astrophysics, problem of determining longitude at sea, terrestrial physics, biology, optics, chemistry, metallurgy, and mining technology. He was a prominent theologian (known as “The Great Conciliator”), and, of course, a renowned philosopher. He was intimate with the royalty of Europe: close friends with Sophie Charlotte, Duchess of Hanover (his pupil) and her sister, Princess Elizabeth of Bohemia (his confidant, and critic of Descartes), and admired by Peter the Great. Over the course of his life, Leibniz corresponded with over a thousand people in eight languages. And yet, only a fraction of his 150,000 pages of manuscripts has been edited to this day.

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#### (1) Philosophical Agenda.

Several themes run through Leibniz’s thought over the course of his forays into philosophical speculation, with commitments to the following among the more prominent:

- (a) The Principle of Sufficient Reason
- (b) An Aristo-Cartesian definition of substance
- (c) Mathematics as the ideal form of knowledge
- (d) A Teleological Universe: the Best of All Possible Worlds, and
- (e) God as a separate, transcendent substance.

He brings these themes to bear against both Descartes’ dualism and Spinoza’s monism, arguing that both leave an unbridgeable gap between physics and psychology (especially moral psychology). Likewise, he argues against Locke’s empiricism and Newton’s mechanism.

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#### (2) Young Leibniz.

Born July 1, 1646 in Leipzig (celebrated center of Lutheran studies at that time), Leibniz was 14 years Spinoza’s junior. His father, Friedrich, was vice-chair of faculty and professor of moral philosophy at the University of Leipzig; Friedrich died when Gottfried was barely six years of age, and the young boy missed him deeply. In 1653, Leibniz entered school at 7 years old. He taught himself Latin from an illustrated edition of Livy’s monumental history of ancient Rome (*Ab Urbe Condita Libri*); seven years later, at 14, he entered the University, where he studied the works of Aristotle and Plato, wrote “On the Principle of Individuation (first of his philosophical studies) at 17, and chose law for advanced study.

In 1664, at age 18, Leibniz's mother, Catherine Schmuck, died; his uncle proceeded to rob him of his patrimony, whereupon Leibniz found himself on his own. Preparing himself for pursuing his doctorate, he wrote a treatise on Roman Law, and his rediscovery of symbolic logic, the *Ars Combinatoria*. Apparently sabotaged by the jealousy of his teachers, he was unable to secure his doctorate in 1666, and fled Leipzig, never to return. A year later, he received his doctorate from the University of Nuremberg, in Law. His dissertation, the *New Method of Juridical Inquiry*, represents the first use of historical method for looking at the development of both common and statutory law. In the same year, Leibniz met Johan Christian von Boineburg (at a meeting of an alchemical society in Nuremberg), First Minister to the Elector of Mainz, who gave the young Leibniz his first job, which required Leibniz to move to Frankfurt; on the way, scribbling away in his carriage, he penned the *New Theory of Jurisprudence*, a revision of his dissertation, for publication. Working for Boineburg, Leibniz produced a treatise on the question of the Polish Succession, whereby he hoped to ensure that a German would receive the promotion; the gambit failed, but it got Leibniz noticed, and he soon became Privy Councilor of Justice to the Elector of Mainz; at 24 Leibniz was the ultimate insider.

In 1670, he began his correspondence, intent on entering the best intellectual society of the day. He wrote first to Hobbes (who declined to reply), and then to Arnauld and Henry Oldenburg, among other members of the Royal Society. In the same year, he produced his *New Physical Hypotheses*. Louis XIV was in this year on the rampage in the Lowlands; Leibniz's advice to the German League was to conscript an army of at least 20,000 troops—advice that went unheeded. Later in the year, Louis invaded the Netherlands with a force of 20,000. The following year, Leibniz concocted his “Egypt Plan,” whereby he hoped to sell Louis on the idea of invading Egypt to launch a New Crusade (thereby distracting Louis from further incursions into German territories) in pursuit of Leibniz's new dream of a creating a *respublica Christiana*—a theocracy founded on Reason (notably not just for peace and security, but also to alleviate poverty and to stimulate the economy of all Europe). The main goal this project was the reconciliation of sectarian difference among Christians. Leibniz's approach to the problem of accommodating the Catholic doctrine of transubstantiation (whereby the bread of the Eucharist is transformed by sacrament into the very body and blood of Christ) is of considerable interest: Leibniz argued that since mechanism is false, the Catholic view is *not* logically impossible (recall Descartes' similar handling of the problem of the immortality of the soul). He presented his case in the form of a legal brief.

Not busy enough, on the 5<sup>th</sup> of October, 1671, Leibniz sent off his first letter to Spinoza, having recently read the latter's *Tractatus Theologico-Politicus*. However much Leibniz denounced Spinoza's naturalism and monism in public, he poured over Spinoza's arguments in the TTP in private, writing later that month to Wederkopf, “... nothing happens in nature that does not follow from universal laws.” At this point, Leibniz takes the central task of his philosophy to be showing that the Principle of Sufficient Reason does *not* lead to Spinozism.

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**(3) Paris: Leibniz's Golden Years.**

In 1672, Leibniz moved to Paris in hopes of selling his Egypt Plan to Louis XIV. He failed. The French invaded Holland instead. The Dutch managed to stave off the onslaught by opening the dikes, but civil unrest, promoted by the House of Orange, ensued at The Hague, and the DeWitt brothers were assassinated, eventually leading to the collapse of the Dutch Republic.

In Paris, Leibniz finally came to intellectual prominence; he met and conversed with Malebranche, Arnauld, Huygens, and Oldenburg, and surrounded himself with all the trappings of success. Note that when Descartes was born, there were but 8 horse-drawn carriages in all of Paris; when Leibniz arrived there in 1672, there were 20,000. It was also in this year that Leibniz built his first mechanical calculator. Boineburg died later in the year, leaving Leibniz with instructions to return to Mainz, where the Duke of Hanover had a job for him. But Leibniz, loathe to return from a world of opulence, vanity, and elegance, started a law practice, and constructed a spy network. In his spare time, he brushed up on the latest mathematics of the day, and soon left all the great minds of his generation in the dust. In 1675 (his *annus mirabilis*), Leibniz invented integral calculus (in October) and differential calculus (in November), after stimulation from Tschirnhaus (his new best friend and disciple of Spinoza). Although Spinoza warned Tschirnhaus not to share drafts of the *Ethics* with Leibniz (whom Spinoza worried was a spy), Tschirnhaus couldn't resist. Leibniz's notebooks then filled with new ideas: God is Substance, all creatures are modes, mind is the idea of the body, and there is no free will. Within days, he planned to write his own *Elements of a Secret Philosophy of the Whole of Things, geometrically demonstrated* (his alternate titles were *The Secrets of the Sublime* and *De Summa Rerum*). This work is a rambling congeries of speculations, shot through with Spinozism; eventually, though, Leibniz hit a wall, writing, "God is not nature, fate, fortune, necessity, the world. Rather, God is a certain Substance, a person, a mind ... it must be shown that God is a person, an intelligent substance." It is at this very point in his reflections that Leibniz launched his mature project for metaphysics: to show that God is the Great Decider—a decision-maker who faces options and makes choices.

By April, Leibniz seems to have rejected his excursions into Spinozism thoroughly, but all the same, he remained obsessed with Spinoza's powerful reasoning. He was also late for work. He managed to stall his retreat to Hanover until October, when, on the 4<sup>th</sup>, he sailed for London to meet Oldenburg, and deliver his calculator to the Royal Society. He then left on the 29<sup>th</sup>, arriving in Amsterdam on the 11<sup>th</sup> of November, where he met with a number of Spinoza's disciples (Schuller, Hudde, Meyer, and Jelles); he met Leeuwenhoek in Delft a short time thereafter. He met Spinoza in The Hague on the 18<sup>th</sup>, and the two had conversations over the course of several days. Leibniz kept a short record of these conversations, but we have nothing from Spinoza. Leibniz says in this note of recollection that he framed the Principle of Sufficient Reason as follows: "A perfect being must have a reason to exist—it must be from within—the reason for God *is* God." This formulation has a strong air of Spinozism about it, but in Leibniz's mind it deviated from Spinoza's equation, *Deus sive Natura*. Instead, or so Leibniz reports, he presented to Spinoza a two-step proof for the conclusion that "a most perfect being exists." The argument is indeed simple: assuming that the concept, "most perfect being," is free from contradiction, the first premise is that a most perfect being is possible; the second premise is that there must be a sufficient reason for this possibility. The conclusion is that a most perfect being

is therefore necessary. Leibniz claims that Spinoza, though resistant at first, eventually accepted the demonstration; we have only Leibniz's word for this, however.

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#### **(4) After Meeting Spinoza.**

Leibniz finally arrived in Hanover on the 12<sup>th</sup> of December, and immediately took up his duties as the ducal librarian, charged with cataloguing over three thousand books, which he promised to supplement with correspondence from across Europe on topics ranging from natural theology and jurisprudence to physics and mining techniques. He also proposed a vast variety of projects for the Duke, including the provision of music, dancing, and good beer for farmers. He launched a number of his own projects at this time as well, with business ventures into textiles, the production of phosphorous, the distillation of brandy, and the spice trade, none of which amounted to much profit at all. He then took up silver mining, for which he devised a new windmill pump that, he claimed, would pump water from over a thousand feet underground.

Shortly after arriving in Hanover, Leibniz took stock of his recent conversations with Spinoza, writing, "If all possibles were to exist, there would be no need of a reason for existing, and the mere possibility would be enough ... so there would not be a God, except insofar as he is possible. But a god of the pious would not be possible if the opinion of those who believe all possibles exist were true." Note that the view that "all possibles exist" amounts to Spinoza's Principle of Plenitude, as presented in Part I of the *Ethics*. Probably with this concern in mind, Leibniz wrote Schuller, hoping to set up another meeting with Spinoza and to debate the question of plenitude (recall that Spinoza's principle says that actuality exhausts possibility, or that whatever is not actual is impossible). But within roughly two and a half months Spinoza died (21 February 1677). By the year's end, Spinoza's friends managed to avoid detection, and to publish the *Opera Posthuma*. Leibniz filled the margins of his copy with criticisms (and not a little spleen); the point of his repeated worries: that everything is absolutely necessary.

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#### **(5) The Windmill & Later Works.**

In 1679, Leibniz was awarded a contract by the Duke to build his windmill. Between 1680 and 1686 Leibniz made no fewer than 31 journeys to the Harz Mountains to see to the project; his letters during this period eclipsed all of his other concerns. Nevertheless, the enterprise failed: Leibniz did not get along with the miners; and there wasn't much wind.

In 1686, caught in a blizzard while returning from the mountains, Leibniz returned his attentions to philosophy, and in short order produced the *Discourse on Metaphysics*. His stated intention in this work was two-fold: to advance his project for sectarian unification, and to refute Spinozism. It is in the *Discourse* that Leibniz first formulates what he takes to be the task of metaphysics: to explain why the world is just *this way* rather than some *other way* it might have been. His answer is: God; God must have an intellect, contemplate options, and make choices, making this the best of all possible worlds. Note well that his contention is not that God chooses among possible things/events in one world, but that God chooses among possible whole worlds. One

way to get a grip on this reasoning is to note that from a geometrical point of view, flat space, parabolic space, and hyperbolic space are entirely consistent with each other; and yet, from a physical point of view our universe is curved according to the equations of General Relativity. If we are prepared to accept the Principle of Sufficient Reason, then there must be a reason why real space is curved in just the way Relativity says it is, and not some other way it might have been, from a geometrical point of view. For Leibniz, this means that The Great Decider must have selected just this world from among the other equally consistent possibilities.

In the 1690s Leibniz worked up his theory of the plurality of substances, the theory that he finalized in the *Monadology*. In 1697, egged on by Edmund Haley (of comet fame), Newton complained to the Royal Society that Leibniz must have plagiarized his calculus from Newton. Scholars today are in agreement that this charge was spurious. Nevertheless, after much ado, the Royal Society upheld the plagiarism case against Leibniz, who apparently was for the most part unfazed. He was, however, quite critical of Newton's physics (contending that Newton's notion of absolute space was a "monstrous un-thing") and Locke's empiricist epistemology (contending that Locke left open the possibility that matter might think, a view Leibniz found intolerable).

In 1714, the reign of the Stuart Dynasty in Britain came to an end. Duchess Sophia Charlotte's child, by Ernst, the Elector Prince of Hanover, Georg Ludwig, became King of England (recall that Sophia was Leibniz's pupil). In 1715, writing to Sophia, Leibniz initiated what has become known as the Clarke-Leibniz Debates (Clarke being Newton's mouthpiece); Leibniz starts the business by worrying that Newton's physics leads to atheism, since if gravitation (action at a distance) explains planetary motion, then matter can move itself without mind-like direction, which in turn, Leibniz argued, as he had against Locke, implies that matter might think, thereby leaving the promise of immortality unfulfilled. This stir did not go well for Leibniz; even worse, his critics began accusing him of Spinozism. In sort, Leibniz was an embarrassment to the new King, who, upon taking up residence in London, left Leibniz behind, charged with completing the genealogy of the Hanoverians which Leibniz had begun years earlier. He was effectively under house arrest. Undeterred, however, Leibniz skipped town, travelling to Vienna and Berlin, along the way writing the *Monadology* and *Principles of Grace*.

Early in November of 1716, he took sick; his hands and shoulders seized up, and he died in his sleep. His funeral rights were meager.

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On Wednesday, we'll turn our attention to Leibniz's physics and theory of perception. Be well everyone, and remember: social distancing saves lives, which is presumably why we are still not in JUB 202 presently.