Leibniz's 'Community of Common Destiny'

by William Jones

I am not one of those people who are solely fixated on their fatherland or any particular nation, but I concern myself with the good of the entire human species, because I consider heaven my fatherland and all well-intentioned citizens as fellow citizens. And I would rather accomplish much good in Russia, than little in Germany or some other European nations … For my inclination and desire is concerned with the common good.

— Gottfried Leibniz to Peter the Great

Gottfried Leibniz (1646-1716)

Feb. 26—The launching by China's President Xi Jinping in September 2013 of the Silk Road Economic Belt, and a month later the 21st Century Maritime Silk Road, initiated a new era in human history. The Belt and Road, as it is now called, for the first time in decades calls for the development of the former colonial world and the elimination of poverty. And this is not simply a commitment in words, but is backed up by a major, multi-billion dollar infrastructure program that will take us through the next 30 years. The fact that China, as the country which has succeeded in bringing more people out of poverty than any country in the world, was the initiator of the project, has engendered great enthusiasm among other countries to cooperate in this endeavor.

But what lies behind the initiative is more than a simple development program. It is rather an attempt to pull the world away from the insanity of geopolitical conflicts toward a world order in which countries work together for the common good, creating a "community of common destiny," as President Xi has sometimes said. A look back at earlier attempts to create such a world by the great scientist and thinker Gottfried Leibniz—in the chaotic world of the 17th century—can perhaps give us a better understanding of the nature of the proposal being mooted today, as well as an understanding of the pitfalls this attempt is facing.

Out of the Rubble of War

The words of Gottfried Leibniz, quoted above, indicate the outlook of a man who was unusual for his time, indeed it is an outlook that is quite unusual for our time as well, and has been represented by only a handful of political leaders in this century, of which the economist and statesman Lyndon LaRouche is one. Leibniz was at the same time a patriot of his nation and a citizen of the world, as his countryman Friedrich Schiller would express it later in the century.

In his attempt to resolve the religious rancor that still gripped Europe in the aftermath of bloody religious war, Leibniz' gaze looked far beyond his country's borders in seeking a solution. And in doing so, his life and work had repercussions throughout the world, in Russia, in Asia, and indeed in North America. Our own Benjamin Franklin, active as a scientist and diplomat for the young American Republic in Eighteenth Century Paris—where the thought of Leibniz was still very much debated and discussed among Franklin's friends—could not help but be influenced by it. In seeking a new paradigm to replace the paradigm of conflict, war, and oppression that had gripped Europe for three decades, Leibniz had to embrace the entire world.

Leibniz was born in 1646. The Peace of Westphalia, signed two years later, concluded the bloody conflict of the Thirty Years' War. There were an estimated eight million casualties in that war, which had left total devastation in the heart of Europe. Famine and disease had significantly decreased the populations of Germany, Bohemia, the Low Countries, and Italy, and most of the governments were bankrupted. Entire regions were left barren, denuded by the movement of the armies.

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Map of Eurasia, c. 1730, by J.C. Homann. China in light blue. Europe, from the North Sea to the Urals, shown as a single entity.

It was in the environment of the recovery following this tremendous devastation that the young Leibniz grew up. While the Peace of Westphalia of 1648 succeeded in stopping the conflict by putting the notion of "the good of the other" at the center of the diplomatic resolution, Leibniz always sought to find a more permanent and higher-order resolution in a unity of the different religions—and nations—around a concept of the common good. While raised a Protestant—and always remaining Protestant—he initiated and engaged in a wide-ranging dialogue with representatives of many nations and different religions in striving to attain this unity.

While trained as a lawyer, his great interest was in philosophy and mathematics, indeed, Leibniz was the epitome of the great polymath, whose true slogan could have been *nihil humanum mihi alienum est*—nothing human is alien to me. His contributions in science, mathematics, geology, economics, and astronomy were a crucial element in the rapid developments in science during the Seventeenth Century. During the course of his illustrious career, Leibniz came into contact with most of the leading lights of his day, of which he soon would become one of the brightest. But his fundamental concern was for the good of humanity, and with the need to improve the lot of mankind through the continuous development and proliferation of scientific knowledge and technological innovation, and to this goal he devoted his utmost efforts.

Leibniz ended up in the employ of the Duke of Brunswick-Lüneburg, one of the smaller kingdoms in the northwest of Germany, a service which often imposed on him rather mundane tasks, far below his tremendous capabilities and his interests. While he worked to introduce technological innovations on the Duke's estates, his real work was often conducted at night, in the massive correspondence he conducted with scientists, scholars, and political figures around the world. One of these more mundane tasks was writing a history of the house of Brunswick-Lüneburg (a task which he never fully completed). But it gave him the opportunity to travel to European capitals, ostensibly to do archival research in pursuit of that history.

While many of his aristocratic employers had little concern for his broad intellectual pursuits, there were two major figures who were both supporters of his work

and his confidantes, Electress Sophie of Brunswick, the wife of his employer, the Elector of Brunswick, and her daughter, Sophie Charlotte, later to become the Queen of Prussia. During a stay of several years in Paris in the service of Johann Christian von Boineberg, a privy councillor of the state of Hesse, Leibniz also established close contacts with the leading scientific figures in Jean-Baptiste Colbert's newly formed Royal Academy of Sciences in Paris, of which he would ultimately become a member. Among these was Christiaan Huygens, his senior by twenty years, who became a mentor and collaborator of the young Leibniz.

The discovery of the New World by Christopher Columbus had raised a series of interesting questions that were still unresolved in Leibniz' time. Was this new continent connected in any way with the Eurasian heartland? While Vasco Nuñez de Balboa had already discovered the Pacific Ocean, marking off North America as a continent, it was not clear if that ocean separated the two continents entirely. Most of North Asia still remained unexplored territory. This was a question that piqued young Leibniz' curiosity.

Peter the Great, by Godfrey Kneller, 1698.

The Crucial Role of Russia

With the accession of young Peter I to the Russian throne in 1682, Leibniz became aware of the new Czar's intention to bring feudal Russia into the modern era by introducing the scientific and technological advances developed in western Europe. Learning of these "heroic intentions" of the young Czar, Leibniz began looking for an opportunity to consult with Russia's new master.

His interest in Russia was also stimulated by the manifold languages found in the vast expanse of the Russian Empire, including parts of the ancient Scythian region. Even in the midst of intense discussions about politics and diplomacy, Leibniz would always ask for more light to be shed on linguistic and philological matters. He was always searching for the origins of the peoples of central Europe, most of whom had come out of Central Asia and the ancient land of Scythia. He thought that a thorough knowledge of the languages of these early settlers in the region would give him a better understanding of the ethnography of the nations of Europe.

Finally, it was Leibniz' budding interest in China that helped feed his interest in the new Russian Czar. He considered Russia as the bridge between China and the East.

There was also an important political aspect to this project. The sea route to the East was increasingly dominated by the Dutch and English. The Dutch trading power had grown and had begun to replace Portuguese dominance in the Far Eastern trade. The Dutch were also preventing the Jesuit missionaries—sent first by Portugal to the Chinese empire, to seek conversion of the people to Christianity—from landing at Goa (India) and Macau, near Hong Kong. The other nations of Europe, apart from the English, would be effectively shut out of this important trade unless a land route could be found. And the most direct land route from Europe would be through Siberia. But the new Czar showed great reluctance to open up such a route, desirous of maintaining full control of Russia's trade with the East. Leibniz thought that he could overcome that resistance.

Russia was also of great importance for Leibniz in his attempt to overcome the religious disputes which still lingered on in Europe, in spite of Westphalia. The weakness of the German states and the expansive nature of Catholic France under Louis XIV—particularly the French attempts to place a Bourbon on the Spanish throne—were roiling the uneasy post-Westphalia equilibrium between the religions. In 1685, Louis had revoked the Edict of Nantes that had allowed the French Protestant Huguenots to live and work in France, forc-

ing them to leave their country.

Leibniz believed that a growing role for Orthodox Russia in Europe, particularly if it were built on a close collaboration with the German Protestant states, would help maintain a certain political equilibrium that might prevent a future conflict from developing across the Catholic-Protestant divide. And if such a conflict did occur, an alliance with Russia could provide an important military mainstay for the disparate forces in Germany.

Ferdinand Verbiest, appointed director of the Bureau of Astronomy by Emperor Kangxi.

There were also considerable scientific benefits, which would flow from the scientific and economic development of the Russian empire, particularly the development of Russia's Far East. Establishing the contours of the northern and eastern regions of Russia and determining whether or not there was a land connection to North America would be an important scientific advance. It was also important to begin cataloging the mineral resources of the region for future exploitation. Important experiments could be conducted in the Arctic with regard to the Earth's magnetic field and changes in it over time, to achieve a more exact calculation of longitude, which would be of tremendous benefit for navigation and shipping.

Leibniz' early exposure to China came primarily through the works he had come across in his library research and from his growing correspondence with Jesuit missionaries and others who had traveled to China. But even at the age of 22, he had felt that China possessed greater knowledge in medicine than what was available in the West. He also felt that the Chinese were much more advanced in philosophy. To establish an intellectual and philosophical connection—"commerce of light" between East and West, as Leibniz dubbed it—the role of Russia was crucial.

France Launches China Science Mission

While the Jesuits were a Catholic teaching and missionary order, they put a great deal of emphasis on developing the study of the natural sciences. In contrast to much of the Tridentine church reforms, which often stressed the tenets of faith more than, or even contrary to, the works of reason, the Jesuits effectively combined the two, treating the study of nature as "reading the book" which the Creator had written. In their missionary work in China, which began in 1579, this orientation proved to be invaluable, since the advances of science in the West from the time of the great Renaissance were largely unknown in the East, and there was a growing interest in these advances among Chinese intellectuals as they began to sample some of them through the mediation of the Jesuit missionaries in the Sixteenth Century.

The Jesuit mission in China had been largely under the auspices of Portugal from the beginning. From the outset, the Jesuits aimed to convert some of the leading intellectual and political circles in China, estimating that if they could convert the leading figures, the people would soon follow. So their emphasis was always on sharpening the scholarly aspect of their work in order to gain and maintain a foothold in China. Their work required them to learn the Chinese language with sufficient fluency to read the Chinese classics, a necessary prerequisite for understanding the outlook and thinking of the Chinese intellectual elites and thus for earning their respect.

Under the Italian Jesuit, Matteo Ricci, the mission successfully adapted to the customs of the Chinese elites, putting aside their cassocks and donning the garb characteristic of Chinese intellectuals. And they were armed with the most advanced technologies coming out of the great Renaissance, with the goal of introducing the benefits of modern science to the Chinese court.

Beginning in the early Seventeenth Century, Jesuits were assigned to lead the work of the Chinese Bureau of Astronomy. Father Ferdinand Verbiest, a Belgian Jesuit and an excellent astronomer, had become a tutor of the young Emperor, Kangxi (reigned 1661-1722), and had been appointed the head of the Bureau. Seeing the need for a stronger scientific component of the mission in order to maintain the Jesuits' favorable status in the country, Verbiest sent Father Philippe Couplet to Europe in 1678 to recruit more Jesuit scientists. This initiative met with a positive response from the French King, who was eager to establish contacts in India and

China to promote French participation in the Far Eastern trade and to break the monopoly of the Dutch and Portuguese.

In 1684, François-Michel le Tellier, the Marquis de Louvois, successor to Colbert as the head of the Royal Academy of Sciences, asked the leader of the Jesuits in France for six learned men. They met at the Academy with astronomer Giovanni Domenico Cassini, the director of the Observatory of Paris, and Philippe de la Hire, a French mathematician and correspondent of Leibniz.

Giovanni Cassini of the Paris Observatory provided guidance to the astronomer team.

Cassini was intensely interested in Chinese astronomy. At this time there was much concern regarding the accuracy of the prevalent Biblical view of the age of the Earth and what therefore seemed to be exaggerated claims of the long span of Chinese culture. One way to determine the issue would be to compare the results of ancient Chinese astronomy, which had been the most advanced in its time, with that of Western astronomy. Comparing the observations of the ancient astronomers with those of the present could help determine the period of time that had lapsed in between. Leibniz was also keen on resolving this basic question.

In the course of these discussions, it was decided that the Academy would provide the assembled group of Jesuits with the necessary equipment and materials for astronomical observations. They were also instructed what observations they were to make from their Beijing Observatory as well as during their voyage to the East, with particular regard to observing the eclipses of the satellites of Jupiter, a key method of establishing longitude that had been proposed by Galileo, in which the movement of the moons of Jupiter served as a clock. The group was also assigned to investigate the flora and fauna of China and to learn other technical arts there. The Royal Academy would arrange the publication of their results in Europe and would serve as a platform for collaboration with European scientists.

The French group—dubbed "the King's Mathematicians" to avoid any conflict with the Portuguese—left Brest on March 3, 1685 under the leadership of Father Jean de Fontaney.

Although Leibniz already had many Jesuit correspondents, including the proto-sinologist and literatus Athanasius Kircher, it was the departure of the King's Mathematicians that first fired his great enthusiasm for this endeavor in the East.

Leibniz in Rome

In 1689 Leibniz traveled to Italy. He had found a connection between the house of his patron, Brunswick-Lüneburg, and the Italian Este family, both branches of the Guelf family, and used this as a pretext to visit Italian archives. Spending several months there, he established connections with all of the major academies—in Rome, Naples, Florence, Bologna, Padua, and Venice. He also visited Mount Vesuvius, which allowed him to finish his work on volcanism, geology, and natural history, *Protogaea*. It was also on his Italian tour that Leibniz began his groundbreaking *Essay on Dynamics*, which he would publish in 1695.

In Rome, Leibniz met several times with Father Claudio Filippo Grimaldi, one of the Jesuit missionaries serving in China. Grimaldi was the vice director of the Imperial Bureau of Astronomy headed by Father Verbiest, who worked directly under the Manchu Emperor Kangxi. Grimaldi had returned from China temporarily. From Grimaldi, Leibniz received a firsthand picture of the situation in China, the work of the Jesuits in promoting science and astronomy at the Imperial court, and a sense of the Emperor's character.

Having an incredible interest in things mechanical, Kangxi had granted permission for the Jesuits to remain in China and to propagate their faith. Kangxi, embodying the character of the benevolent Confucian ruler, was devoted to creating an effective state organization that would benefit his people. From Kangxi's own writings, one detects a man devoted to the service of the nation and unwilling to accept anything less from those who served under him.

Leibniz was fascinated by Grimaldi's description of the Chinese emperor and thought that he might be of much service to Kangxi in his striving to advance the

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Equatorial armillary sphere, built before Verbiest's time, at the Beijing Ancient Observatory, founded 1442. Verbiest contributed several instruments of his own construction, including an ecliptic armillary sphere.

well-being of his nation through the introduction of modern science. Grimaldi also told Leibniz about the workings of the proto-academy the Jesuits had set up at the court, often attended by the Emperor himself. Grimaldi and Leibniz also discussed scientific issues related to the astronomical observations of the Jesuits and the nature of the work done by Chinese astronomers through the centuries.

Grimaldi would leave Rome before Leibniz, to return to Beijing. Verbiest had died while Grimaldi was away, falling from a horse on one of his missions for the Emperor, and Kangxi appointed Grimaldi to replace him.

During Leibniz' stay in Italy, Pope Innocent XI died, and Leibniz delayed his departure from Rome to see the results of the conclave to elect his successor. In the process, he had time to meet with some of the assembled cardinals. While the Protestant Leibniz was viewed by some of the conservative Church leaders with some mistrust, his reputation in the "republic of letters" gave him a particular status and opened doors at the highest level among those who were devoted to the arts and sciences. Many of the prelates, including several cardinals, were happy to meet with him.

Leibniz was also keen on helping those in the Vatican who were working to get the Church ban on Copernicus' heliocentric theory lifted. While in Rome Leibniz also met with Amable de Toureil, one of the leading Jansenists, a Catholic movement that was accused of Calvinist leanings. De Toureil, under threat from the Inquisition, was living in Rome under the pseudonym Alberti. Because of the status of "Alberti," the two would only meet after dark in a café near the Piazza Navona.

While in Rome, Leibniz formulated a series of questions about China for which he hoped Grimaldi could obtain answers. How do the Chinese make silk? How do they fire their porcelain? What type of earth do they use as the material? What technique do they use to achieve the smooth texture and the colors? What medicines do they use? Do they know anything about modern geometry and metaphysics? Are they aware of the Pythagorean theorem? Do they know anything about the ends of the continent, especially in the Arctic region? What kind of windmills do they use? How do they transport large stones? What type of technology do they use in their mining? How do they make their sails? What are their agricultural techniques? Is there anything in their technology that would make life more comfortable here in Europe?

He also had many questions about the Chinese language and script, questions that would remain much of a mystery during Leibniz' lifetime.

Leibniz was anxious to know whether Grimaldi knew of the letter Johannes Kepler had written to Father Terrentius, another Jesuit who had been active in the Chinese mission earlier, and who had sent Kepler a report on Chinese astronomy and their celestial observations. Kepler corrected some of the calendrical inaccuracies of the Chinese astronomers and sent Terrentius his recently published Rudolphine Tables—allowing the calculation of planetary positions for any time in the past or future—to assist them in their observations.

The 'Propagation of Light and Wisdom'

Leibniz maintained a steady correspondence with Grimaldi and his fellow Jesuits for the next 15 years in an attempt to achieve that "commerce of light" which he felt would result from this East-West collaboration. In his initial letters to Grimaldi, he not only expressed a strong wish that the Fathers do their best to communi-

cate the scientific knowledge of the West to the Chinese, but also urged them to expend every effort to transmit the wisdom of the East to the West, fearful that when the Emperor had everything he wanted from his Jesuit interlocutors, they might be asked to leave. This was a matter to which he would continually return, with a clear foreboding that this opening to the East could quickly be closed—a foreboding which was not without some basis.

The Jesuits began teaching mathematics to Kangxi in 1689. They provided their own translation of French Jesuit Ignace-Gaston Pardies' *Elémens de Géométrie* as a textbook and composed treatises in Manchu on Western arithmetic and the geometry of Euclid. "In the early 1690s, I often worked several hours a day with them," Kangxi later wrote,

> With Verbiest I had examined each stage of the forging of cannons, and made him build a water fountain that operated in conjunction with an organ, and erect a windmill in the court; with the new group—who were later joined by Brocard and Jartoux, and worked in the Yang-hsin Palace under the general direction of my Eldest Son Yin-t'i—I worked on clocks and mechanics.

Kangxi was excited by the various clocks and models the Jesuits had brought with them, including a calculating machine invented by Blaise Pascal. Many of these objects can now be seen in the Palace Museum in Beijing.

Leibniz let his Jesuit interlocutors know that he had also developed a calculating machine which, like Pascal's, could add and subtract, but which could also multiply. He offered the machine to them for the benefit of the Emperor, but it was never sent. He felt that if the Emperor were excited by his device, he himself might be asked to come and advise the Emperor. But such an invitation never came. Leibniz was, nevertheless, quite taken by the descriptions of the Manchu Emperor. Leibniz would later write,

> The monarch … who almost exceeds human heights of greatness, being a god-like mortal, ruling all by a nod of his head, who, however, is educated to virtue and wisdom … thereby earning the right to rule.

In his correspondence, Leibniz informed Grimaldi of the latest developments in European science, including his own work on developing a binary system and the differential calculus, and his work on the catenary which, he explained, was essentially a logarithmic curve, and not—like Galileo had thought—a parabolic curve. He also reported on his notion of dynamics, which he had developed as a new concept in physical science. He described some of the latest developments in astronomy, reporting on Huygens' last work, *Cosmotheoros*, and on recent developments in optics, and on work on a submarine. He also provided incisive comments on the political situation in Germany.

Leibniz took responsibility for bringing knowledge of the work in China and of Chinese culture to the attention of the European public. In 1697 Leibniz, who rarely published his own works, took on the responsibility of publishing in Latin a compilation of material from the China missions, *Novissima Sinica* (Latest News from China), for which he wrote an extensive preface.

It contained contributions from Father José Suarez on the work and trials of the Jesuits in the Chinese Empire, an extensive excerpt from Verbiest's work on astronomy, a report on the visit of a Russian delegation to China on three different occasions, a letter from Father Grimaldi to Leibniz, and a description of developments leading up to the signing of the Treaty of Nerchinsk between Russia and China in 1689, in which the Jesuits in China played a crucial role.

When republished in 1699, the book also included a profile of Emperor Kangxi and a short essay by Father Joachim Bouvet on Kangxi's life and reign. Leibniz had translated the material into Latin in order to make it available to a broader public.

The year 1697, when *Novissima Sinica* was first published, was conveniently the year that Czar Peter began his semi-incognito tour of Europe, with the goal of working in the shipyards of Amsterdam to learn how to build ships. On his way to Amsterdam, he had to travel through Germany. Leibniz was eager to bring about a meeting with the Czar, but was not successful on this occasion. But he did have some assistance from his collaborators, the two Sophies, who succeeded in waylaying the Czar at Coppenbruegge after his visit to Berlin by inviting him to dinner. No doubt they briefed Leibniz thoroughly on their impressions, as Leibniz would give a full description of the Czar to his correspondents.

He was, however, quite upset that he wasn't able to

Leibniz' Novissima Sinica *with frontispiece of Emperor Kangxi (Cam-Hy).*

meet with him personally. Writing to the numismatist Andreas Morell, to whom he had sent a copy of *Novissima Sinica*, Leibniz wrote,

> You cannot imagine how upset I am that proper use is not being made of the presence of the Czar of Muscovy and those good intentions which he clearly exhibits, because to win and provide direction to the spirit of such a man as the Czar or the Emperor of China, and to imbue it with an eagerness for the glory of God and the perfection of man, is worth more than a thousand victorious battles; for on the will of such people, a million others depend.

He already had begun to penetrate the Czar's circle, establishing correspondence with Peter Lefort, the son of the Czar's most trusted foreign adviser, Francis Lefort, a Swiss officer in the Russian service, and with Nikolaus Witsen, the mayor of Amsterdam who worked closely with Peter during his lengthy stay in the city.

While Leibniz had genuine zeal for the spread of Christianity in China, he always saw that mission in ecumenical terms. In addition to his support of the Jesuits, he also privately encouraged the Protestant nations—and in particular Brandenburg, where his friend and confidante Sophie Charlotte was Queen—to send missionaries to China. Here again a landbridge through Russia would be all important. While he befriended the Jesuit missionaries, he was aware that their missionary work, if successful, might also strengthen the Catholic power in Europe, and maintaining an equibilibrium between Protestants and Catholics was all important for maintaining peace. He also encouraged the Orthodox Peter to send his own missionaries to China as well.

Learn from China!

But the real importance of the mission for him was the transmission of the works of reason in both directions. Sometimes he would express his frustration that the priests were spending too much time in proselytizing and too little time in transmitting new knowledge in their letters. Writing to Father Bouvet in December 1697, Leibniz wrote:

> I believe that our speculative mathematics has nothing corresponding to it over there; it is for certain, however, that the long practice of many centuries has taught them an infinity of beautiful mechanical inventions and other things that we don't have. For although we may possess the better principles, nevertheless, there are particular encounters there from which one can draw thousands of wonderful consequences and find thousands of inventions. I myself am surprised all the time to see how much we lack, and how much could be added to our practice in the most useful things in life, or the most necessary, in regard to numbers, figures, machines, navigation, military science, geography, etc.

The Jesuits in China did not, however, have an easy task in China generally. The periods in which they were held in high regard, such as the period under Emperor Kangxi described here, would often be followed by times of intense persecution, depending on the intermittent strength of the opposition to the propagation of Christianity in the Chinese Empire by some Chinese intellectual layers.

But there was also growing opposition within the Catholic Church to the way the Jesuits had adopted

Confucius as a legitimate figure in the pantheon of reputable philosophers such as Plato, whose ideas, albeit not Christian, were deemed compatible with Christianity. The practice of the Jesuits in adapting to certain rites associated with Confucianism—for instance, ritually honoring one's ancestors—was deemed by some conservative Catholic elements, even those within the Jesuit order, as incompatible with Christianity. This simmering opposition, coming particularly from the Spanish Franciscan and Dominican missionaries in the Far East, would soon have devastating consequences for the survival of the Jesuit mission.

As early as the beginning of the Eighteenth Century, Leibniz was aware of the problem of this "Rites Controversy." Indeed, his publication of the *Novissima Sinica*, particularly his introduction, was his own defense of the Jesuit policy. But he was concerned that the Jesuit priests were not doing enough to investigate and transmit as much as possible of the knowledge available from China that would benefit European society, and he asked them to move quickly on this task, even at the cost of their proselytizing.

Writing in May 1703 to Joachim Bouvet, who had again mooted the possibility of a change of attitude by the Emperor toward the Jesuits, Leibniz wrote:

> Therefore it is extremely important to work on the history of the Arts of China without delay, insofar as you are able; this is more so the case, as they can learn from us more easily than we can from them, and that our teachings consist more of rationalizing, while theirs is based more on experience; and ours are readily available while theirs are little known except by those in the profession, and it is traditionally transmitted among these layers.

Leibniz even proposed that a portion of the missionaries be assigned solely to this cultural exchange while others deal with the proselytizing.

Leibniz also encouraged the establishment of an Academy in Beijing similar to what he had developed in Berlin and what he would propose and succeed in establishing in Russia. He wrote to Bouvet in July 1704:

> Is there not a basis in China, as with us, for academies, universities, and colleges of doctrine, and could not the Emperor be persuaded to set up one for the cultivation of sciences? This task could be accomplished through his uncle, Prince Sosan, and others who are interested, and who favor you. One could open it to Tartars, Chinese, and Europeans.

In 1713, Emperor Kangxi would in fact establish such an academy, the Academy of Mathematics.

Later, in August 1705, Leibniz was even more anxious in a letter to Father Antoine Verjus:

> I fear that one day when the Chinese have learned our sciences, they will expel the Europeans. Consequently, I believe, that one should not lose the opportunity to make up for it by conducting an exchange of their knowledge for ours. For, although I see the majority of missionaries sometimes inclined to speak with contempt about the knowledge that the Chinese possess, nevertheless, their language and character, their way of life, their crafts and manufactures, even their games, are almost entirely different from ours, as if they were a people from a different globe; it is impossible that an unadorned but precise description of that which is practiced by them, would not give us considerable enlightenment, and in my view, would be more useful than all the customs and all the artifacts of the Greeks and Romans, so greatly appreciated by so many scholars.

Councillor to the Czar

But the key to really tapping this source, in Leibniz' view, lay with Russia. And Leibniz had been making some progress on that front. In a letter apparently to Peter Lefort in 1697, Leibniz had already laid out an ambitious program for Peter to map the great expanses under his rule.

In an October 1707 letter to his friend Baron Heinrich von Huyssen, who had become the tutor to the children of the Czar, Leibniz wrote:

> As China is an almost entirely different world from ours in an infinity of things, my curiosity has turned totally in that direction; and I believe the Czar's Empire can establish a liaison between China and Europe, since it in fact touches on both. I will soon be coming to speak with a missionary who came from there. He is a bit

anti-Jesuit, but that doesn't keep him for working with them on matters of making known all that they have learned there.

In November 1711, Leibniz wrote to James Bruce, a Scottish general in the service of the Czar:

> I hear that His Majesty the Czar has had people travel from Siberia to the Arctic and the ice cape, and I would like to know what they have brought back with them and whether they have been able to determine if there is a land connection between Asia and America, which many believe there is, but others deny. No one can better resolve that question than the Czar, and its resolution would bring him much greater fame than the Egyptian Pharoah who discovered the source of the Nile. The Chinese monarch is also conducting geographic and astronomical observations, about which I have received correspondence. I hope that the Chancellery will not forget my humble services.

Leibniz was also instrumental in helping to arrange the marriage of the Czar's son, Czarevich Alexei, to Charlotte, the daughter of the Duke of Wolfenbüttel, creating closer ties to a court with which Leibniz was on very close terms. It was through the Duke that Leibniz was finally able to get an audience with the Czar in Torgau in 1711, when the Czar came to Germany to arrange his son's marriage.

There Leibniz presented him with a broad program of development for Russia, which included plans for establishing a printing trade and publishing facilities, building secondary schools, improving agriculture, conducting research on variations in the magnetic declination of the Earth in Russia, gathering knowledge of slavonic languages, promoting manufacturing and, most important of all, founding an academy of sciences, similar to the one he had helped create, and was leading, in Berlin.

In this audience Leibniz also raised the possibility of mapping Siberia, improving the sea- and land-routes to China and the East, and Leibniz's own plan for sending an expedition to find a possible land connection between Asia and North America.

Leibniz also spoke of the need for Russia to establish closer relations with the Chinese Emperor and promised to send some of the correspondence he had had with China to the Czar for his own enlightenment on this matter.

In a letter to the Czar, Leibniz explained his intentions:

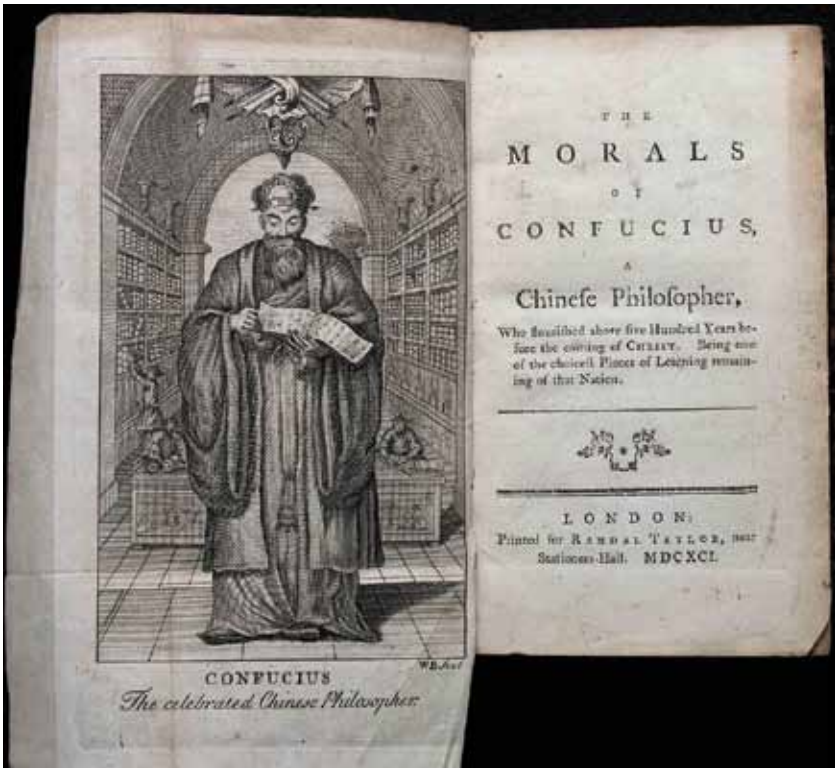
> It seems to be the hand of God that science begins to encompass the entire world and should now come to the Scythians, and that Your Majesty serves as the tool to accomplish this as you can take the best from Europe and the best from China and what both have provided you can improve on through good institutions.

In a second meeting with the Czar the following year, Leibniz was officially made a councillor to the Czar, but, to his chagrin, received no invitation to travel to Russia in that capacity. He did, however, serve as an envoy of the Czar in arranging a treaty between the Holy Roman Emperor, with whom Leibniz was on good terms, and the Russian Empire, as Peter was still in a major conflict with Sweden and sought allies in Europe.

In this new position, Leibniz continued to put proposals to the Czar for the development of science in Russia. And while his desire for Peter to allow free travel through the Russian Empire to China for missionaries and others would not be realized in his lifetime, many of his proposals would be implemented and would lay the basis for the development of science in Russia during the following century. As the great Russian scientist Vladimir Vernadsky once noted in his history of this era, the first Russian scientist was Peter himself. And behind Peter stood the great German thinker and scientist, Gottfried Leibniz.

Arrogance Closes the Door to China

As Leibniz had feared, the end would come for the Jesuit mission in China, but not because of some arbitrary decision by Kangxi, but rather by the obtuseness and arrogant behavior of conservative circles in the Vatican. At issue was the role of Confucius and the status of Confucian rites. Conservative opponents in the Vatican said that Confucius and the cult of Confucius was a religion, and a heathen one at that, and was therefore in contradiction with the teachings of the Church. The Jesuits and their defenders, including Leibniz, said that the rites connected with Confucius were a civil ceremony and not a religious service. Kangxi himself asserted publicly that this was the case.



Confucius, in a 1691 English rendition of a selection from his Analects*, as translated by Fathers Philippe Couplet and Prospero Intorcetta.*

But this was not enough for the traditionalists in the Vatican. They persuaded Pope Clement XI to rule against the Jesuits in 1704, issuing a decree, *Cum Deus optimus*, to the effect that Chinese Catholics would not be allowed to participate in any of the ceremonies, or visit any of the temples, associated with Confucius, except Christian officials in their offical capacity.

The Emperor was furious, but held out the hope that this decision could be reversed. The Pope then sent Monsignor Charles-Thomas Tournon to China to carry out his orders. Tournon, an arrogant and irascible diplomat, angered the Emperor, who banished him to Macao in 1707 and threw his assistant in jail. The Pope rewarded Tournon with a cardinal's hat, but he died soon afterward in Macao.

But even then Kangxi did not issue a ban, but rather a ruling saying that all the missionaries who wished to stay and follow the practice of Ricci on the question of the Rites, would be allowed to do so if they were willing to remain in China for life. Then in 1715, Clement issued a Bull *Ex illa die* (From that day), which reiterated his condemnation of the Confucian Rites. He went even further in this Bull, saying that even Catholic officials in China could not even participate in their formal status in such rites. Kangxi commented, "I have never heard such utter nonsense." In retaliation, Kangxi issued that year a Red Edict, which expelled all missionaries except Father Bouvet, who was allowed to remain in his role as a scientist. A year later Kangxi issued a ban against the spread of Christianity in China.

The door to China had been closed again by the obstinancy of those in the West who did not understand the advantage of this cooperation. But the achievements remained. As Han Qi of the Chinese Academy of Sciences reports in a paper written on Sino-French scientific relations in the Seventeenth Century:

> The measurements taken in China of lunar and solar eclipses, of Jupiter's satellites, comets, and the passage of Mercury through the solar disk were all used to determine longitudes and latitudes in China and to calculate the route of the comet that appeared in Beijing in 1699 and 1742. Observing magnetic declination was very helpful to correct Halley's tables, which were often used by scientists. The results of the work of the Jesuit astronomers helped determine the shape of the Earth and the obliquity of the ecliptic.[1]

And the knowledge of China transmitted to the West through this work was instrumental in broadening the understanding of the work of Confucius and of Chinese philosophy among the world's scientists and scholars, including our Benjamin Franklin.

Now we have another such opportunity with the Belt and Road Initiative. It is the responsibility of Western leaders and our own President not to lose that chance.

1. Han Qi. "Sino-French Scientific Relations Through the French Jesuits and the Académie Royale des Sciences in the Seventeenth and Eighteenth Centuries," in: *China and Christianity: Burdened Past, Hopeful Future*, Stephan Uhalley and Xiaoxin Wu (eds.). Studies of the Ricci Institute for Chinese-Western Cultural History. Armonk, N.Y. and London: Routledge, 2001. Pp. 137-147.