Ricci, Schall, and Verbiest: The Vicissitudes of their "Scientific Apostolate" in China

利玛窦、汤若望和南怀仁在中国"科学传教"的变迁

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ABSTRACT

This essay explores the continuity between the "scientific apostolate" associated with Adam Schall von Bell and Ferdinand Verbiest, and the original mission strategy of "cultural accommodation" developed by Ricci, Ruggieri, and Valignano. Though it stirred some controversy within the Jesuit community, as if it were a violation of the community's rules against members of the order accepting political offices, Schall's acceptance was approved in Rome, on the assumption that it was necessary to preserve the Jesuit mission of evangelization in China. After all, Ricci himself had petitioned his Jesuit superiors in Rome to send missionaries who not only could communicate in Chinese but who also possessed specific expertise in mathematics and astronomy. Ricci's initial contribution to the strategy of "cultural accommodation," however, entailed making strategically important friendships with the Chinese literati, friendships based on mutual respect for each other's learning and mutual interest in the advancement of science, which was the basis for the hospitality that Ricci and his companions received from some of the Confucian literati. But by the time Schall and Verbiest sought to carry on the strategy of cultural accommodation, the task was significantly complicated by the violent transition from the Ming to the Qing dynasty, and was far more controversial, both in Beijing as well as in Rome. This essay seeks to explore some of that complexity.

The papers of the symposium on the legacy of Ferdinand Verbiest rightly commemorate his work and its impact not only on the development of modern science in China, but also on how he is remembered in Chinese popular culture as well as in academic circles globally. Verbiest came to China as part of the Jesuit mission, in a later wave of specialists following up on the pioneering breakthroughs of Matteo Ricci (*Li Madou*). Ricci had become aware of the Imperial court's interest in Western science and fascination with Western technologies (Ross, 1994, pp. 130-1), and he wrote to his superiors in Rome requesting missionaries with specific expertise in these areas, such as astronomy, since they were beyond his own broad-ranging competencies in languages, and cross-cultural analyses of metaphysics, worldviews, and cosmology.

By the time Verbiest entered China in 1660, as an assistant to Adam Schall von Bell, Ricci and his colleague Ruggieri, as well as their chief supporter, Valignano, were long dead, as was the Ming dynasty in which they had made their breakthroughs. While the Ming dynasty officially collapsed in 1644, a generation after Ricci's own demise in Beijing in 1610, during the turbulent period of transition the Jesuit mission in China was split into two different factions, with Schall and Verbiest in Beijing seeking to forge a new relationship with China's conquerors that would enable the mission to survive and prosper. Following in Ricci's own footsteps, they sought to create a new friendship based on the sharing of Western breakthroughs in science and mathematics, as well as militarily significant technologies. Their immediate success with the Qing emperor was clear from Schall's appointment as head of the Astronomical Bureau, where he was ordered to use Western astronomy and mathematics to reform the Imperial Calendar. Schall's reluctant acceptance of this position at the Qing court created problems, rivalries and controversies, both among the Jesuits and the Chinese literati who hoped to administer the Qing empire.

> Given a complete history of the vicissitudes of Ricci's mission, it seems almost miraculous that so many doors eventually were open to him, among enlightened literati who genuinely were eager to explore the wisdom of this "hermit" (*shanren*) from the West.

The story of the Calendar controversies was well told at the Verbiest symposium in Thierry Meynard's essay. My own interest is to explore the continuity between the work of Schall and Verbiest, and the original mission strategy of "cultural accommodation" also known as the "scientific apostolate" developed by Ricci, Ruggieri, and Valignano. Though some Jesuits now exiled to Macau, still supporting the lost cause of the Ming in south China, denounced Schall for accepting the Qing appointment, claiming it was a violation of the Jesuit community's rules against members of the order accepting political offices. Schall's acceptance was approved in Rome, on the assumption that it was necessary to preserve the Jesuit mission of evangelization in China. Ricci

himself had petitioned his Jesuit superiors in Rome to send missionaries who not only could communicate in Chinese but who also possessed specific expertise in mathematics and astronomy.

Ricci's initial contribution to the strategy of "cultural accommodation," however, entailed making strategically important friendships with the Chinese literati, friendships based on mutual respect for each other's learning and mutual interest in the advancement of science, as modeled in the dialogue illustrated in his Chinese publications, the *Jiao you lun* (*On Friendship, 1595*) and *Tianzhu shiyi* (*The True Meaning of the Lord of Heaven*, 1603). The credibility of his religious commitment to Christianity required him to demonstrate by reason and experience the superior insights and pragmatic effectiveness of Western natural science, but in the context of dialogues, in which Ricci and his Chinese friends could explore these questions together. As Ricci's translator, Timothy Billings, has noted, the essay on *Friendship* "can be read either as a European text translated into Chinese or as a Chinese text composed by a European—it is often difficult to decide which—since at different times it seems one, the other, and both." (Billings, 2009, p. 29) Cultural accommodation must work both ways, so that both dialogue partners are sincerely affirmed allowing mutual learning to unfold naturally.

Ricci's accommodated presentation on *Friendship*, therefore, must ring true to the Chinese literati who are addressed by it. The wisdom from the Far West that Ricci remembered must both make the literati secure in what wisdom they already possess, and in that context challenge them with new or unfamiliar insights.[1] Ricci's presentation thus begins with maxims that emphasize not only the intimacy of friendship, but also its moral purpose: "(1) My friend is not an other, but half of myself, and thus a second me—I must therefore regard my friend as myself. (2) Although a friend and I may be of two bodies, within those two bodies there is but one heart between us. (3) Mutual need and mutual support are the reasons to make friends." (Billings, 2009, p. 88; cf., also Maxim 17, p. 91) Both Western philosophers and Chinese literati would find their own assumptions honored in these sayings. But there are many challenges also apparent in Ricci's maxims. One of these can be found in his observations on the relationships between rich and poor friends in which he specifically comments that "the possessions of friends should all be held in common (Maxim 95, Billings, 2009, p. 107), which was a topic much contested in late Ming China (Billings, 2009, pp. 37-46). Another, is regarding his admonitions against false friends (Billings, 2009, p. 89), and the need for vigilance in choosing new friends: "Before making friends, we should scrutinize. After making friends, we should trust" (Maxim 7).

Ricci's treatise is also significant for the issues that it passes over in silence, most notably, a topic of great interest among late Ming literati, namely, the significance of friendship among the five cardinal relationships (Chinese: 五倫; pinyin: *wǔlún*). The *wǔlún* was a summary of the basic Confucian understanding of filial piety (Chinese: 孝; pinyin: *xiao*) extending it comprehensively to all human relationships: ruler and subject (君臣; pinyin: *jūnchén*), father and son (父子

1 A similar objective seems evident in Ricci's sensational "*Mappamondo*" which placed China at the center of the world map, but with greatly expanded vistas on both West Asia, Africa, Europe, and the Americas. A reproduction of the *Mappamondo* is available on Wikipedia Commons, "*Kunyu Wanguo Quantu* (坤輿萬國全圖).jpg"

fùzǐ), elder and younger brother (兄弟 *xiōngdì*), husband and wife (夫婦 *fūfù*), and between friends (朋友 *péngyǒu*). Given that three of these are explicitly familial, and that that fourth, ruler and subject seems to be modeled on the familial relationship, the question was how to understand the fifth category, friendship, in relation to the other four.

Billings' introduction (2009, pp. 49-60) notes not only Ricci's silence on this question, but also the potential vulnerabilities Ricci and his companions faced on it. After all, these were men detached from their families, who had come from afar ostensibly to learn Chinese wisdom. But despite the converging ideals of friendship, in Chinese culture there is a tension between familial relationships which define the basic circle of trust and reciprocity, and relationships outside the family. On the one hand, the hospitality generally shown to Ricci and his companions demonstrates Chinese openness to strangers, but on the other hand there are limits, especially in uncertain situations where the foreigner may be suspect as a spy or subversive of good order. Given a complete history of the vicissitudes of Ricci's mission, it seems almost miraculous that so many doors eventually were open to him, among enlightened literati who genuinely were eager to explore the wisdom of this "hermit" (*shanren*) from the West. Perhaps, in comparison with the situation in which Schall and Verbiest operated nearly a century later, it should be remembered that Ricci's initial goals were relatively modest, namely, permission to remain in China, to engage in dialogue with like-minded literati, and to establish a residence from which to carry out his religious mission and cultural exchanges.

While Ricci never succeeded in obtaining an audience with the Wanli (Ming) emperor, the emperor was sufficiently impressed by the reports on Ricci to appoint him an adviser to the imperial court, and to permit him to reside in Beijing. Ricci's successful efforts are evident from the production that he supervised of China's first map of the world (*Kunyu Wanguo Quantu*) which was a breakthrough not only in cartography but also in the synthesis of geographical knowledge from both the East and the West. The map, among other things, introduces the imperial court to the recent discovery of the Americas, and while China still remains the "Middle Kingdom," it is now surrounded by a world of places that at best were only rumored in the past. Beyond the map which the Wanli emperor had commissioned, Ricci shared information about Western scientific breakthroughs in astronomy, mathematics, and mechanics through translations supervised by Xu Guangqi and Li Zhizao (Billings, 2009, p. 23). The interest generated at the Ming court provoked Ricci's formulation of a "scientific apostolate," which justified his requests for the Jesuits to send members with expertise in these areas, which led to the work of Schall and Verbiest in the imperial Astronomy Bureau.

The Jesuit "scientific apostolate" thus is not a departure from what Ricci, Ruggieri, and Valignano had envisioned as the strategy of "cultural accommodation," but actually one promising way to fulfill it. Friendship, both as experienced and as idealized in Ricci's treatise, *Jiao you lun* (*On Friendship, 1595*), was meant to create conditions in which genuine dialogue about Christianity's future in China could be explored with the Chinese literati. The method as well as the hoped for outcomes are best illustrated in Ricci's magnus opus, *Tianzhu shiyi* (*The True Meaning of the Lord of Heaven*, 1603), where Ricci contrasts an interpretation of Christian cosmology with the errors embedded in neo-Confucian thought influenced by Buddhism and Daoism. The argument is strictly secular, claiming to show through reason and experience, how and

why Western Scholastic philosophy based on Aristotelian logic and categories confirms the truth of original Confucian wisdom and may help the literati to recover it, separating them from the errors of later neoConfucian interpreters. As the eighth and final chapter of the *Tianzhu shiyi* describes it, Ricci's dialogue partner becomes convinced of the truth of his assertions, and now is ready for further instruction that will lead to his conversion to Christian faith and practice (Meynard, ed., 2016, pp. 359-371).

Note that the Western scientific breakthroughs, as Ricci understood them, were discovered through reason, enhanced by new technologies such as Galileo's telescope, which the Jesuits brought with them to China. Ricci and his companions were highly confident in the truth of their interpretation of the Lord of Heaven, because they thought that the new science confirmed it. A very different situation confronted Schall and Verbiest at the end of the Ming dynasty and the advent of the Qing. So successful had been the work of Ricci, along with his collaborators, the literati converts, Xu Guangqi and Li Zhizao, that Schall—now some 20 years after Ricci's death and burial with honors in Beijing—had accepted the Chongzhen emperor's command that he take up the work of reforming the Calendar, previously begun by another Jesuit, Johann Schreck, and the supervision of a foundry that turned out 500 cannon for the Ming. With the Manchu overrunning Beijing and Chongzhen's suicide in 1644, Schall became one of the trusted counsellors of Shunzi, the first Qing emperor, and was appointed Director of the Astronomical Bureau, thus inheriting the task of completing the reform of the Calendar. His work prompted the Emperor to grant the Jesuits permission to build churches and to preach throughout the country, and Christianity began to take root there.

But there were now new challenges to face. In 1664, Buddhist and Muslim astronomers, led by Yang Guangxian, who had been displaced by Schall's success with the Calendar project, used some unfortunate incidents to plot Schall's removal from his position at the Imperial Observatory, and had the emperor imprison him and Verbiest as well as other Jesuit companions. The Shunzhi emperor had died in 1661, and his successor the young Kangxi emperor, as Meynard has informed us, was unable to protect them. An earthquake in Beijing as well as other omens rescued Schall and Verbiest and their immediate companions, though Li Zubai, Song Kecheng and several other Chinese Catholic scholars in Beijing were executed. Four years later, in 1670, the Kangxi emperor had come of age, removed the regents from power, and after a contest pitting Verbiest against Yang to demonstrate their expertise in astronomy, Verbiest was made the Head of the Astronomical Bureau, and the Jesuits were allowed to resume their missions throughout China. Meynard has well described the repercussions of this turbulence in the Imperial court.[2] While Verbiest became a close friend and mentor to the Kangxi emperor (1661-1722), his very success prompted Jesuits still favorable to the Ming "lost cause" to question the wisdom of his "scientific apostolate" at least until the matter was resolved and they were allowed to return to their missions, since they were held inside China, in Canton.

Nevertheless, the controversy over Verbiest's policy of "cultural accommodation" was no longer merely an internal matter among Jesuits. Slanders accusing Verbiest and his companions of acquiescing in pagan superstitions, practices

2 For another account of the contest over astronomy, see Stephan Salvia, "The Battle of the Astronomers: Johann Adam Schall von Bell and Ferdinand Verbiest at the Court of the Celestial Emperors (1660–1670)". *Physics in Perspective, Vol 22, No 2*, Springer Nature Switzerland, 2020, pp. 81-109.

mischaracterized as "ancestor worship," were promoted in Rome, and eventually resulted in the infamous Papal Bull, *Ex illa die* (1715), issued by Pope Clement XI, that condemned the Confucian rites as "foreign idolatry". Once informed of the Pope's decision, and his determination to reign in the Jesuits, the Kangxi emperor revoked his own Edict of Toleration (1692) and officially forbade Christian missions throughout China. The Jesuit community worldwide was later suppressed in 1773 by Pope Clement XIV, only to be restored, beginning in 1814, at the end of the Napoleonic period in European history.

In retrospect, the termination of the Jesuit mission in China meant the suspension of the Jesuit initiatives of dialogue, the strategy of "cultural accommodation," and the "scientific apostolate" successfully executed by Schall and Verbiest. But by that time, the scientific apostolate itself may also have been problematic, even though its proponents were not aware of it. When Ricci began collecting literati friends in China, he shared with them news of important astronomical discoveries obtained through the use of a telescope, developed by Galileo, who was a friend of Ricci's teacher in Rome, Christopher Clavius (1538-1612).[3] As Ricci became aware of his Chinese friends' interest in mathematics and astronomy, upon the recommendation of Nicholas Trigault he secured the appointment of Johann Schreck (1576-1630) who had the required expertise needed to use the new discoveries and recorded astronomical observations in the Chinese effort to reform the Calendar. It is useful to recall that Nicholas Copernicus had published his conclusions about heliocentrism (in contrast to Ptolemy's geocentric model of the universe) in 1543, the year of his death. Clavius was well aware of Copernicus' proposal and apparently rejected it, though it was not until Galileo published his provocative treatise, the *Dialogue Concerning the Two Chief World Systems* in 1632, that its potential and posthumous threat to the Jesuits' "scientific apostolate" becomes evident. When Pope Urban VIII condemned Galileo's treatise because the Copernican heliocentrism discussed in the dialogue apparently contradicted certain Biblical passages that long ago had been used to support the Ptolemaic geocentrism, the Jesuits following the lead of their eminent theologian, Robert Bellarmine, accepted the Inquisition's verdict against Galileo's *Dialogue* (1633), and Galileo's public abjuration of it (Bonechi, 2008, pp. 101-105).

Apparently, the Galileo affair had only a minimal impact on the mission in China, for two reasons: one, Galileo's fame in China rested not on his heliocentric conclusions for cosmology, but on his technological innovations, chiefly the telescope, which the Jesuits used to demonstrate the science behind their proposals for reforming the Calendar; second, beginning with Clavius, Jesuit astronomy had avoided the polarizing choice between the "Two Chief World Systems" dramatized by Galileo, by appealing to an alternative system, proposed by Tycho Brahe (1546-1601) that while combining elements of both, reaffirmed the traditional geocentrism of Ptolemy, while tracking the rest of the solar system as orbiting the sun. Brahe's alternative allowed scientists, including the Jesuits, to use Copernicus' mathematical astronomy (cf. the *Rudolphine Tables*) in reforming the Calendar, while avoiding his specific conclusions about the earth orbiting the sun. As Kitty Ferguson noted in her study of Verbiest, "Thus, the new European astronomy that the Jesuits brought to China was not, in fact, sun-centered Copernican

3 Clavius' friendship with Galileo is described in Jeremy Schreier's "Head-On Intersection of East and West: The Overlooked History of Galileo in China". *Intersect*. Vol. 6, No. 2 (2013), pp. 1-8. Schreier's presentation relies on D'Elia's works on Galileo in China in the 1960s.

astronomy. It was the compromise astronomy of Tycho Brahe—a system more in accord with Jesuit teaching." (Ferguson, 2017, p. 13)

Thus, for the time being, the "scientific apostolate" in China of Ricci, Schall and Verbiest, could proceed, confidently supporting the superiority of their "truth" and thus indirectly refuting the cosmological "errors" of the neo-Confucian literati. But once Rome and European science had been rocked by the controversy over Galileo's *Dialogue*, Ricci's strong assertion of traditional Aristotelian arguments in support of the *True Meaning of the Lord of Heaven* became increasingly questionable. The reassertion of Biblical authority to buttress the traditional Ptolemaic geocentrism, and to condemn Galileo's heliocentrism, however imprudently asserted in the *Dialogue*, meant that the science presented to convince the Chinese of the "true meaning" based on rational argument and empirical observation could now be exposed as a *petitio principii*, that is a fallacy based on circular reasoning, where the theological agenda of Biblical inerrancy could be seen as setting a limit to scientific inquiry. That the "scientific apostolate" continued relatively unshaken, thanks to Brahe's alternative to Copernicus, meant that the Jesuit mission in China could no longer present itself as the embodiment of free and open inquiry, a harbinger of Enlightenment for both East and West.

But two things, it seems, intervened to undermine and eventually overthrow the "scientific apostolate." On the one hand, the Qing emperors, particularly Kangxi, used Schall and Verbiest for their own purpose, mainly, to reform the Calendar and upgrade their military hardware. Both these ends could be served without forcing the Emperor to make a choice between geocentric and heliocentric cosmology. On the other hand, the Vatican's condemnation of Galileo marked the triumph of a naïve Biblical inerrancy whose partisans would later undermine the Jesuit participation in the Calendar reform, as if Schall and Verbiest were acquiescing in Chinese "superstitions," such as "ancestor worship," which culminated in the Rites Controversy, that precipitated the expulsion of all Catholic missions in 1715. Nothing could have been more foreign to the spirit of Ricci, Schall and Verbiest, than the ignorance and arrogance of the later missionaries and their Vatican overlords who accused the Chinese of idolatry and other crimes.

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But that was then, and this is now. As the papers of the Verbiest symposium show, the reputations of the pioneer Jesuit missionaries, Ricci, Schall and Verbiest, for various reasons are being rehabilitated in China. In the West, the Jesuits were restored at the end of the Napoleonic episode in Europe, and in 1992, Pope John Paul II formally rescinded the condemnation of Galileo, calling it a "tragic mutual misunderstanding," which had generated the "myth" that science and religion were absolutely opposed to one

another. However welcome the Pope's attempt to rehabilitate Galileo, it came nearly two centuries after most European scientists had abandoned Brahe's compromise system, and accepted some form of Copernican heliocentrism. When the Jesuits resumed their mission in China in 1842, the world both East and West had changed, with even more dramatic changes still to come. Even though the "scientific apostolate" could not be revived in Beijing,[4] the Riccian offer of friendship that preceded it continues to flourish, especially under the leadership of Pope Francis, who proclaimed Ricci's status as "Venerable" on the way to canonization as a saint. Pope Francis' praise of Ricci returns us to his original mission, an approach to the Chinese characterized by "dialogue, friendship, and consistency" (Pope Francis, 2023). Schall and Verbiest did not depart from this approach, but sought to extend it with a "scientific apostolate" offering incentives to the Ming and Qing emperors that could only be temporary, given the fact that the Jesuits could not control or predict the future of European science and technology or the shifting political situation in either Europe or China. What endures, however, and clearly animates Pope Francis' attempts to normalize the Catholic church's status in China, is the mutual respect embodied in Ricci's original offer of friendship.

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4 As Thierry Meynard pointed out to me, the Jesuits in China still engaged in science, for example, in Shanghai where they founded an astronomical observatory, a meteorological observatory, or in Tianjin with the foundation of the Natural Museum where Teilhard de Chardin was to work in the 1920s and 1930s.

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