Responses of Donghak and Cao Dai Movements to Western Science in Context of Colonialism

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Abstract: Religion and science have long been in a discussion in which both have tried to justify themselves against the other. In that relationship, only religion seems to show more of the ability to transform the other side into something useful in a religious meaning. This ability of religion has been enhanced in new religious movements formed in the West, and it seems to be also the case for many new religious movements in East Asia. However, in the context of Western colonialism, new East Asian religious movements might have justified themselves through science in different patterns in comparison with the norms of Western ones. The paper endeavours to investigate how two new East Asian religions born under the pressure of colonialism, Caodaism in Vietnam and Donghak in Korea, in their doctrinal dimensions, had tried to respond to Western science soon after they were established. As a result, the paper suggests a critical revision of the worldview theory of Ninian Smart in order for it to be applicable in the study of new East Asian religious movements.

Keywords: Caodaism, Donghak, Ninian Smart, new religious movements, colonialism.

Subject classification: Religious studies

1. Introduction

The relationship between religion and science has long been a topic of discussions, theoretically and practically. Mikael Rothstein (2004) pointed out that this relationship has gone through reversal situations. When modern science was established roughly in the 17th century, it had to justify itself through theology and mythology. But, nowadays religions have to justify themselves through science, by either

adapting to or proving against the latter [12, pp.100-101]. However, it is important to acknowledge that, despite the current dominance of scientific worldview, it is religion, not science, that defines the standards of interaction between the two, because while religion has the ability to transform science into something useful in a religious meaning, modern science cannot do the same thing with religion [12, p.102]. Instead of transforming religion into something scientifically meaningful, science

usually comes up with a reductionistic explanation of it.

The ability of religion has been enhanced in new religious movements (NRMs) formed in the West roughly one century after modern science emerged. It is a logical consequence from the view of Hexham and Poewe (1997) in which NRMs are seen as responses to modernity as "the changes brought about by an awareness of industrial goods, science, and technology" [7, p.37]. It seems that this point is also correct in the case of many NRMs in East Asia. When modern science was introduced into the area as part of the modernity brought over by Western colonial powers, sometimes forcefully, NRMs such as the Taiping movement in China, the Sokka Gakkai in Japan, the Donghak movement in the Korean peninsula, and the Cao Dai movement in Vietnam, in one way or another, have tried to respond to science and give it new religious meanings. However, in the context of Western colonialism, how these NRMs justify themselves through science might be different from the norms of Western NRMs. In the West, religion might have reacted to science as an independent competing worldview and method, but in the East, science and modernity were not introduced independently from Western colonialism and Western religions.

In this paper, the author is going to investigate this point by analysing two new East Asian religions born under the pressure of Western colonialism, one in Vietnam (Caodaism) and another in Korea (Donghak movement), particularly in how they had tried to response and give meaning to

Western science soon after they were established. The problem of this approach is both of the movements under that investigation are highly complex phenomena which make a comprehensive comparison of them too much for a single article. Both movements, despite being identified as 'new' religious movements, actually had long histories over a hundred years or more with huge transformations. The Donghak movement was persecuted and then regrouped with drastic changes in the new form of Cheondogyo in 1905 and the two small, but independent, factions Suwungyo and Bocheongyo (which were later more influenced by the idea of Kang Jeung-sang, another religious pioneer in Korea). Caodaism went through a serious process of sectarianism soon after its establishment, being split into eight independent branches by the end of the 1930s. Both of these new religious movements were syncretic in different ways and involved political influences. Therefore, in this study they are called 'movements' instead of single religious institutions. Because of the limitations of this paper, a comparative study will be made only of their early reactions to science as a composition of the Western colonial worldview revealed in their theoretical/doctrinal dimensions. Thus, the objects of this study will be narrowed down to Donghak when it was still under the direct influence of the ideas of its founder Ch'oe Je-u and not vet underwent the Japanese colonisation; and to Caodaism in its initial form when the teachings were still highly centralised in their core revelations. The materials used for this study are core and founding scriptures of these movements. Any references to the ideas of their later religious leaders will be used limitedly with careful consideration that they are the extensions of the initial ideas instead of sublations of them.

In using the term 'worldview' and 'doctrinal dimension' we are referring to the theory of Ninian Smart - a significant scholar of religion in the twentieth century, who will be given some space at the conclusion of this study. According to Smart, the doctrinal dimension has a specific scientific function, i.e., doctrines can settle external contradictions created by changes in knowledge [14, p.57]. In this case, Donghak and Cao Dai doctrines are responsible to react to the challenge of the scientific way of understanding as a part of the Western worldview. This is the reason for the focus on this dimension considering limitations the of this paper. The comparative study will reveal a common pattern in the way Caodaism and the Donghak movement reacted to Western science in their teachings - critical but not hostile.

2. Doctrinal responses of Cao Dai and Donghak movements to science as a component of Western colonial worldview

2.1. Donghak movement and its response to Western science

The Donghak (Eastern learning) movement is a Korean social movement and a new religion founded in 1860 by Ch'oe Je-u (1824-1864). By that time, Korea was ruled by the Joseon Dynasty. In its neighbourhood, the Qing Dynasty in China was having the worst time of its history dealing with both the Westerners and the Taiping Rebellion. In Japan, it was the time of the Meiji Restoration which empowered the Japanese and made them the most serious threat to the Joseon kings. A little before that, the year 1858 also marked the start of the French invasion in Vietnam that brought the country under French colonial rule piece by piece during the next 29 years.

Unlike the Vietnamese, the Koreans did not experience Western colonialism directly. However, because of their connection to China and the attention Korean elites had paid to the crisis happening there, the Western colonial threat was real to them. Ch'oe Je-u, the founder of the Donghak movement, was born in a fallen yangban (scholar-official) family as the son of a remarried concubine. Such background provided him both the intellect of a yangban and the realisation of the practical situation of the Korean society through the hardship that he had experienced in life. In the Donggyeong Daejeon (Great Scripture of the Eastern Learning) - one of the holy scriptures of the Donghak movement -Ch'oe Je-u confessed his worry:

"The Western powers are victorious, attack or defence there is nothing they failed to achieve. Heaven and earth are thoroughly conquered, I cannot help but worry that 'when the lips are lost, the teeth turn cold'. Where can we find a way for supporting the nation and comforting the people?"² (Donggyeong Daejeon, chapter 1 verse 8) [16].

The way he referred to was the Donghak movement. The threat of Western colonialism was one of the motivations for the establishment of this new religion. From his own experience. Ch'oe knew that traditional Confucianism and Buddhism were not enough to save the Korean people from the chaos of history [11, p.171] and a new form of religion or ideology was needed. The Donghak's teachings and practices were a synthesis of Confucian virtues, Buddhist ethics and rituals, Taoist practices, and Shamanist belief of supernatural powers. However. Ch'oe also criticised the Confucian social discrimination, as well as the Buddhist and Taoist social withdrawal attitude, and advocated values of equality and humanism [11, pp.228-229]. The core teachings of Ch'oe were collected and published in two scriptures, the Donggyeong Daejeon (Great Scripture of the Eastern Learning), and the Yongdamyusa (Hymns from the Dragon Pool). They are both sacred texts, but the first one is fundamentally the Bible of the movement (and of Cheondogyo later) and also the main resource for the investigation in this section.

The Donghak's worldview in respect to its reaction to Western science can be summarised in the two main terms: Godhuman relationship and cosmology. The core teachings of Ch'oe Je-u which make Donghak's faith unique are Innaecheon (人乃天, Human beings are God) and Sicheonju (侍天主, Serving the Lord of Heaven within). both mentioned in Donggyeong Daejeon. Unlike the East Asian traditional concept of Heaven (Hanulnim in Korean), the god of Donghak does not reside on the cloud or in a heavenly realm away from human beings. God is omnipresent, filling both heaven and earth and enshrines within the human body. Thus, the god of the Donghak movement is

panentheistic, probably more Taoist than Confucian [5, pp.56-57]. This god revealed himself to Ch'oe and spoke to him as a person and ordered him to teach his religion in a similar way to the god of the Christian Old Testaments [16]. Since every human being is capable of having God dwelling within, they are sacred and equal [5, p.66]. This is the source for Donghak's humanism and egalitarianism. It also explains why many of its followers later got involved in the so-called Donghak Peasant Revolution (1894-1895), rebelling against the corrupted local administration and the increasing influence of the Japanese. The result was a religious persecution of Donghak's members regardless of their connections with the rebellion. Ch'oe Je-u and his successor Ch'oe Si-hyeong (1827-1898) were captured and executed. Despite that, the movement survived and under the lead of the third patriarch Son Byong-hi (1861-1922) it changed its name and developed into the religion Cheondogyo in 1905.

The god of Donghak is a transcendent entity that creates and governs the universe and, at the same time, is present in everything. This cosmology is explained by the concept of Jiki (至氣, the Absolute Vital Energy). The idea of ki in Jiki can be seen as an influence from the Neo-Confucian philosophy of *li-qi* (- 氣, the principle-the vital force), but the god of Donghak is more active and has more personality than the principle of Neo-Confucianism. The Donghak cosmos is perceived as a vast spiritual organism permeated and linked by the absolute vital energy of this god [5, pp.57, 59]. This type of cosmology is more spiritual than material

and, therefore, in theory not suitable for the more naturalistic and scientific cosmology of the West.

The attitude that the Donghak movement had towards the West was signified in its original name, 'Donghak' (Eastern Learning) which interestingly poses a contrast with 'Seohak' (Western Learning) - the name that Koreans used to address the way of the Westerners as a whole. Ch'oe Je-u did not religion iust create his to counter Catholicism nor did he see the latter distinctively as a religion independent from other aspects of the Western presence, including Western science. From another angle, the dominant power of Westerners was interpreted by Ch'oe not independently from their religious belief:

"There has been a strange rumour: In this collapsing world, the Westerners had discovered the truth and established virtues, reaching to the power of the Creator, there was nothing that they could not do. No one could stand before their military power. China has been destroyed, how can I not have the worry of 'when the lips are lost, the teeth turn cold'? The reason is nothing but these people, their way is called 'Western Way', their discipline the 'Lord of Heaven', teaching their the 'Holy Teaching'. Is it possible that they know the Heavenly Order and have received the Heavenly Mandate?" [16].

Such explanation of Western power suggests that Ch'oe was probably ignorant of its science and technology [12, pp.170, 226]. Whether or not Ch'oe had knowledge about Western science requires more evidence to be answered, but at least we can say that he did not distinguish that power and knowledge from the Western religious dimensions. It is also true that in the *Donggyeong Daejeon, Yongdamyusa* (Hymns from the Dragon Pool), and *Haewon Sinsa Beopseol* (The Dharma Teachings of Master Haewon - the second patriarch of Donghak) there was not a single mention of the term 'science'. The only appearance of it was in one teaching of the third patriarch Son Byong-hi named *Cheondo Taewongyeong* (The Book of the Ultimate Origin of the Heavenly Way):

"We humans, in front of our eyes as well as within our mind, are entangled in profound principles and physical states. From the secluded external world nothing can come and go. However, within our internal world, all those forms vanish, the mysterious and profound principles are exposed completely. In comparison with the scientific way, the internal world remains unchanged everywhere, profound truths are self-awakened, and the universe united in one orbit. The original form of my way cannot be captured in one word." [17]³.

In this, the way of science was brought into comparison with the Way of Heaven by Son in order to emphasise the superiority of the latter. Science was disregarded because, as Ch'oe wrote, it belongs to the Western Way which itself was disregarded and put into the opposition of the Eastern Way:

"Our way is the transformation from the Wuwei [無為]. To preserve that mindset, rectify that vital force, follow that original nature, and receive that teaching, it was born out of the Way of Nature. The Westerners have no order in their words and no right and wrong in their writings.

There is no genuine service for God but they only pray for selfish things. Their bodies do not have the spiritual experience of uniting with the vital force. Their study lacks teachings about the Lord of Heaven. There is only form but no substance. They just think without real incantation. Their religion is close to emptiness, their teaching is not about the Lord of Heaven. How can one say that there is no difference between them [the Western Learning] and my teaching?" [16].

In the view of Ch'oe Je-u, the Western way made no sense and their religion was false because it did not teach the Way of Heaven, failed to provide people with good ethics, and was unable to capture the religious experience which is, as Son Byong-hi emphasised, beyond the description of language. The Way of Heaven, like this cosmos, is essentially spiritual while the Western way is earthly, selfish, and to some extent disrespectful to God. The language of Ch'oe was intellectually critical rather than disgraceful. The Donghak, therefore, chose to reject the scientific way together with the Western way and put the emphasis on the East Asian shamanistic experience which is an opposition to Western science. In such experience, men can reunite with God spiritually. That is why when his god suddenly spoke to Ch'oe Je-u in his mind in 1860, he disregarded the Western way and offered Ch'oe the mystical talisman and the incantation instead:

"I asked [God]: 'Shall I teach the Western Way to people?" [God] said, "No, I have a spiritual charm [talisman] which is a mystical medicine. Its shape is like the Great Ultimate [taich'i] and its form is also like *gung* [弓]. Receive my talisman and cure people's illnesses. Receive my incantation and teach people to follow my ideal. Then, you too shall become immortal and the virtues shall spread to the world." [16].

This story in the mythic dimension of the Donghak movement plays a key role in defining the doctrinal attitude of the religion towards the Western colonial worldview and science. There was no strong word of disgrace, just a bare disregard of the Western way and a claim of a superior Eastern spirituality. A similar pattern can also be found in our second movement, Caodaism. However, as a latecomer, Cao Dai followers held a more open attitude towards science than that of the Donghaks.

2.2. Caodaist response to Western science and some comparisons

The Cao Dai movement was founded in 1926, 66 years after the Donghak movement, right within the French colony in Southern Vietnam. Victor L. Oliver (1976) considers Caodaism a 'syncretic religious movement' because of its strong influence in the social and political situations in Southern Vietnam during the first several decades after its inauguration [8, pp.1-3]. The term 'movement' is also more convenient in addressing the religion because of its sectarianism. Soon after its creation, important Caodaists left the Tay Ninh main sect to create their own factions. The number of factions and the differences between them make it difficult to group them theoretically as a single

'religion'. For this reason, Caodaism can be compared to Protestantism, not only because of its reformation and emergence out of the Buddhist tradition in Vietnam as Gabriel Gobron (1950) recognised [6, pp.12-13].

The Caodaist doctrinal dimension is a combination of teachings from Buddhism, Confucianism, Taoism, and even Catholicism, received through the practice of spiritist séances. Its belief system is henotheistic and syncretic. The religion believes in a god who identified himself as "Cao Đài Tiên Ông Đai Bồ Tát Ma Ha Tát" Ancient Immortal and Great (The Bodhisattva of Eternity/Boundless on High Palace, usually referred in short form as "Cao Đài"), thus the popular name of the movement "Dao Cao Dài" (Religion of Cao Đài ('High Palace', which is also the name of the god), full name "Dai Dao Tam Kỳ Phổ Độ" (The Great Way [for the] Third Universal Redemption)). The god Cao Dai is the supreme god and creator of the universe but he is not alone. The religion also acknowledges the existence and power of numerous saints, deceased people, and spirits, even evil ones (e.g. Sakyamuni Buddha, Lao Tzu, Jesus Christ, Confucius, Lü Shang (呂尚), Li Bai (Li Po, 李白); Guan Yu (□ 羽), Sun Yat-Sen (孫 逸 仙), Victor Hugo, Nguyen Binh Khiem (1492-1585, Vietnamese poet and prophet), etc.). The second important spirit that is worshipped in Caodaism is the Mother Goddess or the Queen Mother of the West (瑤池金母) which can be seen as the yin side of the god Cao Dai. In this sense, the Caodaist worldview is similar to that of the

Donghak - full of spiritual agents, though they may manifest differently. However, the teachings of Cao Dai also reveal a material aspect of the universe. The god Cao Dai created the universe from the qi of nothingness (虚無之氣, khí hư vô). separated it into *yin* and *yang*, then transformed both into the Four Phenomena (四象) and Eight Trigrams (八卦) [4, Vol. 2, p.103]. This kind of Taoist universe is organised into many realms separated in different levels. The realm where human beings are living is labelled the Earth number 68, not very high in the realm system. There are seventy two earths in total and above them another three thousand worlds and more. This imagination of our Earth and others came from Western science. Another interesting and more important point is that moving up in this system means also achieving higher levels of spirituality. By following the Great Way, one can elevate to higher realms towards the White Jade Citadel where the god Cao Dai resides (equivalent to Nirvana in Buddhism) [4, Book 1, p.112]. So, the 'scientific' Earth is put in lower rungs of the spiritual universe.

Core practices of Caodaists are spiritist séances. Through these séances, the relationship between the human and the spiritual world, as well as between humans and the god Cao Dai, was established and the Cao Dai movement was created. Unlike the Donghak movement, Caodaism did not start with just one charismatic leader. Historically, the spirit Cao Dai revealed himself independently to different people in Southern Vietnam a few years before they finally grouped up together and established the religion. The first disciple of Cao Dai was Ngo Van Chieu (1878-1932; a.k.a. Ngo Minh Chieu), an officer who worked for the French colonial administration. He received the message from an entity called Cao Dai in 1921 and practiced the séances following an Eastern mediumship (planchette writing, co bút). Independently from him, the group of Pham Cong Tac, Cao Quynh Cu, and Cao Hoai Sang, and later Le Van Trung (the 'Pho Loan' group) made contact with the same spirit on the Christmas Eve of 1925 using French spiritist techniques (table-tipping). They were all intellectuals and officers of the French colonial government [8, pp.33-51]. Even though the Cao Dai cosmos is full of spiritual power similar to the Donghak one, the relationship between human beings and the spirits can only be established through special rituals and under special conditions, the séances. It is important to note that spiritism by that time was widely spread among intellectuals, firstly in Europe, as a possible form of science though criticised as pseudoscience. The Eastern mediumship has its own history but the spirituality it carries synchronised well with Western spiritism in the early Cao Dai movement. Therefore, theoretically there was a common ground for spiritualism and science to work with each other within Cao Dai doctrines, unlike in the case of the Donghak movement.

In terms of the Caodaist attitude towards Christianity, an interesting fact is that Ngo Minh Chieu, one of the first founders of the Cao Dai movement, had made a similar inquiry to that of Ch'oe Je-u when he was ordered by his god to choose a symbol of worship for the coming-to-be religion. He suggested the symbol of the cross but was rejected by Cao Dai because it was similar to what had been used by Christianity and was not unique. Later, through mystical experience, he received the vision of the Heavenly Eye that later became the official spiritual symbol of the religion [1, pp.83-87]. As in the case of the Donghak movement, the same attitude towards Christianity is shown here, not a total rejection but disapproval because of its shortcomings.

Under such circumstances, it can be expected that there would be a more open attitude towards Western science in Cao Dai doctrines than in Donghak's texts. However, throughout its main scriptures (Kinh Thiên Đao Và Thế Đao (Prayers of the Heavenly and the Earthly Way), Pháp Chánh Truyền (The Religious Constitution), Tân Luật (The Canonical Codes), Thánh Ngôn Hiệp Tuyển (Collection of Divine Messages), there is only one mention of 'science' in the Collection of Divine $Messages^4$. It was a teaching of the god Cao Dai given in French to a French visitor named Girand who attended the séance on 1 October 1926 [2, p.108]:

"Don't you know that because of the extreme violence in this world, the doomsday has come close. Humans kill each other because they do not know how to use science for the right things, so they turn towards separation and warfare. The Holy Teachings of Jesus Christ (because of misunderstandings) enhance the desire of the strong against the weak and help teach the upper how to oppress the lower. There must be a new teaching that is capable of restraining humankind within the love for all beings." [4, Book 1].

There are several messages within this quotation. The millenarian idea and the necessity of a new way is almost the same with the teachings in the *Donggyeong Daejeon* of the Donghak movement. However, unlike in the Donghak movement, Cao Dai teachings do not consider Christianity a false religion nor science a shallow thing. From a Caodaist viewpoint, Christianity was a failed attempt (that would be fixed by the Great Religion of Cao Dai) and science a potentially good thing but has been misunderstood and misused.

If we extend the search to the teachings of Pham Cong Tac (1890-1959), probably the most influential founder to the Tay Ninh main body of the Cao Dai movement, the term 'science' was mentioned a dozen times. In all of these teachings (which were made during the years of 1945-1955 and recognised as canonical by Tay Ninh Caodaists), the attitude towards science was critical, similar to what we have seen in the teaching of Son Byong-hi. For example:

"Now humankind tends to follow the method of the physical forms, the power of science. Such absurd and heretical theory makes the human spirit dull, thinking that there is no Heaven, no Earth, and of course no religion, no humanity, no society, no family; they live just like animals cohabitating with each other... so the crucial thing is to worship Heaven and Humanity. In this chaotic age, humankind is going down a road of death because of science." [3, Book 2, p.63].

It was a millenarian warning of the extreme abuse of science, not a rejection of it. In other places, Pham still expresses a valuation of Western science and the hope to combine it with Eastern spirituality. This idea was clearly expressed in a teaching of him in 1954 which, due to its significance, is quoted in length below:

"After 80 years of French colonial rule, the French have brought us a new civilisation and culture: The civilisation and culture of Christianity which we have been calling 'Gia Tô Giáo'. Let us use our reason to compare our civilisation, our most ancient civilisation, with that most modern civilisation to see how the Confucian psyche has trained our culture? How has the Christian culture trained the civilisation that we are under the influence at the moment? One takes the Way of Three Relationships and Five Constants as the foundation, only knows to take the spirit and psyche as standards to cultivate our soul. Another takes science and observation of the real appearances of life as the basis. We can see obviously that these two visions are not different from two women, one is modest and honest and only takes her psyche as the criteria for her judgments and her emotions as her standards, never she would dare to act bypassing the call of her soul; another takes all of her polite style, her wealthy and beautiful image, all her aesthetic figure and expresses them out. Then we see that one takes appearance as the basis, the other takes the mindset as the foundation... Now, if we reconsider this, we can take that polite person and affect her mind, teaching her the benevolence and righteous soul of a woman... then how precious that person

would be. I think that on this whole globe, any man who cared about establishing his life would eventually have this dream: To have a wife who is both benevolentrighteous and beautiful, and there will be no greater happiness. If there is any guy who can teach like that, I am sure that the whole world will praise him. If that is the psychology of all humans, can we train humans to be as beautiful as in our dream? My answer is this: the Cao Dai religion will train them." [3, Book 6, pp.31-32].

Once again, Eastern virtues, in particular Confucian virtues, and Western science were put into comparison and contrast. In this view, the two value systems seem to complete each other rather than one replacing the other. Of course, according to Vietnamese ethics, the goodness of the soul is always more valuable than the beauty of the appearance, so in the end, Eastern virtues are still superior to Western science. Nevertheless, it does not cover the fact that by 1954 when this teaching was delivered, the Cao Dai leader Pham Cong Tac had the vision of combining Eastern self-cultivation with Western science within the religion. Western science did not receive such treatment at the beginning of the movement.

Another point should also be taken into consideration here is the connection between French colonialism, Western civilisation, Christianity, and science. Pham had identified the Western civilisation introduced by the French colonialists with Christian culture and scientific way of life. There has been no clear cut between Western science and Western religion (i.e. Christianity) in the teachings of the Cao Dai movement nor in those of the Donghak movement.

3. Conclusion

Rothstein (2004) agreed with James Lewis that since the beginning of the modern era, new religious movements (NRMs) have consciously related to science and technology in their quest for explanations and solutions. In the West, many NRMs include 'science' in their names or doctrines. NRMs can respond to science in different ways, from the incompatibility and rejection of the International Society for Krishna Consciousness, to the collaboration of the Baha'i religion, and the syncretism and adoption of science found in Scientology and Raelism [12, pp.103-106]. While there have been quite a number of NRMs in the West that try to incorporate scientific knowledge, it seems that this pattern of responses to science was not available in NRMs of East Asian societies, at least during the late 19th and early 20th century. The attitudes that we find in the Donghak and Cao Dai movements are ranging from disregarding to acknowledging both the inferiority and supplementary values of the scientific way with more openness in the later tradition. In response to Western science, both movements turned to an emphasis on East Asian mysterious experience (the gung-eul talisman in the Donghak movement, and the séance in the Cao Dai movement), as well as the spiritual essence of the world which they believed to be beyond the power of Western science and religion. Nevertheless, their responses to science were not anti-scientific nor pseudoscientific. Even in the case of the Cao Dai movement, which was influenced by Western spiritism, they did not claim

themselves scientific in any way. There are multiple reasons for this pattern, but as this study has tried to prove, one could be because Western science was not perceived by Vietnamese and Koreans as independent but as a part of the colonial worldview.

This brings us back to the worldview theory of Ninian Smart mentioned at the beginning of this study. Scholars of NRMs such as Lukas Pokorny, Franz Winter [9, p.9], Michael Pye [10, pp.499-502], and Philip Taylor [15, p.21] have recognised the significance of the colonialist context to the formation of NRMs in East Asia, but they did not theorise about it, in particular about how religion, science, nationalism, and colonialism interacted with each other in the development of these religious movements. Smart, on the other hand, provided a theoretical approach to the issue with his concept of 'worldview'. His theory rooted in an aspectual approach to the phenomenon of religion in which a religion is analysed as an organic body of seven 'dimensions': the ritual or practical dimension, the doctrinal or philosophical dimension, the mythical or narrative dimension, the experiential or emotional dimension, the ethical or legal dimension, the organisational or social dimension, and the material or artistic dimension [14, pp.10-11]. These dimensions or aspects can overlap each other at some points and are in interaction with and influencing each other. They are the compositions of what we usually called 'religion', but since the boundaries are not fixed between the dimensions as well as between a certain composition of dimensions and other aspects of human life, Smart suggested the notion of 'worldview' as a

broader and more flexible name for this whole structure [13, p.4].

At this point, it is necessary to acknowledge that this study, which focused on the doctrinal dimension with little reference to the experiential and mythical dimensions, was not able to bring out a complete and comprehensive picture of the relationship between religion and science in the Donghak and Cao Dai movements. There are also other forms of responses to Western science in other dimensions, for example in how they organised their institutions, how they utilised Western technology in building their military forces, and how they encouraged their adherents to participate in the Westernised educational system and learn Western science. But, as explained at the beginning, the scope of this study has to be humbly narrowed down. A comparative study the of doctrinal responses to science of these two NRMs, with its acknowledged limitation, is still meaningful both in suggesting a common pattern between these movements and in reflecting about theories of religion, in particular the theory of Ninian Smart.

In terms of theory, for methodical purposes, Smart's definition of 'worldview' has focused on the relatively stable structure of institutionalised and traditionalist religions and avoids the complexity of phenomena like new religions. Towards the end of his career, Smart realised that such boundaries were so 'thin' that different dimensions and worldviews can really 'pour' into each other. That explains the extensions of the material dimensions and the political effects to the theory [14, pp.289-298]. Business and political activities of religion have become too significant to be submitted totally under the doctrinal or social dimensions. In the case of East Asian NRMs under the condition of colonisation. many of them appeared not simply as a religion but also as social movements, sometimes even as political and military ones. Those religions syncretised with nationalism in a reaction against what they perceived as the 'Western challenges', and as 'modernity' in a broader cultural sense. As it has been shown, they did not react to Catholicism or Western science separately but as components of a greater Western worldview. nationalism can be seen as a worldview, so can colonialism, and both are not simply worldviews in a political sense. A comparative study of NRMs in East Asia without attending to these points will result in misunderstandings. While Smart was very sensitive with the non-finite characteristic of worldviews in a horizontal direction, it seems that he was reluctant in recognising it in a vertical direction. Up above the relatively stable and institutionalised worldviews there are more collective and inclusive worldviews like the Eastern way or the Western way, to which the author suggests the term 'meta-worldviews'. Meanwhile, below them are personal worldviews that are always lively and elusive. The definition of the boundary for a worldview, therefore, is always relative and on account of methodical purposes.

Notes

¹ The paper was edited by Etienne Mahler.

² All quotations from religious texts in the paper are translated by the author with the intention of respecting their original grammatical structures and

possible meanings instead of refining them according to standard English and eliminating alternative interpretations (especially in the cases of Chinese texts).

³ This scripture belongs to the period of Cheondogyo instead of early Donghak but the reference was made in order to extend and clarify the Donghak general attitude towards science.

⁴ There is another mention of the term "*khoa hoc*" in *The Religious Constitution* but with a different meaning ("Suffering is a *class* [emphasis added] in the school of life").

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