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Declining Number of Buddhist Monks and Its Impact on the Future of Buddhism[1]

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Abstract

This paper builds on the research project "Report on Preliminary Observations on Trends of Number and Quality of Buddhist Monks in Rural Thailand," supported by Princess Maha Chakri Sirindhorn Anthropology Center (public organization) in 2007. The objectives of the project were to (1) conduct a qualitative survey on the causes of the declining number of Buddhist monks and its impact on the rural community, and (2) make preliminary observations and policy recommendations on the situation. The survey adopts a statistical approach covering the period between 1999 and 2006 based on various documents and field surveys in some areas of the provinces of Chiang Mai and Ubon Ratchahani.

The findings show that the period under study saw a declining number of Buddhist monks and novices, and that the decline had nothing to do with economic factors. Rather, it was caused by the following: public education

[1] This paper builds on the findings of the research project "Report on the Preliminary Observation on the Trends of Number and Quality of Buddhist Monks in Rural Thailand," supported by Princess Maha Chakri Sirindhorn Anthropology Center (public organization) in 2007. It was published in book form in 2008.

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was more accessible to the rural community; the education provided by the Sangha was not appropriate to the changing society and values; the rural labor sector had changed; and rural households had fewer children and would prefer to have them spend shorter time in monkhood. On the other hand, the statistical survey between 2007 and 2010 reveals a slight increase in the number of the monks, but a decrease in the number of novices. The overall picture, however, points to a reduced number of both groups.

Survey based on academic documents

According to P.A. Payutto (1984) in his ***Sangha Institution and Thai Society***, the number of Buddhist monks and novices nationwide in 1964 was 237,770 out of the country's total population of 28,072,431, representing a ratio of one monk/novice to 110 persons (P.A. Payutto, 1984: 21). The number could be broken down as follows:

The number of monks of traditional 3-month ordination:	at least	91,138
The number of regular monks:	about	61,372
The number of novices:		85,260

P.A. Payutto commented that the first group entered monkhood for three months during the Buddhist Lent (Rain Retreat), representing only 60% of the total Sangha. In remote rural areas, there was a shortage of monks after the Buddhist lent. Some *wats* had only one monk residing, while others had two or three. Sometimes there was no abbot to be found – not to mention senior long-termed monks. Even monks of 4-5 year residence were hard to find. As a result, local communities sometimes felt a lack of moral support, especially when a significant presence of monks was needed. For instance, when a religious event was organized, monks from other communities had to be sought (ibid, 42-43). This was the situation concerning the number of monks in Thailand about 40 years ago.

In 1995, Chamnong Adiwatthanasit conducted a survey on Thai ordination behaviors, using a set of questionnaire with 920 monks/novices. The findings reveal the following statistics: (1) 43.54% of monks/novices followed the traditional ordination; (2) 25.10% wanted to study the Dhamma-Vinaya; (3) 13.04% wanted to devote the ordination merit to

someone dear to them; (4) 7.10% wanted to carry on the torch of Buddhism; (5) 6.30% went into monkhood for their livelihood; (6) 5.12% had a strong faith in Buddhism (Chamnong Adiwatthanasit, 1995: 44-48). Groups (1), (3), and (5) combined make up 62.88%, representing what P.A. Payutto called the people "who are the burden to and yet benefit from the Sangha". They do not contribute to the strength of the faith. Groups (2), (4), and (6) combined representing 37.32%, on the other hand, can be considered the pillar for the continuity of Buddhism. Evidently, 31 years later, the number of the latter group remains relatively unchanged.

In 1999, the National Education Commission, the Prime Minister's Office, produced a report of the religious situation in Thailand. The report included the number of Buddhist monks in the country, as provided by the Information Center, Ministry of Education, as of January 1999, as follows:

> The total number of monks/novices in 1999 is 365,140: 267,300 monks and 97,840 novices. In terms of geographical regions, the northeastern region saw the highest number of 148,147 or 40.57% of the total population of monks/novices. This number can be broken down to 101,072 monks and 47,075 novices, representing 37.81% and 48.11% respectively. The northern region had the next largest number of 71,234 monks/novices or 19.51%, consisting of 43,668 monks and 23,566 novices representing 16.34% and 28.17% respectively. The southern region saw the smallest number with 23,288 monks/novices or 6.38%, consisting of 18,924 monks and 4,364 novices representing 7.08% and 4.46% respectively. The central, western, and eastern region recorded 60,382, 36,922, and 25,167 monks/novices or 16.54%, 10.11%, and 6.89% respectively. The numbers can be broken down further as follows: 49,305 monks in the central region, 32,204 in the western region, and 22,127 in the eastern region, representing 18.45%, 12.05%, and 8.28% respectively. As for novices, there were 11,077 in the central region, 4,718 in the western region, and 3,040 in the eastern region, representing 11.32%, 4.82%, and 3.11% respectively. In addition, the year 1999 witnessed

13,257 nuns and 39,667 monastery boys (National Education Commission, Prime Minister's Office, 1999: 42-43).

In 2002, Phramaha Hansa Nithibunyakon undertook a study on novice ordination in Thailand (between 1980 and 2000) drawing on information from the Statistics and Information Section, Planning Division, Department of Religious Affairs, Ministry of Education. The study yields an interesting picture of the changing numbers of monks/novices during 19 years from 1980 to 1998, as follows: In 1980, the number of monks/novices was about 500,000, while the year 1998 saw it come down to 250,000, a reduction of 259,405 or 50.95%, comprising of a reduction of 168,540 monks (47.2%) and 90,865 novices (59.74%) (Hansa Nithibunyakon, Phramaha, 2002: 95).

In 2007, Phramaha Kittiphat Sinak undertook a study on the trends and crises of short-termed ordination in Thai society, as represented by Bangkok and Ratchaburi province. The study was based on the number of ordination only in the Mahanikaya Sect in the two provinces from 2002 to 2004. The report reveals that during that period, Buddhists opted for a short-term ordination lasting between 7 days to one month, representing nearly 70% of the ordained total. In other words, of every ten ordained monks, seven were in for a short-term ordination, while the remaining three stayed on for longer terms (Kittiphat Sinak, Phramaha, 2007: 77-78). In terms of age groups, the majority of the ordained in Bangkok were between 20 and 25 years old, representing 63%, followed by the 26-30 age group representing 35.6%, and the over-40 age group, the smallest, representing only 1.4%. The situation in Ratchaburi province showed a similar trend, i.e. the majority of the ordained were between 20-25 years old, representing 73.3%, followed by the 26-30 age group, representing 13.3%, and the over-40 age group, the smallest, representing 3.3% (ibid, 92).

The data suggest that more young men preferred to go for short-term ordination. This was different from 1964 when P.A. Payutto commented on the changing situation of ordination. In those days, short-term ordination meant three months of traditional stay in monkhood. Presently, short-term ordination takes place outside the Buddhist Lent period, and lasts less than

one month. The number of short-term ordained monks/novices accounts for 70% compared to 60% in 1964 as cited by P.A. Payutto. Thus, the regular or long-term monks/novices are estimated to be 30-40% of the total monk/novice population.

Statistical Survey in 2007

The 2007 preliminary survey based its analysis on the 2002-2006 information obtained from the Information Technology Center, National Office of Buddhism. It must be admitted that the raw data were not perfect, as they did not distinguish between the new and existing monks. The analysis, nevertheless, yielded the following findings:

1. The overall number of monks/novices in the country between 2002 and 2006 is shown in the table below:

Table 1.1 Overall number of monks/novices in the country between 2002 and 2006.

Type	2002	2003	2004	2005	2006
Monks	267,818	246,112	265,335	265,442	250,437
Novices	103,026	89,920	76,352	75,093	62,830
Total	**370,844**	**336,032**	**341,687**	**340,535**	**313,267**

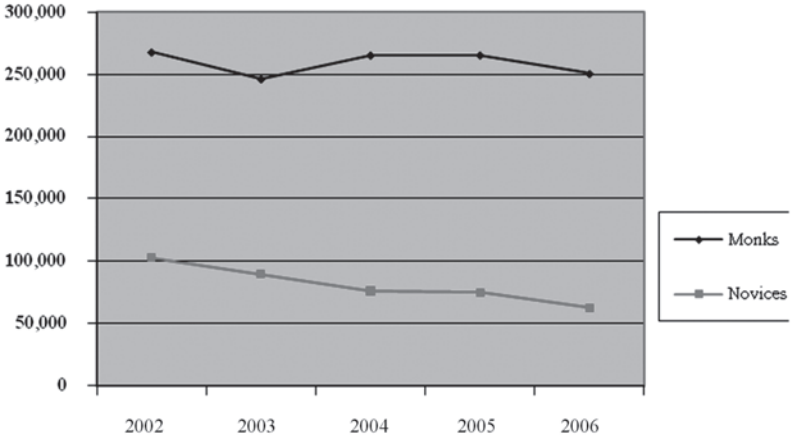

Chart 1.1 Graph showing the changing number of monks/ novices in the country between 2002 and 2006.

The chart shows an irregular changing pattern in the number of monks. Some years saw a significant reduction, followed by an increase in the following year, and another reduction afterwards. The number of novices reflects a consistent decline. The bar chart below gives a clearer picture of the trend (see Chart 1.2).

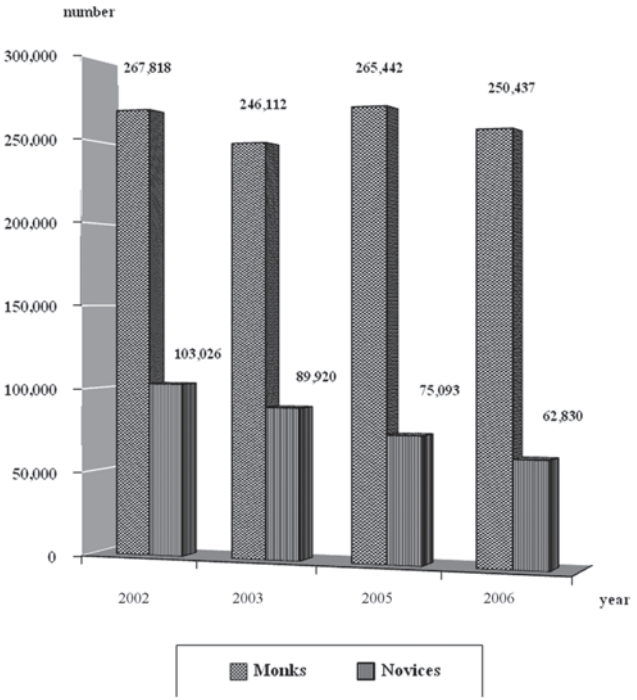

Chart 1.2 Chart comparing the number of monks/ novices in the country from 2002 to 2006.

It is noteworthy that the number of monks in the country from 2002 to 2006 stayed fairly stable, ranging from 250,000 to 300,000, while that of novices decreased on a regular basis, from 100,000 in 2002 to 60,000 in 2006.

2. In terms of percentage, the change of number during the previous four years is as follows: in 2002 the total number of monks/novices was 370,844 (100%) consisting of 72% of monks and 28% of novices. In 2006 the total number of monks/novices was 313,267 (100%) consisting of 80% of monks and 20% of novices. Against the reduced number of monks as seen above, the number of novices saw a regular decline. In other words, the percentage of the number of monks increased as the presence of novices declined (see chart).

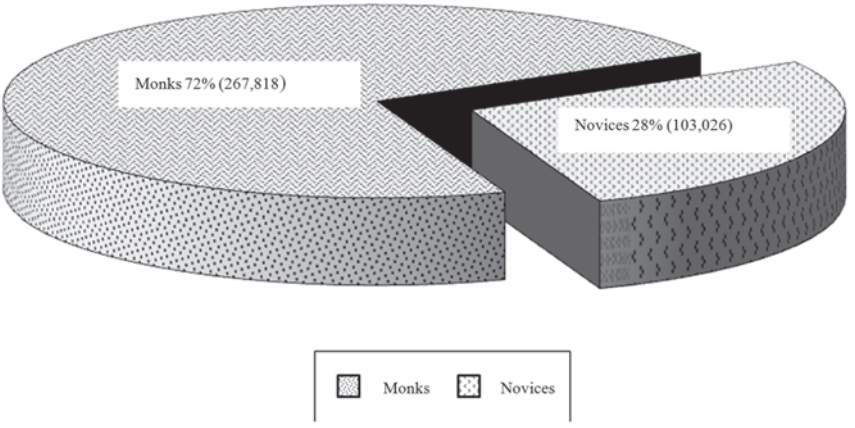

Chart 2.1 Comparison between the percentages of monks and novices in 2002.

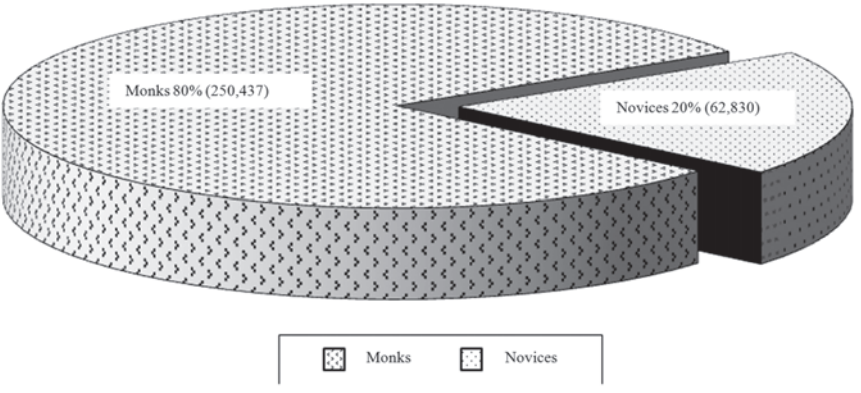

Chart 2.2 Comparison between the percentages of monks and novices in 2006.

Charts 2.1 and 2.2 indicate that the gap between the numbers of monks and novices was increasing. While the number of monks was in decline, novices who were supposed to carry on the torch were getting smaller in number and at a quicker pace. The fact that the numbers of monks and novices were in inverse proportion indicates that there will be fewer

monks in the future. The regular, long-term priests will further decline as time goes on, while religious heirs will be harder to come by.

3. In terms of geographical distribution of the number of monks/novices in the country in 2006, the total number was 313,267, which can be broken down into 250,437 monks (79.94%) and 62,830 novices (20.06%). The northeastern region saw the highest number of monks/novices, 123,776 (39.51%), followed by the central region (including Bangkok) with 98,647 (31.49%), the northern region with 32,750 (10.45%), the eastern region with 22,970 (7.33%), the western region with 19,808 (5.68%), and lastly the southern region with 17,316 (5.53%).

Table 3.1 showing percentages of monks and novices according to geographical distribution in 2006.

Geographical Region	Total		Monks		Novices	
	Number	%	Number	%	Number	%
Total	**313,267**	**100.00**	**250,437**	**100.00**	**62,830**	**100.00**
Central	98,647	31.49	84,470	33.73	14,177	22.56
Eastern	22,970	7.33	20,526	8.19	2,444	3.89
Western	17,808	5.68	15,701	6.27	2,107	3.35
Northeastern	123,776	39.51	98,592	39.37	25,184	40.08
Southern	17,316	5.53	15,239	6.08	2,077	3.31

Source: Information Technology Center, National Office of Buddhism as of 31 December 2006.

If one compares the 2006 statistics of the Information Technology Center, National Office of Buddhism, with the 1999 report of National Education Commission, Prime Minister's Office which relied on the Information Center, Ministry of Education, the change is quite evident. In 1999, the northern region recorded the country's second largest population

of monks/novices, i.e. 43,668 monks and 27,566 novices or 16.35% and 28.17% respectively. It was second to the northeastern region but preceded the central region. However, the 2006 statistics shows that the northern region was delegated to the country's third position after the northeastern and central regions.

4. The comparison of 2006 and 1999 statistics reflects another interesting change. In 2006 the number of monks declined from 1999 by 16,863 (6.30%) whereas that of novices was down by 35,010 (35.87%). When this picture is juxtaposed with the number of Buddhists in the country, it can be seen that the number of Buddhists in 2006 reduced from 1999 by 17.91% while the country's population increased by 1.89%. Thus, it could be said that the number of monks/novices is inversely proportional to the number of the country's population but relational to the number of Buddhists (see Table below).

Table 4.1 Comparison of numbers and percentages of monks, novices, Buddhists, and the country's population in 1999 and 2006.

Type	1999	2006	Increase/decrease
Monks	267,300	250,437	Reduced by 16,863 (6.30%)
Novices	97,840	62,830	Reduced by 35,010 (35.78%)
Buddhists	57,134,880	46,902,100	Reduced by 10,232,780 (17.91%)
Country's population	61,661,701	62,828,706	Increased by 1,167,005 (1.89%)

The statistics in 4.1 could be represented by a bar chart (Chart 4.1) giving a clearer picture of the change that took place during 1999-2006.

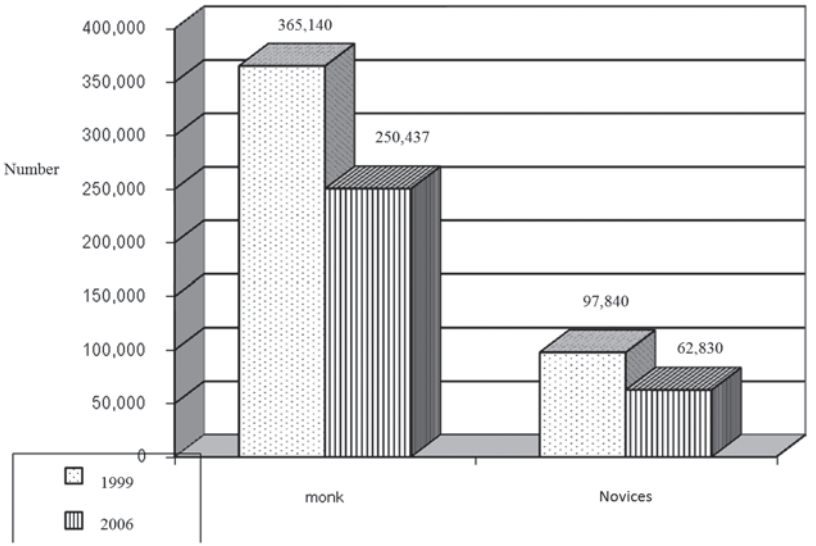

Chart 4.1 Comparison of the reduced numbers of monks and novices between 1999 and 2006.

Using the 1964 statistics from P.A. Payutto's study and those in 1999 and 2006 to compare the number of monks/novices with the total Thai population, one will find that while the country's population increased significantly, there was little change in the number of monks/novices. In other words, the number of monks/novices did not rise in proportion to the increased population (see Chart 4.2).

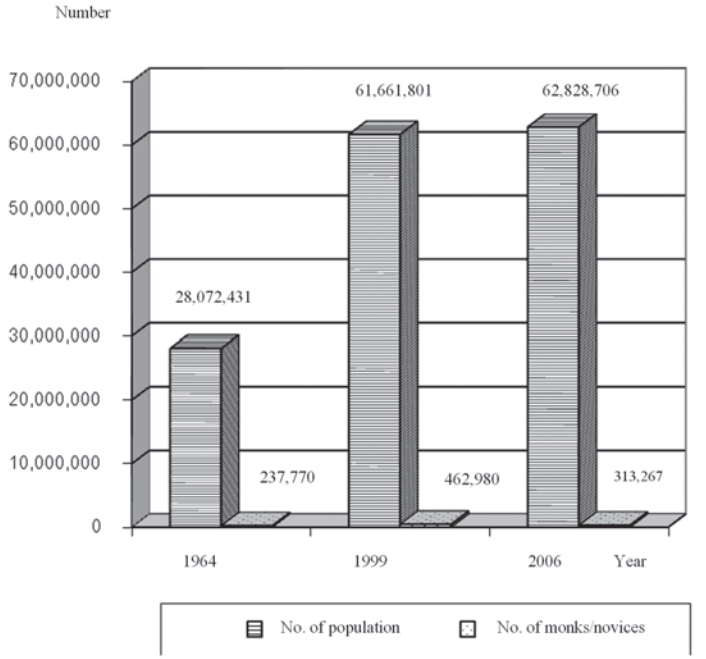

Chart 4.2 Comparison of the Thai population and numbers of monks/novices in the country in 1964, 1999 and 2006.

5. Based on the above statistics, it can be concluded that the numbers of monks/novices declined on a regular basis during the years of the survey. However, the statistics from 2002 to 2006 from the National Office of Buddhism did not differentiate between the existing and new monks/novices. This survey, therefore, cannot specify the actual number of monks/novices with more than one year of religious life who constituted the regular force responsible for religious duties or propagation of Buddhism. In view of the inadequacy of the yearly statistics, the researcher resorted to P.A. Payutto's conceptual framework to approximate the actual number of long-term ordinated monks. This is done by leaving out the 60% of monks with short-term traditional ordination. This figure was in line with Chamnong Adiwatthanasit's study on "Ordination Behaviors of Thai People". Some went into monkhood because they followed the ordination

tradition, because they wanted to devote ordination merit to someone dear to them, or simply to afford livelihoods. This group made up 62.88% of the total. Others wanted to preserve the Dhamma-Vinaya, to carry on the torch of Buddhism, or to live out their faith. This group constituted the remaining 37.12%. The figure that was left out corresponded with the findings of Phramaha Kittiphat Sinak's study which indicated that those who underwent short-term ordination from 7 days to one month in Bangkok and Ratchaburi province constituted nearly 70% of the monks (i.e. 68.30% and 68.32% respectively). Thus, it can be surmised that the figure of 60% of the yearly statistics did not reflect the real presence of the monkhood. 40% would represent a more truthful picture. A consideration of the statistics in 1999 and 2006 yields the following outcomes:

5.1 In 1999, the total number of monks/novices was 462,980 (100%). Subtracting 60%, the actual number would be about 185,192. Against the total population of 61,661,701, the ratio of monk/novice to the general population in 1999 would be 1 : 333.

5.2 In 2006, the total number of monks/novices was 313,267 (100%). With 60% subtraction, the actual number would be about 125,307, about 59,885 (32.34%) lower than in 1999. Against the total population of 62,828,706 (with an increase of 1,167,005 or 1.89% from 1999), the ratio of monk/novice to the general Thai population would be 1 : 501 (see Table 5.1).

Table 5.1 Comparison of the reduced number of monks/novices in 1999 and 2006 with the country's total population.

Year	Monks/novices	Total population	Average ratio
1999	185,192	61,661,701	1 : 333
2006	125,307	62,828,706	1 : 501
Reduced/ increased	Reduced by 59,885 (by 32.34%)	Increased by 1,167,005 (1.89%)	Reduced by 50.45%

According to P.A. Payutto (1986), in 1964 the ratio of monk/novice to the general population was 1 : 110. In 1999 the ratio increased to 1 : 223, while 2006 saw it increase further to 1 : 391. In other words, the ratio of monk/novice to the general population in 2006 decreased by 50.45% from 1999 and by 344.45% from 1964.

One assumes that after 60% subtraction, the number of long-term, regular monks/novices in 2006 would be 125,307 against the total Buddhist population of 46,802,100. The ratio of monk/novice to the Buddhist population would then be 1 : 371. If one further subtracts 25,061 novices (20%), the number of monks would be 100,246, and the ratio of monk to the Buddhist population would be 1 : 466. Without taking into account various social factors, including the shortage of monks in the rural areas, the situation of Buddhist monks would not be too much of a concern.[2]

2007 Field Survey

A field survey was carried out in Chiang Mai province. Interviews were conducted during August 20-21, 2007 with ecclesiastical officers at the level of abbot and deputy abbot in 10 *wats* (monasteries) in the districts of Mueang, Hang Dong, and San Pa Tong, as well as with Phrakhru Phipitsutathon (Dr. Phramaha Boonchuai Sirintharo), Vice Rector, Mahachulalongkornrajavidyalaya University, Chiang Mai Campus. Another field survey was conducted in Ubon Ratchathani province, interviewing deputy ecclesiastical provincial governors, deputy ecclesiastical district officers of Det Udom, assistant ecclesiastical district officers, ecclesiastical sub-district heads, and abbots of six *wats* during August 26-27, 2007. Other interviews were also given by an ecclesiastical sub-district head and

[2] To render this study more up-to-date, the author conducted further surveys on the number of monks/novices from 2007 to 2010 based on the information obtained from Information Technology Center, National Office of Buddhism. It is found that there are some interesting positive changes as well as challenges. The information on this matter can be found in the "Annex" to the paper.

secretary to the ecclesiastical district officer of Tha Maka, Kanchanaburi province, ecclesiastical sub-district head of Nong Khayang, Uthai Thani province, and student monks of Mahachulalongkornrajavidyalaya University who used to spend some time at the study centers of a *wat* in Phang-Nga province and of Wat Sariang in Mueang district of the province of Nakhon Si Thammarat. Several interesting observations were made; however, the details will not be presented here since they are not the focus of this study.

On the basis of the findings of the field surveys and the aforementioned statistics, the overall picture of the Buddhist situation in Thailand and its possible impacts on Buddhism in general is as follows:

1. The Nature of the Problems

While the number of monks was declining in urban areas such as Mueang districts and other provincial districts, there were still monks and novices in significant numbers outside the urban areas such as sub-districts and villages. Usually there were few regular monks, ranging from one to four, residing in each *wat*. In most cases, there was only one monk per *wat*, acting as abbot or discharging abbot duties. Some *wat* did not have monks residing permanently throughout the year. The community, however, solved the problem by inviting monks from other areas or *wats* to stay in its vacant *wat*. The length of stay partly depended on the faith and attentiveness of the community and partly on how the monks conducted themselves in their daily religious activities. If there was no untoward incident, the villagers would usually ask them to stay on.

Economic conditions were not the most significant factor accounting for the number of monks in each *wat*. Whether in or outside the urban areas, their number remained more or less the same. Nevertheless, economy could to a certain extent determine the number of monks. Affluent families did not want their children to remain in monkhood for too long, as there were better educational choices available or they attached greater importance to family security. The most important factor was always education. A number of rural people still looked to ecclesiastical education as a means to improve their social or economic standing, while many monks needed

further educational opportunities. Those *wats* that attracted a lot of monks and novices tended to be those that offered Pali study or general Buddhist Scripture programs, and were situated not too far away or were easy to get to. The situation was also true with *wats* famous for meditation practice. On the contrary, *wats* that were not involved in religious education or affairs would have few monks residing. A number of monks/novices stayed in monkhood because they hoped to receive further and higher education. Others stayed on because they had administrative duties (ecclesiastical officials) or educational obligations to attend to (e.g. dhamma teachers). In areas with little or no educational opportunity, monks or novices who had stayed in monkhood for more than a year would eventually leave for another district, province or region where education was more available. Bangkok, for instance, was an ideal place for further education.

Thus, monks who permanently stayed in the *wat* usually were ecclesiastical officials charged with administrative duties in such positions as abbot, acting abbot, provincial, district, or sub-district governor. These kinds of obligations held in check a number of monks who stayed in monkhood out of religious necessity. At any rate, such duties were no guarantee that they would stay in monkhood or in the locality forever. Administrative duties could be complex, giving rise to anxiety or even causing conflict with other monks. If the ecclesiastical officials did not receive cooperation or support from those concerned, they might eventually become disheartened and decide to leave the administrative positions or even monkhood.

Each *wat* surveyed saw a significantly reduced number of novices. Some *wat* might have monks but no novice. For instance, in Tha Maka district of Kanchaniburi province, Wat Mai Charoenphon in 2007 had 28 monks but no novice at all. Wat Takhram-en had 33 monks and only one novice. The entire sub-district of Wai-neo had altogether 71 monks and again one novice. The shortage of novices was becoming a norm in every region. In the northeastern region, for example, the sub-district of Top-hu had 61 monks and 2 novices. The future trend was therefore easy to foresee in light of the statistics and field surveys. Older monks with long

years of experience in religious education and dissemination would be smaller in number for health reasons. Some monks of the middle generation might be available for replacements. However, the new generation of monks was a matter of concern for the Sangha, for the statistics and findings of the field surveys all pointed in the same direction, i.e. less long-term ordination and significantly fewer novices.

The modern generation opted for a shorter stay in monkhood and preferred being ordained outside the Buddhist Lent. Many considered it to be a sin if they were to be ordained and leave monkhood during the Buddhist Lent. About 40 years ago, a short-term ordination would mean a stay of three months during the Buddhist Lent. Today, a short-term ordination means any period from 7 to 15 days. In terms of short ordination, the number of ordained monks did not decrease dramatically. A large number of Buddhists still like to be ordained as monks each year. Yet, the purpose of ordination has changed. In the past, they expected to receive religious teaching and became morally better persons. Now, it is more of a traditional practice to repay their parents' kindness. This surely is indicative of the coming crisis regarding the number of monks in the future.

In terms of the quality of monks, there might not be clear-cut evidence that their quality will be lower, as no tool was created to measure this aspect in this survey. However, in the self-assessment by the monks in each area under survey, almost every interviewee said that the quality of the monks today was much lower. Some even commented that the more recent generation of monks had little or no quality. As far as the length of ordination is concerned, those who opted for a longer term tended to be older people with little enthusiasm to learn the Dhamma-Vinaya. They were more inclined to seek refuge in religion in the later stage of their lives. Thus, it could be surmised that the overall quality of monks today is lower than that of the past.

2. Main Reasons for the Decreased Number of Monks[3]

The study finds that there are several major reasons for the decreased number of monks and novices, some of them overlapping or related. They are as follows:

2.1) The reduced number of novices seems to be due to the compulsory education policy of the State. Compulsory education is now extended to Grade 9 and will soon be extended to Grade 12. As a result, less and less children are being ordained as novices. In the past, ordination provided an education opportunity. Many novices in rural areas stayed on and became young monks because they wanted to continue their education or because of their strong faith in the religion.

2.2) There is a shortage of labor in the villages. In former times, a household with several children could afford to have a son who took (traditional) ordination stay in monkhood for the entire Buddhist Lent period or even for a year. The practice would pose no problem for the family. Today, families tend to have only one or two children; hence their labor contribution to the family is essential, and therefore a young man cannot remain in monkhood for long. One month, perhaps, is the maximum, and in most cases, only 15 days. Preferably, ordination would be held in the dry season. The Buddhist Lent is the time for farming which requires much labor. The village is short of manpower because the family has become smaller as a result of a successful family planning during the last 30 years. In addition, owing to modern economic growth, more employments are available in the rural areas.

2.3) "Knowledge" obtained from ordination does not correspond with current reality. In the past, people became ordained because it was a "useful" thing to do for a lay person. An ordained monk would learn how to read and write as well as other practical skills including technical education. Upon leaving the monkhood, he would be more eligible to start

[3] The material in this section was based on the interview with Phra Phaisan Wisalo by e-mail.

his own family, and many parents would be willing to give him the hand of their daughters. An ordained life would have made him a "ready" man, and would have provided him and his family with other spiritual benefits. Today, however, knowledge necessary for a layman is available elsewhere, such as schools, universities, and institutions other than the *wat*. The kind of knowledge essential to modern living is also different from that of the past. *Wats* are no longer considered as exclusive sources of knowledge, and monks no longer as experts. Hence, it is no longer considered necessary that a person obtains education in the *wat* system.

2.4) The *wat* does not have proper educators or teachers well-versed in worldly affairs, moral studies, or even social manners. At present, most *wats* in the rural areas do not perform this function, because the abbots or monks do not have the required knowledge or skills. This is partly because they are newly ordained, they possess little knowledge of the Scriptures and Dhamma practice, and they have little practical skills. These factors render it nearly impossible to attract young men to join the Sangha. They also fail to motivate the parents to support their sons' long-term ordination, and so they remain happy with a 15-day traditional ordination.

In summary, the *wat* has lost its former social functions, retaining only ceremonious duties that have little to do with worldly affairs. It focuses more on merit-making appeals and religious rites and ceremonies, and has lost the ability to draw the crowd to its premises as it once did.

2.5) Monks do not inspire confidence. Although monks today do not have a lot of worldly knowledge, they can still attract the community to the *wat* if their moral conducts are exemplary. Parents want their children ordained by, and learn how to conduct themselves properly from, senior monks. Unfortunately, very few abbots seem to lead inspiring lives. Their conducts are oftentimes not too different from those of ordinary lay people. It does not come as a surprise, therefore, that the villagers are not too eager to have their children ordained by such monks. There are even instances where members of rural communities in the areas surveyed get into fights with the monks or abbots of their *wats*.

2.6) All of the above five factors seem to be the reasons that keep people away from ordination. What is more, there are fewer monks in the rural areas because they prefer to reside in towns or cities. Those living in towns do not wish to move to rural areas, probably because they prefer a life of comfort. However, the issues of comfort aside, several monks are unwilling to stay in the rural areas because they do not feel any tie or affection to the place or to their fellow monks. The fact that they have to fend for themselves to have access to higher education has made them feel indifferent to their environment. In addition, once they have succeeded in obtaining higher education, the existing educational system in the rural areas does not give them the opportunity to put their knowledge to good use. The only way they can utilize their knowledge and play some meaningful role is to stay in the urban community or in areas where educational opportunities are available, such as Buddhist universities or Buddhist Scripture schools. They prefer staying in such environments to starting something anew themselves in which success is uncertain.

2.7) Monks or Buddhism are no longer the go-to choice of society mainly because the *wat* cannot provide education in a systematic and successful manner. Admittedly, although the education provided by the *wat* might not have been all that systematic in the past, it still functioned adequately in the worldly and moral spheres; at least, this was the case with the *wats* in the urban area. Today, it is ineffective in providing worldly knowledge, giving way to schools and universities. Religious education does not fare too well either. Consequently, the *wat* has lost its appeal for people to ordain or study with the monks. The monks themselves are found rather lacking in quality. Not only do they have limited knowledge, their daily conducts are also often far from praiseworthy. They have become more materialistic. This problem is tied to the education policy of the Sangha that allows each *wat* to have a free hand in managing its affairs. The Sangha would supervise only the examinations and assessments. Education focuses on the knowledge of the scriptures rather than practice, relying on rote learning rather than thinking skills and practical application appropriate to the modern world.

3. Overall impacts on Buddhism

The shortage of monks does not seem to be as serious a problem as the lack of their quality. Phra Phaisan Wisalo commented that if the number of monks was to reduce by half, and their quality was to double, the Sangha institution and Thai society would be much improved. In the context of low quality, the bigger number of monks might undermine public confidence in the Sangha, and it would indeed be an immense burden to discipline them or prevent them from going astray from the Dhamma and Vinaya. On the other hand, the public might view a significantly reduced number of monks as a spiritual deficiency. People feel more comfortable with the presence of monks in the village, for monks provide a spiritual comfort, perform various religious functions, and encourage the community to make merits. Merit-making is something that the community values highly.

Perhaps the most serious cause for concern is that monks are no longer spiritual leaders. In the past, monks also exercised social leadership roles. This is unfortunately no longer the case today. They should still act as role models to guide and remind people of the value of spiritual happiness. Spiritual leaders that guide their society towards the path of the good life and real happiness in a world where materialism is shunned and mutual help encouraged is needed in every society. If monks cannot perform their roles as spiritual leaders, Thai society may easily fall into spiritual malaise from which it may be rather hard to escape. Sadly, monks today do not seem to help correct people's distorted views, which may account for their spiritual crisis. Worse yet, they often encourage such views, especially when it comes to a desire for material gains, hope for a windfall, fortuitous success, and divine intervention.

Professor Dr. Prawase Wasi said that Buddhism is an ideology concerning the community. The Sangha is a community. Ordination is related to the community; it does not occur in isolation. When monks function as a community, it will help prevent them from breaking the Vinaya (Princess Maha Chakri Sirindhorn Anthropology Center, 1999: 29). A community life implies mutual help and appropriate social relationship between the monks and other Buddhist members or the lay people. Without

proper mutual help regarding the basic necessities and loving kindness between the monks and lay people, the fabric of the Buddhist community may be easily destroyed. In other words, the fact that there are few monks in each *wat* is a reason why monks cannot keep the Dhamma-Vinaya for long, as they live in isolation in the *wat* environment. At the same time, lay people tend to leave the issue of a decreased number of monks to the Sangha to solve. This evidence is supported by the ordination trend of the new generation who prefer to follow short-term traditional ordination as a gesture of gratitude to their parents only. Other practices include ordination as an education opportunity for social upgrading or a rest period at the end of life. The latter group usually will not study the Dhamma-Vinaya or follow a strict religious life. Allowing such incidents to happen reflects a lack of responsibility on the part of lay people in the community. As a result, some monks may become frustrated and leave, according to several ecclesiastical officials interviewed.

The traditional way of passing on Buddhist teachings may also be affected, as it takes some time before the newly ordained monks can begin to fathom the depth of the Buddhist teaching both in theory and practice. The teaching monks usually are practitioners with many years of experience. In the current situation, not only is the number of monks decreased, but the monks who continue to stay in monkhood are also fewer. Monks with few years of experience may not have sufficient knowledge to pass on the teachings or educate the community. Meanwhile, those with sufficient knowledge tend to stay in urban areas with schools or universities or in remote areas difficult for the rural folks to get access to. The kinds of traditional Dhamma practice needed by local communities are harder to find. With fewer responsible monks who could act as resource persons and with fewer candidates to carry on the torch, it will be difficult to provide quality education as an alternative option for modern society. All these negative factors fuel one another, leading to fewer monks receiving training and even fewer religious heirs to pass on the teachings.

The fact that the new generation does not seem to appreciate the significance of religion has become a huge concern affecting Buddhist society as a whole. The situation has been going on for quite some time.

The Sangha generally is not aware of the extent to which modern society, together with all kinds of media, could exert influence. In addition, as a result of the government economic and social development policies, more rural areas have been urbanized, thus affecting the existence of the rural *wat*. The new lifestyle that comes with development efforts and modern cultural influx from the outside has an impact on the rural community. More attention is given to wealth and affluence that go counter to traditional religious belief. The intellectual arrogance and direction of the country's economic and social development modernization efforts are difficult for the Buddhist institution to withstand (Princess Maha Chakri Sirindhorn Anthropology Center, 1999: 26). Besides, the Sangha does not offer any concrete alternative to society. Even religious education has to follow the national trend. If the Buddhist education cannot produce academic excellence that the Sangha is supposed to possess or lead society to an acceptable level, the Sangha will be a meaningless force to society, as commented by to P.A. Payutto forty years ago.

Despite being aware of the direction in which social development is taking, the Sangha has not come up with new ways to develop existing monks with the ability to effectively respond to the needs and problems of the modern society. The kind of education that the new generation is interested in is geared towards upgrading their social existence, but such education, however, cannot create religious ideology in the minds of the new generation of monks. In the meantime, the efforts to create religious heirs continue in the same old vein, providing no new knowledge or experience in the understanding of the Dhamma. Monks in the rural areas are small in number, with little religious education, limited resource support from the government, and inadequate intellectual inputs. In such a situation, they do not have an enabling environment for mutual learning and meaningful exchange of experience based on long years of religious involvement or dissemination. It is, therefore, difficult for them individually or for the community to keep a strong faith and bring about meaningful and positive impacts in the future.

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Annex

Latest Additional Information Survey (2011)

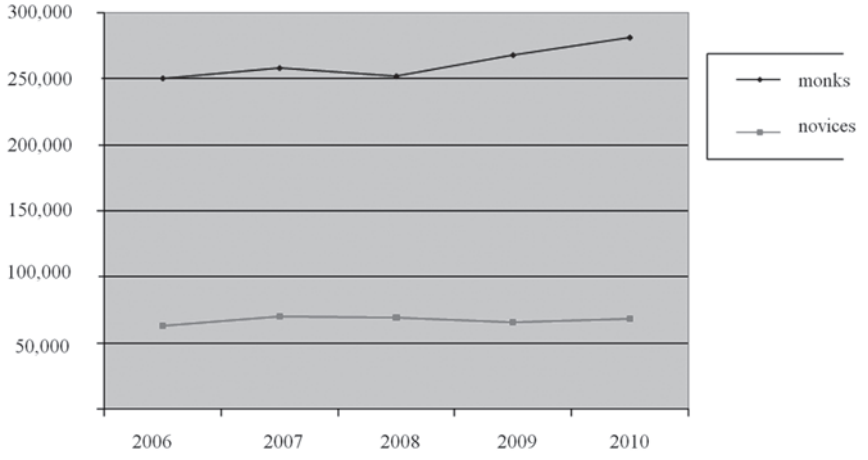
The information of Information Technology Center, National Office of Buddhism, between 2007 and 2010 (as of 31 December 2007, 31 December 2008, 31 December 2009, and 31 December 2010) can be analyzed to show the increase and decrease in the numbers of monks and novices in the country as follows:

1. Table showing the total number of monks and novices in the country during 2007-2010

Type	2007	2008	2009	2010
Monks	258,163 (78.64%)	251,997 (78.36%)	267,939 (80.25%)	281,168 (80.42%)
Novices	70,125 (21.36%)	69,607 (21.64%)	65,937 (19/75%)	68,459 (19.58%)
Total	**328,288 (100%)**	**321,604 (100%)**	**333,876 (100%)**	**349,627 (100%)**

Number of Monks-Novices 2006-2010

The above table can be turned into in a bar chart to illustrate the increased number of monks and while the number of novices stays fairly consistent.



On comparing the increase and increase in numbers during 2007-2010, one will find some interesting changes as shown in the table below:

2. Table showing the increase and decrease of monks and novices in the country (during 2007-2010)

Type	2007	2010	Increase/decrease
Monks	258,163	281,168	+ 23,005 (8.91%)
Novices	70,125	68,459	- 1,666 (2.37%)
Total	**328,288**	**349,672**	**+ 21,384 (6.51%)**

The table above reveals the increased number of monks and reduced number of novices, while the overall picture shows how the monks increased during the four years under comparison. However, the table below comparing 2002 with 2010 reveals an increase in the number of monks and

a reduced number of novices. Table 4 also compares the numbers of monks and novices in 1999 and 2010.

3. Table comparing the increase/decrease of the numbers of monks/novices in the country (2002-2010)

Type	2002	2010	Increase/decrease
Monks	267,818	281,168	+ 13,350 (4.98%)
Novices	103,026	68,459	- 34,567 (33.35%)
Total	**370,844**	**349,627**	**- 21,217 (5.72%)**

4. Table comparing the increase/decrease of the numbers of monks/novices in the country (1999-2010)

Type	1999	2010	Increase/decrease
Monks	267,300	281,268	+ 13,868 (5.18%)
Novices	97,840	68,459	- 29,281 (30%)
Total	**365,140**	**349,627**	**- 15,513 (4.24%)**

On comparing Table 4 above with Table 5.1 (in the main paper), one will find that from 1999 to 2006 the overall number of monks/novices reduced by about 59,885 or 32.34%. When the 1999 statistics is compared against that of 2010 in terms of types, the number of monks increased by 5.18%, while that of novices reduced by 30%. The overall picture, however, is that the number of monks/novices reduced from 1999 by about 15,513 or 4.24%. This was different from the period between 1999 and 2006 in which the numbers of monks and novices went in the same direction, i.e. going down. The positive change in information during 2007-2010 warrants an explanation as to the cause and possible consequences. This will need more detailed and competent information surveys from the agencies concerned.

Interpreting and Explaining Buddhism through the Framework of Scientific Thought: Case Studies

Pagorn Singsuriya[1]

Abstract

This study aims to a) understand the hermeneutics of Buddhism within scientific frameworks; b) evaluate the interpretations and explanations of Buddhism using scientific frameworks; and c) recommend appropriate approaches to the interpretation and explanation of Buddhism through scientific frameworks by considering case studies in Thailand. Study results have shown that a) the models found in various case studies comprise a "reactionary hermeneutics" and a "hermeneutics of corporality"; b) that fallacies and scientific misunderstandings are used in the development of hermeneutics; and c) that appropriate approaches to the interpretation and explanation of Buddhism using science should be developed in a mutually supportive framework.

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It is quite common in Thailand to consider Buddhism side by side with science – a practice not only confined to academic circles but also found in popular publications throughout society. This study aims to evaluate this movement with a particular emphasis on aspects of the interpretation and explanation of Buddhism that rest on natural science. The objective is to analyze the hermeneutics that utilizes scientific frameworks, as well as to evaluate such an effort and suggest approaches that are more appropriate to the interpretation and explanation of Buddhism. The study will be carried out through the analysis of important case studies.

In general, discussing Buddhism outside its original context by appealing to science can be considered as producing a new interpretation and explanation of Buddhism. Nevertheless, not every instance in which Buddhism is brought together with science constitutes an interpretation and explanation of Buddhism within a scientific framework; such interpretations and explanations are but one type of hermeneutics among many. Thus, it will first be determined here what "interpretations and explanations" are. Then, various Thai case studies in which Buddhism is examined through science will be considered. These case studies will subsequently be analyzed and evaluated, and approaches to further interpretations and explanations suggested.

1. "Interpretation" and "Explanation" Defined

Broadly speaking, interpretation is assigning meaning to that which is interpreted; in other words, it is determining the meaning of what is interpreted. At the same time, explanation is the demonstration of why it is that the subject in question should mean what it does (see Ricoeur, 1981: 216-217 and *Explication & Interpretation*, 1998). A more detailed explanation requires an understanding of the notion of the "hermeneutical circle", which is essential to hermeneutics. The hermeneutical circle is a process of human understanding that seeks to understand parts that constitute the whole and the whole by means of its parts (Ricoeur, 1981: 211-213). The terms "parts" and "whole" can be differentiated as follows: a part is anything that happens in the text, whereas the whole is the meaning of the entire text. In this way, interpretation is giving meaning to the parts

in the context of the whole, and explanation is a demonstration of the meaning's origin. Thus, as there is a continuum between interpretation and explanation, there can be no distinct differentiation drawn between the two terms, and they must be spoken of together.

2. Buddhism and Science in Thailand

This section will consider the relationship between Buddhism and science in the context of Thai society, taking into account various works in which the natural sciences are applied to Buddhism. It aims at revealing the relationship's overall movement within the context of Thai society.

Phra Thammakosachan (Prayun Thammachitto) (2009a) writes of the interaction between Buddhism and science that they should not be compared but rather integrated, as comparison is a means of study that keeps the things compared endlessly parallel, whereas integration creates a complete whole. He specifies two forms of integration: one which "takes Buddhism to be fundamental and supplements it with modern science" and the other which "takes modern science to be fundamental and supplements it with Buddhist morality" (p. 17). It can be seen here that Buddhism's part that supplements science is limited to "morality"; for while science must be guided by ethics, such as in conducting research, *"the aim of the sciences is to discover the truth, not the good,"* as Phra Thammakosachan (Prayun Thammachitto) (2009a) quotes Einstein.

The above explanation demonstrates clearly that this is not a matter of using science to verify whether or not the Buddhist teachings are true. The standpoint is that Buddhism is already correct and complete both in terms of the "true" and the "good", and the use of science is intended to emphasize these points, particularly in communicating with the younger generations.

The reasons that Phra Thammakosachan (Prayun Thammachitto) gives to endorse the view that science supports Buddhism are as follows: (a) Einstein endorsed Buddhism both directly and indirectly (Phra Thammakosachan, 2009a: 8-10), and scientists like Murray Gell-Mann demonstrated their acceptance of Buddhism by naming their discoveries

after concepts from Buddhist teachings, such as "the Eightfold Path" (Phra Thammakosachan, 2009a: 19); (b) findings or theories from science may be used to confirm Buddhist teachings, such as findings about atomic structure which support teachings about impermanence (Phra Thammakosachan, 2009a: 19-20 and 2009b: 51-52), or the theory of relativity, which seems to support the teaching of dependent origination (Phra Thammakosachan, 2009a: 20); and (c) scientific findings that are in line with things that are taught in Buddhism, such as the discovery in astronomy that there are multiple universes, which is in line with the Buddhist teaching on "the trillion universes" (Phra Thammakosachan, 2009a: 20-21).

The above are some of the models in which science is brought into engagement with Buddhism. These models can be commonly found in the works of other thinkers and writers, such as Som Suchira (2010: 23) and Supphawan Phiphatphanwong Krin (2007: 32), both of whom cite Einstein to support the claim that Buddhism is compatible with science. Similarly, it can be observed that models (b) and (c) can be found in other works, such as in Amnuai Khamprang (2000), explaining that the discovery of atoms, which are merely empty space and energy ("blocks of tightly compressed energy"), supports the teaching of *Anattā* (p. 78) and that scientific knowledge concerning vision and hearing is compatible with *Abhidhamma* teachings concerning *Āyatana* or sense-bases (p. 20-21). Although through different reasoning, Rotrung Suwansutthi (2009: 97-99) reaches the same conclusion. Newton's Third Law ("To every action there is always an equal and opposite reaction") is compatible with teachings about the laws of *Kamma* (Amnuai Khamprang, 2000: 85-86). In the same way, Chaiyaphruek Phenwichit (1999: 83) regards the law of conservation in physics, which states that matter and energy are never lost, to be compatible with the laws of *kamma* in Buddhism. Olan Phiantham (2006: 96) points out that the scientific estimates of the size of the atom are in line with what is stated in Buddhism. Other examples of these models have been given sufficient treatment in Watchara Ngamchitcharoen (2011), in which the issues of time and space, causality, and the inseparability between matter and energy, among others, are discussed.

Another model pertinent to what has been discussed here is the use of scientific knowledge to support Buddhist frameworks. For example, Olan Phiantham (2006: 48) uses the genetic code, or DNA, to help explain the teaching of *regenerative kamma* by explaining that it determines each individual's genetic code. An example of usage that bears similarities but is not exactly the same can be found in Supphawan Phiphatphanwong Krin (2007: 70), in which scientific terminology such as "mass" and "energy" are used in the Buddhist framework to refer to the external sense-bases; here, form, sound, smell, taste, and touch are deemed "mass", while the mind is regarded as "energy". Such usage may be regarded as similar to the above in the sense that scientific terms and concepts are used in a Buddhist framework, yet different in that they are used to refer to things different from their original meanings. Another model involves the use of science to demonstrate that incredible or fantastical elements found in Buddhism should actually be thought of as plausible, such as the use of string theory to explain the ability to levitate or disappear (Olan Phiantham, 2006: 240-241).

There are further models still in which Buddhism and science are considered in conjunction. One example can be found in the case of Phra Khamphirayan Aphipunyo (2008: 103, 125 and 135-136), where it is proposed that Einstein was able to comprehend truths equivalent to the truths of *Dhamma* because he was an *Ariyapuggala*. In any case, no clear evidence for this claim is presented aside from the marvelous nature of Einstein's discoveries which only extraordinary individuals can understand. Chaiyaphruek Phenwichit (1996: 37) expresses a compatible vision in comparing a scientist's comprehension of a great truth with the enlightenment of an *arahant*, stating that they have shared characteristics. The author also proposes that the discoveries of the various great scientists can be explained through practice of the *Dhamma*, namely, *pariyatti-patipaṭti-paṭivedha*, or theory-practice-realization (Chaiyaphruek Phenwichit, 1999: 232). Furthermore, he demonstrates how both Einstein's personal qualities and process of discovery share similarities with those of the Buddha. For example, both the Buddha and Einstein possessed great kindness (Chaiyaphruek Phenwichit, 1996: 74), and both the Buddha's

and Einstein's discoveries were based on conjecture and falsifiability (Chaiyaphruek Phenwichit, 1996:87). These points correspond with Phra Thammakosachan (Prayun Thammachitto) (2009a: 44-45) and Amnuai Khamprang (2000: 102) though details regarding scientific understanding differ.

Conversely, Supphawan Phiphatphanwong Krin (2007: 33-34) states that great scientists and *arahants* are not that similar, pointing out some questions that Einstein raised but was unable to answer. For example, he was unable to find a stable point in the universe from which to make measurements, such as velocity, and so had to assume a reference point. However, with the author's personal practice of *Dhamma*, she could see that the answer concerning a stable reference point was likely to be found in Buddhism.

We have seen above how scientific discoveries are interpreted and explained in Buddhist frameworks, as in the cases of Phra Khamphirayan Aphipunyo and Chaiyaphruek Phenwichit, as well as how scientific knowledge is used to support teachings found in Buddhism, such as genetics as in the case of Olan Phiantham. Furthermore, we have seen how such knowledge is interpreted and explained in a Buddhist framework, such as with mass and energy in the case of Supphawan Phiphatphanwong Krin. In addition to these works, there is also Saengthian Yutao (2009) demonstrating how science can be interpreted and explained in the Buddhist framework. This work compares statistics, as a scientific tool, with Buddhist teachings. It concludes that the teachings are interpolated in statistics in many ways. For instance, the tendency towards the middle ground is related to the Middle Path, while the analysis of independent variables and dependent variables is related to suffering and the cause of suffering, and statistical variance is related to the principle of impermanence (Saengthian Yutao, 2009: 36). The author has found so many such interpolations that he has declared that statistics correlates with Buddhism.

The first important question that arises from studying these works is one that has been raised in Jose Ignacio Cabezon (2003: 45-49) regarding the overall conclusion that Buddhism and science are compatible. On the

one hand, it must be demonstrated that the differences between the two are not significant enough to render them incompatible; on the other, it must be demonstrated that the similarities are significant enough that they can be regarded as compatible. This point is missing from these works, the majority of which simply conclude compatibility between Buddhism and science. Such a conclusion, drawn from the assumption that as there are some things in science which accord with, are similar to, or correspond with Buddhism, then science is compatible with all of Buddhism, does not demonstrate how significant the accords, similarities, or correspondences are, and does not take into account what differences there are which might refute it. The general problem here is the risk of fallacy, resulting from hasty generalizations and question-begging with regard to the significance of the similarities and differences.

The next problem is that though some scientific concepts may correspond with Buddhist teachings, this does not necessarily mean we can conclude with any certainty that such correspondence supports Buddhism's validity. The examples above all show that the aim of connecting science to Buddhism is to demonstrate that Buddhism is justified. Such an endeavor can be regarded as a form of religious propagation. However, the scientific concepts which are held to be complementary with Buddhism, in truth, also correspond with other religions, such as Taoism and Hinduism, to the extent that the oft-quoted book *The Tao of Physics* by Fritjof Capra (1975) refers to Eastern religions as a whole, as if they are indistinguishable. Furthermore, it appears that certain scientific concepts are particularly complementary with certain religions.

An example of complementarity from *The Tao of Physics* concerns the Principle of Uncertainty, which Capra (1975) states is parallel to the Taoist concept of *ying-yang* (p. 160). When he discusses the bootstrap theory, it is in relation to the Avataṅsaka school of Buddhism (p. 292); when he discusses the s-matrix theory, it is in relation to the *I-Ching*; and when he discusses the relationships between sub-atomic particles or bubble chamber photographs of interacting particles, it is in relation to the dance of Shiva (p. 245). Therefore, it cannot be concluded, from the examples given, that science is complementary with Buddhism (or Theravada Buddhism for

that matter), unless complementarity with "Eastern religion" is concluded wholesale (which Capra does). Such a conclusion reduces religions which differ greatly to mere "Eastern religions" that are valid because they are complementary with science. Considering Buddhism and science together in this way would, instead of providing support, actually end up short-changing Buddhism and turning it into something else.

There is another related problem. Research has shown that various works stating complementarity between scientific theories and Buddhism are aimed at validating Buddhism while generally assuming that Buddhist teachings contradict those of other religions. If it is found, at the same time, that scientific theories are complementary with religions that contradict Buddhism, confusion will follow, as it will mean that Buddhism's validity is based on the same premises as other religions it supposedly contradicts.

Another problem encountered is the issue of accuracy regarding how scientific knowledge is used. A clear case study can be found in the critique of Som Suchira's *Einstein Discovered, the Buddha Saw* by Buncha Thanabusombat (2008), a scientist at the National Science and Technology Development Agency (NSTDA). Suchira points out two types of error: straightforward and complex. Straightforward errors can be easily pointed out, whereas complex ones are not easily explained, as they require background knowledge of different related theories. An example of the first type of mistake concerns the constant and chaotic activity seen in water molecules, which Som Suchira states is explained by a chaos theory and complementary with Buddhist wisdom. Buncha Thanabunsombat (2008) points out that in actual fact it is another theory altogether that explains this phenomenon, namely, statistical mechanics. In addition, the "chaos" in chaos theory does not refer to the sort of frenzied activity seen in water molecules. An example of the second sort of error can be found in Som Suchira's conclusion that the theory of relativity supports the teaching of *Idappaccayatā* or specific conditionality, which states that all things in the world are relative. Buncha Thanabunsombat (2008) points out that the theory of relativity does not state that all things are relative but, rather, must actually posit an unchanging point of reference, or something which is not relative, as a premise.

Another problem arising out of the attempt to correlate science with Buddhism concerns the use of terminology. A close look at various works will reveal that there are many cases in which language is manipulated in order to portray Buddhism and science as being complementary when the scientific terms employed do not actually refer to the same things that are being referred to in these works. An example can found in the claim of complementarity between the theory of relativity and specific conditionality which states that conditions are interdependent. This claim depends on twisting "relativity" to mean "all things are interdependent", whereas in science, "relativity" only applies to certain things, such as the results of observations about time and location that depend on the accelerations of the observer's point of reference and the object observed. Another example can be found where the uncertainty principle and the teaching of *anicca* or impermanence are connected, in which the meaning of "uncertainty" is twisted to mean "not constant", when in fact "uncertainty" here refers to the uncertainty of scientific measurements. This is the fallacy of equivocation. A similar fallacy is the category mistake, a clear example of which can be found in Amnuai Khamprang (2000: 85-86), where Newton's Laws that explain the behavior of physical objects are used to explain the behavior of people. Not only is a different definition of the term "behavior" being used, but the definition used for one category of thing (objects) is here applied to another category entirely (people) as well.

3. Case Studies of Interpretation and Explanation of Buddhism within a Scientific Framework

The works cited in the previous sections, though they are many, cannot be used as case studies here, as they do not interpret and explain Buddhism within a scientific framework in accordance with the definition of interpretation and explanation used in this work. Rather, these works focus on other matters, including comparison (such as discoveries in astronomy that are in line with Buddhist teachings on "the trillion universes"), conjunction (such as discoveries about the atomic structure corresponding with teachings on *anatta*), the application of scientific knowledge to a Buddhist context (such as the genetic code to the concept

of *kamma*), and the reinterpretation and re-explanation of science in a Buddhist framework (for example, "mass" is used to mean "form, sound, smell, taste, and touch").

The following sections will present case studies which clearly attempt to interpret and explain Buddhism by using scientific frameworks. These case studies cover interpretations and explanations of methods of interpreting the *Tipiṭaka* (the Pali Canon), principles of the teachings, and religious experiences, making use of scientific frameworks. The analyses of these case studies aim to focus on their models of interpretation; therefore, the aim is not to consider the validity of their content and details. Debate about discrepancies in understanding, whether concerning science or Buddhist teachings, will only be considered where necessary for understanding the models of interpretation.

The following works have been selected for study: (a) *Incidents that Occurred in Year 1 B.E., Volumes 1* and *2* by Phra Mettanantho Bhikkhu (2002); (b) *Great Magical Incantation in Thai* Boxing by Atthanit Phokhasap (2009); and (c) *Recommendations for Practicing the Four Postures* by Phra Khru Phawananusat (Thammatharo Bhikkhu) (no year of print). It can be said that all three case studies have exerted a degree of influence on Thai society. Phra Mettanantho Bhikkhu caused a widespread academic controversy. Atthanit Phokhasap's work is related to views expressed in the column "Old-time Tips" in the magazine *Tuai Toon* over almost three decades and has been studied and taught in colleges and universities, while Phra Khru Phawananusat (Thammatharo Bhikkhu) concerns the dissemination of the method of *vipassanā* practice over the author's lifetime and has gained recognition which continues to this day.

3.1 Case Study: Phra Mettanantho Bhikkhu

What is prominent and noteworthy in the case of Phra Mettanantho Bhikkhu is how science is used in the interpretation and explanation of Buddhism. Its application is not to the content which attests various truths about the world and people as is commonly found but to the way the *Tipiṭaka* is interpreted. The scientific element found in Phra Mettanantho Bhikkhu

is two-fold: first, the scientific method in general and, second, modern scientific theories, such as the theory of relativity and the uncertainty principle. Though the author asserts that the overall objective is to present a dialogue between civilization and science for the purpose of presenting Buddhism as a means of spiritual refuge for all the world's people, an analysis of the interpretation contained in the work reveals that Phra Mettanantho Bhikkhu does not interpret the parts of the teachings for such refuge. Rather, the author's interests lie in researching the facts and historical events recorded in the *Tipiṭaka*, such as the cause of the illness that led to the Buddha's death or the circumstances surrounding the first rehearsal of the Scriptures. Such interests play a role in determining how Buddhism is interpreted in a scientific framework.

As mentioned earlier, interpretation is "assigning meaning", and what is clearly taking place in the work of Phra Mettanantho Bhikkhu is the assignation of new meaning to concepts found in Buddhism by drawing from "scientific" concepts. An example of this can be found in Phra Mettanantho Bhikkhu (2002b: 225), where it is concluded that an examination using the *mahāpadesa*—the Four Great References—demonstrates that Mahā Kassapa, who led the first rehearsal, had the conservative character of a Brahmin clinging closely to scriptural tradition. This is an example of how the Four Great References are used in searching for facts about Mahā Kassapa. The question is whether or not the Four Great References are meant to be used to search for these sorts of facts. Answering this question will reveal how the scientific framework is used in the work of Phra Mettanantho Bhikkhu.

In *Dictionary of Buddhism*, P.A. Payutto (2000) states that the great references are to be used for determining whether or not statements "concerning the *Dhamma* or the *Vinaya* or the teachings" should be considered to be "authentic statements of the Buddha" (p. 152-153). Phra Mettanantho Bhikkhu (2002a: 117) also raises this issue and points out that the Four Great References are principles to be applied to "the teachings and philosophy of *Dhamma*," and not to verifying facts regarding people or events. In the latter case it is necessary to make use of principles and theories from modern science.

The question that follows is why the author later uses the Four Great References in precisely the way he states in the beginning that they must not be used. The answer is that the Four Great References that are used to study facts concerning people or events have new meanings that cause them to differ from the originals. These new meanings are interpreted through the theory of relativity and the uncertainty principle from modern science. Or, to put it another way, the Four Great References are a "part" that Phra Mettanantho Bhikkhu takes from the original "whole" and applies to a new "whole" synthesized from concepts derived from modern science. Why does he do this? The answer can be found in the beginning: it is so the Four Great References can be applied to the author's greater interest in interpreting the facts and historical events recorded in the *Tipiṭaka* than in the teachings concerned with freedom from suffering.

Similarly, other Buddhist teachings that Phra Mettanantho Bhikkhu mentions are all assigned this same sort of new meaning. However, the "wholes" used in assigning new meaning to the *Kālama Sutta*, the Four Noble Truths, and the process of focusing on one's flaws do differ. Phra Mettanantho Bhikkhu views these teachings as principles widely applicable to the search for truth and the "wholes" used in giving new meaning to these teachings are mutually compatible and common to the scientific method. Not only does the author consider these matters to be applicable to the scientific method, he also views them as informing a correct attitude with which scientific work must be undertaken.

Phra Mettanantho Bhikkhu (2002a: 100-101) explains that the scientific method must necessarily begin by relying on imagination and creativity in constructing a hypothesis. Then follows experimentation, and then a disciplined investigation of the results of the experiment using clear information, and the results are then reported for the scientific community to review. Attitudes and qualities necessary for the scientist to have in order to support this process are impartiality, the ability to let go of previously-held beliefs, openness to criticism, and the realization that knowledge is imperfect and subject to change. Phra Mettanantho Bhikkhu (2002a: 99) has grouped these attitudes and qualities together with respect for freedom of thought,

human rights, and democracy – something quite remote from the scientific context but more related to society at large.

The principles of the *Kālama Sutta* and the Four Noble Truths have been interpreted and explained within the framework of the scientific method according to a standard explanation. The principles of the *Kālama Sutta* concern "methods for addressing doubts" (P.A. Payutto, 2000: 152-153) or "practical methods for addressing doubts about how to practice", and the criteria for determining the means of practice are that everything is for the good, no one suffers whether self or others, and wise men have no objection (Royal Institute of Thailand, 1999: 161). In terms of logics, practicality and truth do not always coincide. For example, what is not true may produce better practical results than what is true. Another example is that an appropriate practice may have nothing to do with what is true or false, such as the practice of customs. Additionally, what is considered true and ethical (for example, what is deemed wholesome, blameworthy, troubling, or reproach) are values of another type entirely. Phra Mettanantho Bhikkhu's interpretations overlook these logical categories, thereby turning the *Kālama Sutta* into the search for truth. Nevertheless, this is not too far-fetched, as it is a widespread belief in Thai society that the *Kālama Sutta* is to be used for this purpose (for an example, see Phra Thammakosachan, 2009b: 43). An important and prominent feature found in Phra Mettanantho Bhikkhu is an expanded explanation of the principles in the *Kālama Sutta* using the scientific method, causing it to reflect qualities complementary with the characteristics and attitudes appropriate to scientific work such as imaginative thinking and freedom of thought.

The standard definition of the Four Noble Truths is "the truths that are noble, the truths of the *ariya*, the truths that cause those who comprehend them to become *ariya*" (P.A. Payutto, 2000: 181). It can be seen that by this definition the Four Noble Truths do not concern the principles in searching for truth, but are truths that ought to be sought in order to become free from suffering: the truths of suffering, cause, cessation, and path (with all the necessary contents in place). The duty of a religious adherent is to practice in order to experience these truths directly. The special status of this knowledge will determine whether or not practice is being done correctly. Thus, just as

it is the case with the *Kālama Sutta*, the Four Noble Truths are accepted in Thai society as a method in the search for the truth or as a means of diagnosing and solving problems (for examples see Amnuai Khamprang, 2000: 102 and Phra Thammakosachan (Prayun Thammachitto), 2009b: 44-45, cf. the Dalai Lama, 2003 and P.A. Payutto cited above). However, what is special about Phra Mettanantho Bhikkhu is the interpretation that suffering lies at the beginning of the scientific inquiry – that is, there is a problem, doubt, and dissatisfaction with existing knowledge, all providing an impetus towards further study and discovery. It can be seen clearly that this is a new meaning, as suffering, in the context of the Four Noble Truths, is defined in relation to the cause of suffering and is a matter of existential experience and not of the search for knowledge about the external world. The fact that the Four Noble Truths are seen as a method, along with a different conception of the meaning of suffering, demonstrates clearly that this understanding comes from the framework of the scientific method.

The principle of focusing on one's flaws is a special case, as it does not seem to be directly connected to any *Dhamma* principles, to the extent that Phra Mettanantho Bhikkhu (2002a: 111-112) must justify its very existence by referring to Prince Siddhattha's persistent self-cultivation, as well as referencing the *Tipiṭaka*. The reason that Phra Mettanantho Bhikkhu considers this issue significant enough to make into a principle in the search for truth is not difficult to explain if one considers the general framework of the scientific method, without any need to refer to how appropriate the principle of focusing on one's flaws is. It can be said that, in putting forth this principle, Phra Mettanantho Bhikkhu is assigning new meaning yet again. In setting up this principle, the author refers to the principle of focusing on one's flaws in relation to self-development, but ultimately the meaning that is given to focusing on one's flaws is the new meaning of developing one's knowledge, which is to be done at the same time as examining one's prejudices.

In addition to principles for the search for truth in general, Phra Mettanantho Bhikkhu also proposes principles for searching for truth in the *Tipiṭaka*, making use of the theory of relativity and the uncertainty principle from modern physics as frameworks that lend meaning to the

Buddhist teachings. Nevertheless, the meanings of the key terms from physics that Phra Mettanantho Bhikkhu uses are completely different from how scientists use them.

In science, the theory of relativity concerns moving objects. Examples that are often used are cars, trains, planes, and rockets, which might be called an observer's frame of reference. The relativity concerns two objects that move, where an observer is in one object and observes the other object. The result of the observation in space and time will depend on the relative accelerations of the two objects. Thus, if there is another observer who is in another object that has a different relative acceleration, the resulting observation will also be different. According to the theory, space and time are connected in such a way as to be inseparable and exist as a space-time continuum, which is the nature of four-dimensional space, three dimensions of which are space and the other of which is time. The relativity between these dimensions demonstrates that the spatial dimensions of an object are relative to the movement of time (Andrew Zimmerman Jones & Daniel Robbins, 2011, and Jonathan Powers, 1982: 94).

Nevertheless, for Phra Mettanantho Bhikkhu, relativity is a matter of personal interpretation and cultural context, of scripture and the environment it was recorded in, and not of the relativity of moving objects. Though they may seem similar, as the subject here is also an "observer" who is in a different frame of reference from "the object that is observed," and the frame of reference is also determined by space-time, nevertheless, the frame of reference here is not a moving object, and the scriptures are not an object that is being observed, as observation and reading are different types of activities. Furthermore, in the author's interpretation, space and time become cultural factors. The term "space" here does not involve width, height, or length; it is rather about geography. Similarly, "time" concerns history, not about a period that has an effect on the spatial properties of an object. The conclusion we come to is that the claim that theories of modern physics are being employed here is, in truth, not the case at all; rather, it is that key terms are being borrowed from those theories and given new meanings different from their original usages.

This same criticism can also be made of references to the uncertainty principle. The principle actually concerns uncertainty in making scientific measurements or, in other words, about exactitude in determining quantitative values (Bancha Thanabunsombat, 2009). It is not about the inability to verify whether or not events read about in the scriptures are true. The question which follows is, since Phra Mettanantho Bhikkhu is not actually using a scientific theory, why must he claim that he is doing so? If we disregard the issue of the uncertainty of understanding, the answer is very clear, particularly if what is considered is the claim of science in general. The answer is that citing science lends weight to challenging traditions that are attached to certain prejudices. The author is claiming the support of theories and principles from modern physics in order to validate the content of his interpretations.

In fact, there is nothing new about the method of interpretation by considering the parts contained in the scripture and researching its social and historical contexts, as well as the relationships between the different scriptures that Phra Mettanantho Bhikkhu uses. It has been around for hundreds of years. It has been used by a school of religious literature research known as "historical criticism." This school does not aim only to answer questions regarding the origins of a scripture by analyzing its components and the roles of other historically involved texts, but also goes into other matters such as the intent of its author(s), the people and the circumstances involved in its composition, as well as various historical factors that may offer greater understanding of the scripture (Claude Welch, 2003: 410). These principles may be understood and applied without citing theories in modern physics at all. This raises the question of why reference is being made to physics rather than historical criticism. The answer lies no further than the greater authority that comes with the support of theories of modern physics.

3.2 Case Study: Atthanit Phokhasap

This section will consider how Atthanit Phokhasap (2009) uses science as a framework for interpreting and explaining Buddhism. In order to answer this question, one ought first to consider the objectives of this

independent researcher's interpretation against the objectives of leading academic monks involved in Buddhist studies and dissemination of Buddhist teachings to the educated public. These monks include Buddhadasa Bhikkhu, Ven. Chao Khun Prayuth Payutto, Phra Phaisan Wisalo, and Ven. W. Vajiramedhi. For them, Thai "modern Buddhism" has made an important aim of steering clear of what it deems to be blind faith, invocation of spirits, divination, rituals, and other forms of superstition. The Buddhist teachings they propose are rational and have less of a need to rely on the supernatural, and some have called this a return to "pure Buddhism". However, Atthanit Phokhasap (2009: 32 and 34-35) views that these "Buddhist scholars" have not understood that their objectives are within an academic framework influenced by traditional science. In other words, their objectives are governed by prejudices against occultism and astrology embedded in a mechanistic worldview – a worldview which has no place for either the "mind" or "morality".

Atthanit Phokhasap (2009: 66-67) points out that as a result these "Buddhist scholars" reject the kind of Buddhism manifest in the beliefs and lifestyles, as well as in the artistic and cultural heritage, associated with the religion. What can be seen clearly is that these various teachings portray occultism and astrology, which are a part of the lives of Thai Buddhists, as being in conflict with pure Buddhism. An important aim of Atthanit Phokhasap is to demonstrate that what these "Buddhist scholars" believe to be "pure Buddhism" is not actually the case. For this independent researcher, "pure Buddhism" is no different from the "authentic Thai-style Buddhism" which cannot be separated from occultism and astrology.

Why do the aforementioned monks and scholars need to demonstrate that Buddhism is a "religion of reason" by separating Buddhism from occultism and astrology? It is clear that this endeavor aims to demonstrate Buddhism's complementarity with science, which is the contemporary standard for truth. What Atthanit Phokhasap does is to question whether or not it is really true that science, the template of reason, is incompatible with occultism and astrology. If it is not the case, that means that the attempts that are made to assert complementarity between Buddhism and the

contemporary standard for truth do not require the conclusion that Buddhism is different from occultism and astrology.

In order to demonstrate the compatibility between science, superstition and astrology, Atthanit Phokhasap uproots the traditional science which brands occultism and astrology as mere superstition by appealing to modern science. There seems to be no need to ask why traditional science should be rejected by modern science. However, dismissing conditions such as the mechanistic worldview which regards occultism and astrology as superstition, at most, allows us to see that we may not say that they – occultism and astrology – are irrational; but again it does not suffice to demonstrate that these things are worthy of acceptance.

Taking a step in that direction, Atthanit Phokhasap employs the same device, namely, modern science, by using modern scientific concepts and theories to give meaning to occultism and astrology. Within this interpretive framework based on modern science, the meaning of "occultism" is understood to be "mind over force field" (p. 30), the mysterious power of "kasina" can be explained by "nucleo-synthesis" (p. 137), and the art of "Dhanurveda" which seems incredulous turns out to be a "hyperspatial howitzer" (p. 88). At the most basic level, it can be said that the modern science that plays an important role in providing a basis for the "mind" and "morality" is what gives occultism and astrology meaning at the levels of both thought and rituals.

It can be concluded that Atthanit Phokhasap's interpretation relies on transforming the "whole" of the parts of what is called "pure Buddhism" into a Buddhism that is complementary with contemporary standards of truth, by transforming from that which originally relied on traditional science into that which is defined by modern science. This transformation is effected in two steps: first, by rejecting traditional science due to its prejudice that labels occultism and astrology mere superstition, allowing Buddhism to complement science without rejecting occultism and astrology; then, by assigning new meaning to these things which people feel are incredulous and silly. The result is a "pure Buddhism" (or a Buddhism that complements science) that is compatible with occultism and astrology, as

well as an opportunity to connect it to all the beliefs, lifestyles, and artistic and cultural heritage of Thai society, in order to validate these things as being correct and appropriate. Atthanit Phokhasap (2009: 27) calls the study of connecting Buddhism, occultism and astrology, and artistic and cultural heritage, *geographical philosophy*.

It can be observed that Atthanit Phokhasap's references to modern physics bear similarities to Phra Mettanantho Bhikku's in that they both borrow terminologies and use terms in ways different from how they are actually used. A clear example is the reference to "velocity", an important term in science that Atthanit Phokhasap (2009: 132) claims can also be found in Buddhism, namely, in the teaching about *papañca*. Whatever the case may be, "velocity" in science concerns the motion of objects, while *papañca* concerns the obstacles that cause slow progress towards comprehending the truth and solving problems (P.A. Payutto, 2000: 111). These obstacles are psychological in nature; for example, craving is not an object in motion. Furthermore, the velocity described with reference to *papañca* is the rate at which one is able to find one's answers and has nothing to do with the velocity involved in movement.

Moreover, many of the other important terms used do not come directly from modern physics but from parapsychology circles that believe in psychic powers, or ESP (extra sensory perception), which can easily be found in science fiction. We might even categorize these groups of people as part of what is known as "New Age movements" (Michael York, 2004: 8). The terms "psychic mastery over the energy field" or "hyperspatial howitzer" are examples of terms that come from parapsychology circles that believe in psychic powers. These circles also receive part of their inspiration from modern physics, from which they also tend to borrow terminology and use it differently. The source of inspiration and the borrowed terminology cause these thoughts and beliefs to seem like cutting-edge modern science; however, the thoughts and beliefs in these circles are not those which can be immediately accepted but require further scientific study and research. An example is that of the "hyperspatial howitzer" ("space-defying cannon"), one of the weapons discussed by people who believe in psi warfare, especially that developed by the

superpowers during the time of the Cold War. The notion comes from the work of Major John B. Alexander, who believes that psi warfare has already begun. He explained that this cannon is capable of transmitting a nuclear explosion from one location to a remote destination. Other weapons mentioned include a "photonic barrier modulator", which Major Alexander believes uses remote psychic power to cause physiological changes in its target. In any case, experiments conducted later found that these claims were beyond what is true and were bogus (Jeffrey Mishlove, 1997: 241-242).

3.3 Case Study: Phra Khru Phawananusat (Thammatharo Bhikkhu)

The case of Phra Khru Phawananusat (Thammatharo Bhikkhu) differs from the two cases above as it concerns the interpretation and explanation of religious experience arising from direct practice and not interpretation and explanation of Buddhist material, whether the *Tipiṭaka* or other texts. Though science is not referred to directly, the general claims of knowledge about anatomy and physiology (especially the anatomy and physiology of the brain) in the interpretation and explanation of this experience are clear indicators of science's influence. When examining other writings by the author, such as *Mahasatipatthana Sutta in Brief* and *Directions to Nibbana: Mahasatipatthana Sutta: Bodhipakkhiya-dhamma 37* (see www.watsai.net), it can be found that, though the method of practicing the four postures he teaches is grounded in the teachings found in the *Mahasatipatthana Sutta*, the anatomical and physiological framework he uses to interpret and explain religious experiences are not, as nowhere is the framework to be found in that discourse. This strongly suggests that the use of an anatomical and physiological framework in Phra Khru Phawananusat is an attempt to interpret and explain religious experience. It can be said that for Phra Khru Phawananusat religious experience is a "part", whereas the anatomical and physiological framework is the "whole".

As Phra Khru Phawananusat demonstrates, by practicing the four postures correctly, the practitioner will encounter "pulsing" sensations or sensations of warmth (Phra Khru Phawananusat (Thammatharo Bhikkhu),

no year of print: 19). In addition, he will experience sensations of movement from both sides of the center of his chest towards his back that move up to the nape of his neck and into his skull near his forehead and eyebrows (Phra Khru Phawananusat (Thammatharo Bhikkhu), no year of print: 24). From this experience, Phra Khru Phawananusat (no year of print: 53) interprets and explains that these sensations are the *mano-viññana* – the mind-consciousness – that operates along with the body's anatomy, and in particular, that these sensations at the nape of the neck and within the skull are the movements of the mind-consciousness to the lower brain (or "small brain") and the upper brain (or "large brain"). Assigning the meaning of "mind-consciousness" to those sensations demonstrates a Buddhist foundation, while determining that the areas felt are the lower brain and upper brain demonstrates the use of a scientific framework.

From this it can be seen that, were the author to lack the anatomical knowledge that the brain has an upper and a lower part, he may interpret his experience by only referring to "the brain" and "the nape of the neck". Furthermore, the experience of sensations across different body parts has been reported in other contexts as well, such as in Chinese inner energy practices and kundalini practices in yoga. However, the author makes no references to modern anatomy and physiology in his interpretation, but he explains those sensations within his own theoretical framework, such as when referring to *chakra* located at various points along the body. Therefore, this case demonstrates the influence of basic anatomical and physiological knowledge on Phra Khru Phawananusat's interpretation and explanation of religious experience.

Phra Khru Phawananusat's aim is to demonstrate the corporal and tangible results of meditation practice. The limits of tangibility expand when sensations that are experienced are explained by anatomy and physiology. What seems incorporeal, such as the different consciousnesses, thus become corporal within our own bodies. An example of a physiological explanation can be found in Phra Khru Phawananusat (no year of print: 44), in an illustration of a cross-section of the skull, where it is depicted that *ghāna-viññāṇa* – nose-consciousness – resides in the nasal cavity while the mind-consciousness resides between the lungs and is able to move out

of the body through an opening visible to the eye, namely, two small holes in the skull near the eyebrows. The movement of the mind-consciousness is then a corporal matter; that is, it really does move around in our bodies, as if it were the bloodstream. For this reason, it is advised that one sit with a straight neck while meditating in order to allow the mind-consciousness convenient movement towards its exit. Additionally, the mind is also not something abstract but is, rather, the brain. The purification of the mind of its defilements may then not only be called the cleaning of the brain but may also be felt as sensations at the small brain and the large brain, particularly, the sensations of tightness or giddiness around the nape of the neck and at the head during the purification (Phra Khru Phawananusat (Thammatharo Bhikkhu), no year of print: 28).

This anatomical and physiological framework is compatible with the attempt to encourage the laity to practice, especially through an emphasis on *akāliko*; that is, *vipassana* can be practiced at all times. It can be seen that the Phra Khru Phawananusat's objective is to clear away obstacles that hinder laypeople from practicing *vipassana*, such as the belief that such practice is only for monks or that *vipassana* and related matters such as the mind are incorporeal and impossible to really experience. An interpretation and explanation of *vipassana* practice that makes use of this anatomical and physiological framework thus has an important role in challenging beliefs that serve as obstacles to practice. Another role that the use of an anatomical and physiological framework may play may be related to the idiosyncratic nature of the interpretation, explanation, and teaching of the *Satipaṭṭhāna Sutta* that can be called the practice of the four postures. Such uniqueness tends to demand some justification to provide it with legitimacy. In this case, the justification comes from direct experience that is interpreted within an anatomical and physiological framework. This may be considered a use of scientific knowledge as a framework for interpreting and explaining religious experience in a clear and corporal way, where experience that is in accordance with this interpretation and explanation serves as the foundation for further teachings.

In the previous case studies, different teachings in Buddhism are interpreted in new ways. This is also clear in Phra Mettanantho Bhikkhu,

for example, in the new interpretation of teachings regarding the Four Great References, which makes use of theories and principles from modern physics. In the case of Atthanit Phokhasap, we find a similar type of interpretation, an example of which can be found in the new interpretation of *papañca* and *nippapañca* that makes use of the scientific concept of velocity. In the case of Phra Khru Phawananusat, we also find a similar, though more complex, type of interpretation.

The case of Phra Khru Phawananusat does not concern the interpretation of Buddhist teachings directly, but concerns the interpretation of religious experience arising from the practice of *vipassana*, the interpretation of which makes use of a scientific anatomical and physiological framework. In any case, it can be found that Phra Khru Phawananusat is actually interpreting Buddhist teachings in a new way too, by interpreting them in the framework of religious experience. When this is considered, it can be seen that this novel interpretation results from an attempt to understand religious experiences by appealing to different Buddhist teachings for support. There are many cases where Buddhist teachings are merely borrowed in order to name or narrate experience. Thus, though the terms used are the same as those used in Buddhism and keep the same basic outline of how they are used originally, their meanings actually differ completely. An example which can be found from the experience of practicing *vipassana* is the feeling of seeing something glittery, like rays of sunlight through a haze, in the nasal region. Phra Khru Phawananusat calls this experience *ghāna-viññāṇa*, which is a term used in Buddhism. However, the term *ghāna-viññāṇa* as it is used in Buddhism does not refer to something which can be "seen" in a similar way to how ones sees sunlight through a haze. In *Dictionary of Buddhism*, P.A. Payutto (2000: 231) defines *ghāna-viññāṇa* as "the consciousness of an *āramaṇa* – a sense-object – at the nose, or the knowing of a scent with the nose, or the smelling of a scent."

Moreover, it can be found here that the attempt to understand religious experience aided by important terms in Buddhism is matched by an attempt to understand it through science, such as through anatomy and physiology. An example of this which involves the practice of *vipassana* is the sensation similar to warmth or heat that travels out of the body via the

brow area. Phra Khru Phawananusat calls this exit *mano-dvāra* – the mind-door, which is an example of altering the meaning of "door". On the one hand, there is the experience of warmth that can be felt flowing out of the body through the area that is called the "door", but on the other, the "door" is an opening that can be seen, located in the skull. It is certain that the "mind-door" referred to here has a different meaning from what is meant in Buddhism, as P.A. Payutto (2000: 104-105) explains in *Dictionary of Buddhism* that the *mano-dvāra*, when considered in conjunction with the three doors, is a means of action, and when considered among the six doors, is a means of cognizing.

It is not surprising that an interpretation of religious experience that makes use of both Buddhism and a scientific framework attempts to harmonize them. It is known from religious experience that when the mind is not swift or when it is entangled with the objects it comes into contact with, those objects will be retained. Phra Khru Phawananusat (no year of print: 51) states that there are experiences which are the accumulation of entanglements with objects within the *bhavanga* – or life-continuum – which, in its original Buddhist meaning, refers to a function of the mind (P.A. Payutto, 2000: 309). At the same time, Phra Khru Phawananusat's interpretation also makes use of an anatomical and physiological framework to state that the mind can be understood to have corporal existence through religious experience (whether it be the experience of glittering light or sensations of warmth) and that such existence is no other than the brain. Furthermore, as it is widely known that the brain is the body's repository for information, so it can be said that the brain is the *bhavanga.*

4. Models of Interpretation and explanation of Buddhism within Sci entific Frameworks

This section analyzes the models of interpreting and explaining Buddhism using the scientific frameworks of the case studies above. Before beginning the analysis, we must first be clear about what is meant by "hermeneutics." When speaking of the interpretation and explanation of Buddhism within a scientific framework, we may have only a general understanding and be unable to differentiate it from the comparison of

Buddhism and science though the two have different logic at work. Interpretation and explanation make use of the hermeneutical circle, while comparison strives to find a shared standard which can provide certainty that the things which have differences (such as being from different systems of thought) can actually be thought of as alike. As they can be grouped together, things that look completely different can be compared. Therefore, when speaking of "hermeneutics," it is entirely necessary to have this understanding straight to avoid confusion.

4.1 The Meaning of "Hermeneutics"

In this study, attempts have been made to research into various works on interpretation or the study of interpretation, but no works are found to have made direct use of a term that means "hermeneutics." Even research into the interface between Buddhism and science has not focused on interpretation and explanation. This can be seen clearly in the choice of terms which may refer to comparison or interpretation or explanation. For example, Donald S. Lopez (2008: xi and xiii) refers to the "compatibility of Buddhism and science" or the "discourse of Buddhism and science", while B. Alan Wallace (2003: 34) uses other terms, such as "interface" or "interrelation" rather than "interpretation and explanation". Even the work of David L. McMahan (2004), who claims to make a direct study of the interpretation and explanation of Buddhism within scientific framework, upon evaluation, can also be found to include a comparative study of Buddhism and science, along with an interpretation and explanation of science within a Buddhist framework. Thus, it is not surprising that McMahan chooses to use the term "discourse" rather than "interpretation and explanation."

One work which can be said to include an analysis of models is Sal P. Restivo (1978), although the author does not use the term "model", but rather, "method". However, aside from the fact that Restivo's work is not limited to Buddhism, the analytic model used is a comparative approach, not hermeneutics. Furthermore, Restivo's inquiries rely on comparative logical constructs, causing the model to seem barely distinguishable from that defined by comparative logic. This raises an issue, namely, that both

comparison and interpretation and explanation require different models, whether a working logic model or a conceptual model. Therefore, in speaking of the search for models for these activities, it ought to be clear that the "hermeneutics" which is being sought here is different from the "model" which makes comparison what it is or makes interpretation and explanation what it is.

If this is the case, how are "hermeneutics" to be understood? The most straightforward analysis of "hermeneutics" may be found in Alice Collett (2009), which aims to analyze the model of interpreting and explaining Buddhism in relation to women and gender. However, this work does not use the term "model", but "hermeneutics", as in "hermeneutical strategies", which refer to methods of use in determining the "whole" to be interpreted and explained. Though Collett does not use the term "agenda", it is mentioned here so that it can be easily understood that the method of determining the "whole" is modeled after the agenda of the interpretation and explanation. Thus, Collett does not explain "hermeneutics" by referring to the "whole" and the "parts" but defines it broadly as the creation of meaning within the context of the relationships between author/text/reader (Collett, 2009: 92). In any case, the creation of meaning, regardless of the context of relational constructs, can likewise be understood in the framework of the hermeneutical circle.

An example of a hermeneutics that Collett finds in the analysis is the hermeneutics of resonance, the model that Caroline Rhys Davids, a leading female academic in Buddhist research, uses to interpret and explain material from the *Tipiṭaka* in the framework of women's social and political struggle. This interpretation and explanation exists within an agenda of allowing women independence and equality with men, like how the *bhikkhuni* and *theri* were on equal footing with the *bhikkhu* and *thera* in the time of the Buddha.

It can be concluded that, in speaking of hermeneutics, an important consideration is the search for the hermeneutical strategies employed. But as hermeneutical strategies are defined by considering agendas, it can be said that an analysis of "hermeneutics" must rely on the search for the agenda

of interpretation and explanation. For the purpose of clarity, it should be stated clearly here that the analysis of interpretation and explanation is a matter of analyzing the "whole" and the "parts", while the analysis of the hermeneutics is a matter of analyzing the agendas of interpretations and explanations, involving a context that encompasses the interpretation and explanation of constructs within a hermeneutical circle.

4.2 Analyzing the Hermeneutics of Interpretation and Explanation in the Three Case Studies

The following material will analyze the interpretation and explanation of the three case studies, namely: (a) *Incidents that Occurred in Year 1 B.E., Volumes 1* and *2* by Phra Mettanantho Bhikkhu; (b) *Great Magical Incantation in Thai Boxing* by Atthanit Phokhasap; and (c) *Recommendations for Practicing the Four Postures* by Phra Khru Phawananusat (Thammatharo Bhikkhu). This analysis will involve the use of the "whole" and the "parts" that form the basis for the interpretations and explanations. At the same time, the focus of the evaluation will be on the "whole", as it is in the context of giving new meaning to the "parts". A question remains here concerning the evaluation of the "parts". If the interpretation and explanation is the assigning of new meaning, in what way can we refer to the evaluation of that which is interpreted and explained? We may be certain that our evaluation cannot depend on a judgment about the correctness of the meaning that uses the original meaning as its criterion; otherwise, the word "new" will be meaningless. Moreover, the use of such a standard will obstruct the interpretation and explanation from the outset. This point will be discussed later when the characteristics of the parts of the three case studies are evaluated.

In the interpretation and explanation of Buddhism within the scientific framework that Phra Mettanantho Bhikkhu employs, the parts are the principles of Buddhist teachings concerned with the search for truth, although in actual fact they are principles concerned with searching for truths in general, such as the *Kālama Sutta*, the Four Noble Truths, and the practice of focusing on one's flaws, as well as the principles concerned with the search for truth within the *Tipiṭaka*, such as the Four Great

References. The whole is the methodology and theory of science, such as the scientific method, the theory of relativity, and the uncertainty principle. Ultimately, this interpretation and explanation of the Buddhist teachings is a search for truth that relies on a scientific framework in studying the truth of various events recorded in the *Tipiṭaka* such as the First Rehearsal of the Scriptures.

Phra Mettanantho Bhikkhu's interpretation and explanation of Buddhist within a scientific framework can be illustrated in *Chart 1*:

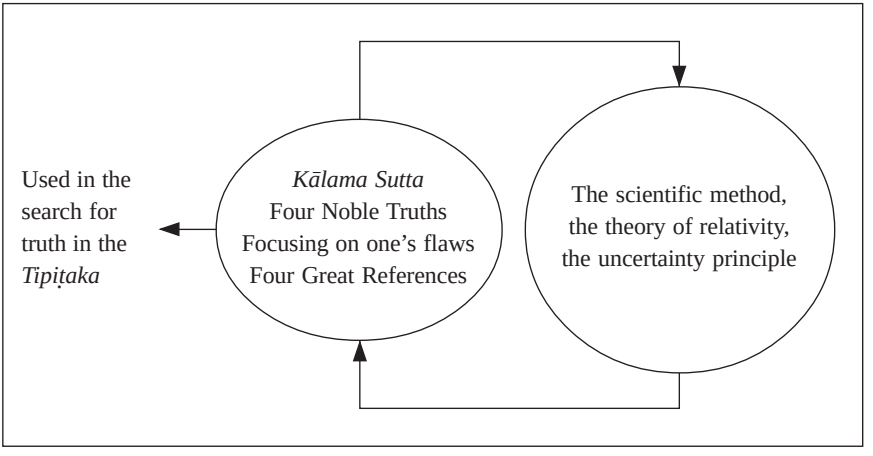

Chart 1

As has already been mentioned, one problem encountered in Phra Mettanantho Bhikkhu is the discrepancy between real science and how science is cited in this work. For example, the references Phra Mettanantho Bhikkhu makes to theories and principles in modern physics are references in name only (such as "time" and "space") and do not carry the original scientific meaning. In other words, the author commits the logical fallacy of equivocation. Besides, when considered from a broader perspective, it can be seen that the science that Phra Mettanantho Bhikkhu refers to is actually a new interpretation by the author himself. It can thus be said that the "science" referred to is actually a part of another whole, i.e. "the developed society". According to the author's understanding, this whole is

also composed of respect for the freedom of thought, human rights, and democracy. "The developed society" has an important role in the interpretation and explanation of the scientific method. Furthermore, the use of historical criticism can also be found to be a whole for the interpretation and explanation of the theory of relativity and the uncertainty principle (see *Chart 2*):

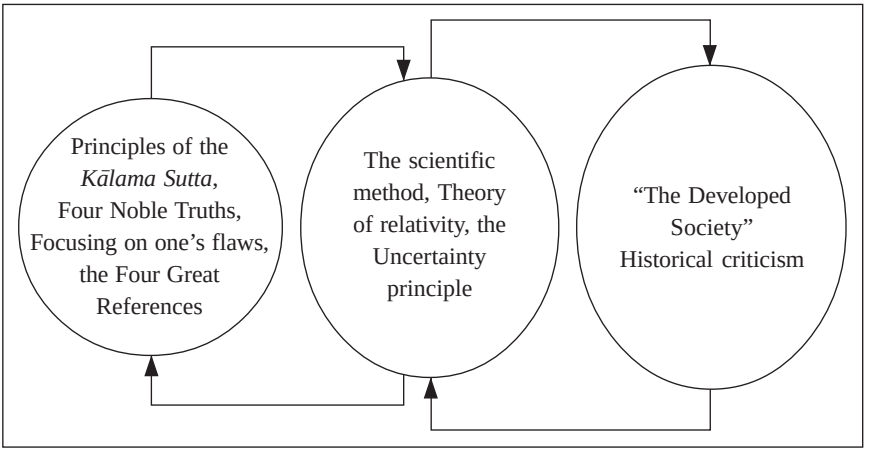

Chart 2

When this is the case, it can be said that the science referred to is not actually science. Interpreting and explaining the principles of the *Kālama Sutta*, the Four Noble Truths, focusing on one's own flaws, and the Four Great References in such a way that produces the result Phra Mettanantho Bhikkhu desires may be accomplished by understanding "the developed society" and historical criticism, with no need to refer to science at all. Two questions follow from this. First, why favor "the developed society" and historical criticism? Second, are these two concepts that Phra Mettanantho Bhikkhu really understands? As the first question helps shed light on Phra Mettanantho Bhikkhu's interpretation and explanation, it will be given a special attention. From the broadest perspective, it can be seen that Phra Mettanantho Bhikkhu's agenda is to challenge the context of traditional culture that has a monopoly over explaining Buddhism. This challenge relies

on removing Buddhism from its original context and bringing it into the context of the modern society defined as "the developed society". An easy way to understand this is through *Chart 3*, below:

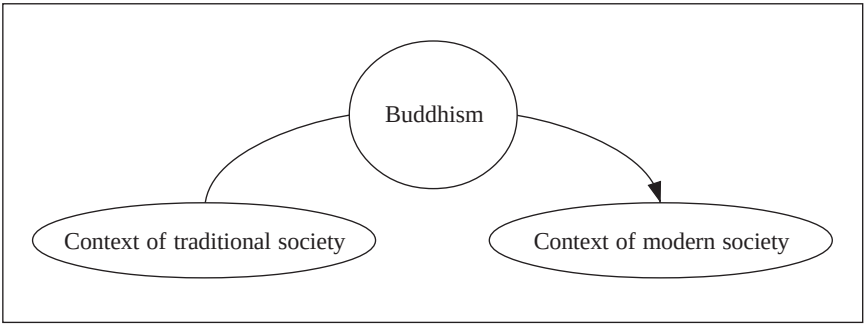

Chart 3

Ultimately, it can be seen that a search for truth about events in the *Tipiṭaka*, using Buddhist principles on the search for truth, through interpretation and explanation via "science" (or, for that matter, "the developed society" and historical criticism) may be used to challenge the status quo understandings in "the context of traditional society" represented by the institution of the Sangha. It can be seen clearly then that Phra Mettanantho Bhikkhu's interpretation and explanation of Buddhism within a scientific framework is made to further the agenda for such a challenge.

When the results of analyzing the interpretation and explanation of Buddhism through a scientific framework coupled with the agenda of the interpretation and explanation are considered, it may be concluded that Phra Mettanantho Bhikkhu's model of interpreting and explaining Buddhism using a scientific framework is a "reactionary hermeneutics", as its purpose is to challenge the traditional societal framework of thought of the Sangha, the status quo authority.

Atthanit Phokhasap's interpretation and explanation of Buddhism using a scientific framework is composed of the parts – i.e. Buddhism, occultism, astrology, and different Thai arts, particularly Thai Boxing – and

the whole, i.e. modern science, particularly physics. The purpose of these parts is to give support to what is called "authentic Thai-style Buddhism" (or "Tantric Buddhism"). The author's interpretation of Buddhism is complex, while the interpretation and explanation of Buddhism within a scientific framework is only one component in this interpretation. The author begins by describing authentic "Thai-style Buddhism," and the result is that it is not possible to tear apart Buddhism, occultism, astrology, and various Thai arts from one another. The author goes on to interpret and explain this "Thai-style Buddhism" using a framework of modern physics in order to lend validity to the "Thai-style Buddhism" that the author has discovered.

The interpretation and explanation of Buddhism within a scientific framework found in Atthanit Phokhasap is presented in *Chart 4* as follows:

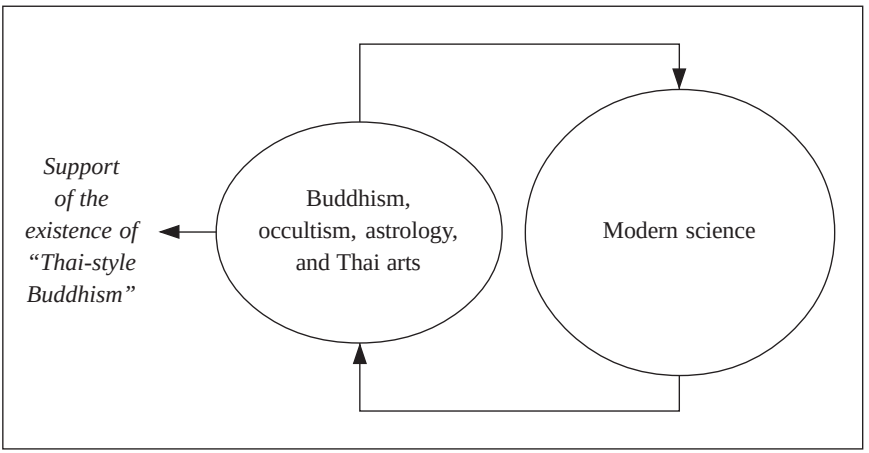

Chart 4

As is the case with Phra Mettanantho Bhikkhu, Atthanit Phokhasap's work contains mistakes with regard to the scientific content it cites, and the author commits the logical fallacies of equivocation and category error (such as applying the scientific concept of "velocity", which concerns objects, to the teaching of *papañca*). Another criticism, also valid in the case of Phra Mettanantho Bhikkhu, is that, when considered from a broader

perspective, it can be seen that the "modern physics" Atthanit Phokhasap cites is actually a group of concepts found in science fiction and suggestive of modern physics. These concepts are favored by the New Age movement and those who believe in psychic powers, although they are mainly imaginative and not accepted within scientific circles. It can be said then that the "modern physics" the researcher refers to is a part of another whole, namely, "science fiction", as demonstrated in *Chart 5*:

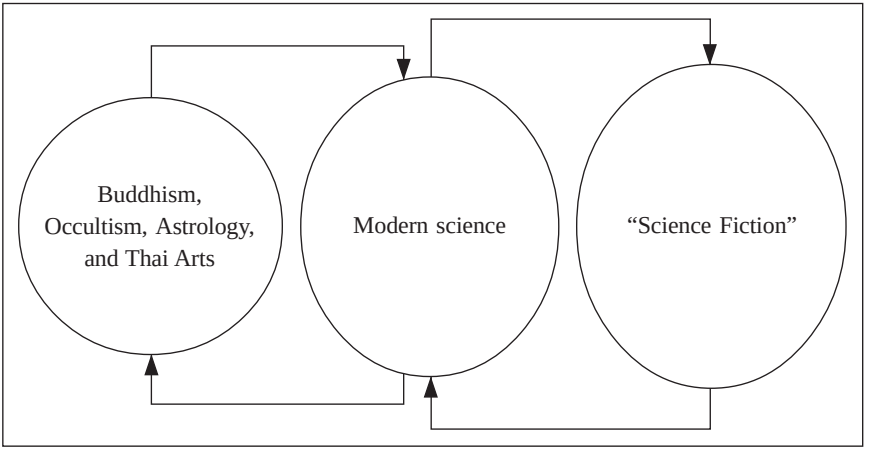

Chart 5

Another question is: what is the agenda behind Atthanit Phokhasap's interpretation and explanation of Buddhism within a scientific framework? The answer to this question can be seen in the two roles of reference to modern physics. The first role, as seen earlier, lies in the interpretation and explanation of Buddhism, occultism, astrology, and different Thai arts. The second role is broader and forms part of the interpretation of "Thai-style Buddhism", using a scientific framework as one of its components.

The aim of citing modern science in the second capacity is to destroy the foundation of the academic Buddhist studies which have gained ground considerably in recent years by means of the following steps: (a) by pointing out that contemporary Buddhist ethics is founded on traditional science and (b) by defining modern science and asserting that it is

incompatible with traditional science. Atthanit Phokhasap believes that contemporary academic Buddhist studies rooted in traditional science has separated Buddhism, occultism, and astrology from one another and asserts that "pure Buddhism" must be free of occultism and astrology. Similarly, the use of modern science to invalidate traditional science would have the effect of delegitimizing contemporary Buddhist studies. As a result, the separation between Buddhism, occultism, and astrology would become unacceptable.

At the same time, Atthanit Phokhasap cites modern science in order to demonstrate that Buddhism, occultism, and astrology are actually compatible – meaningfully and necessarily – in the form of "Thai-style Buddhism." Furthermore, those who comprehend this truth are those who are capable of seeing the new era of Buddhist studies that Atthanit Phokhasap calls "Geographical Philosophy." The agenda of challenging traditional Buddhist academics can be seen in *Chart 6* below:

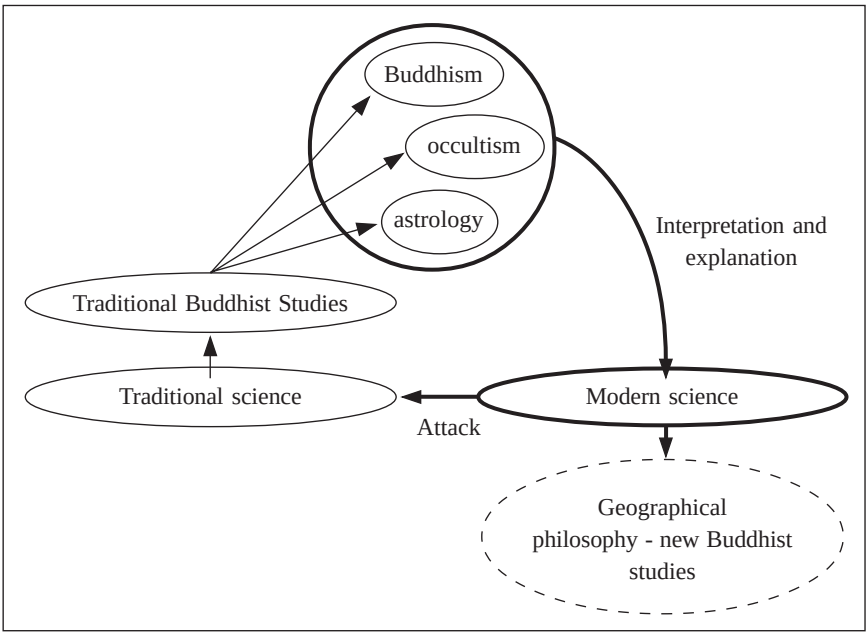

Chart 6

The above diagram shows similarities to Phra Mettanantho Bhikkhu in some respects. Phra Mettanantho's case involves moving Buddhism from the context of a traditional culture into the context of a modern society, while that of Atthanit Phokhasap has to do with moving Buddhism, occultism, and astrology from the context of original Buddhism towards an academic context of new Buddhism. Furthermore, an analysis of Atthanit Phokhasap's method of interpretation and explanation and of the agenda behind it leads to the conclusion that they share similar characteristics with Phra Mettanantho Bhikkhu. It can be said that both employ "reactionary hermeneutics," as they both challenge the authority of contemporary Buddhist academia.

Phra Khru Phawananusat (Thammatharo Bhikkhu) presents an interpretation and explanation of the direct experience of *vipassana* practice through a scientific framework. The details, or "parts," describe this religious experience, while the "whole" is scientific anatomical knowledge (such as the position of the brain in the skull) and physiology (such as the functions of the brain). The purpose of his interpretation and explanation is to lend support to his unique style of *vipassana* meditation practice. Phra Khru Phawananusat's interpretation and explanation of Buddhism through the framework of science can be illustrated as follows (Chart.7):

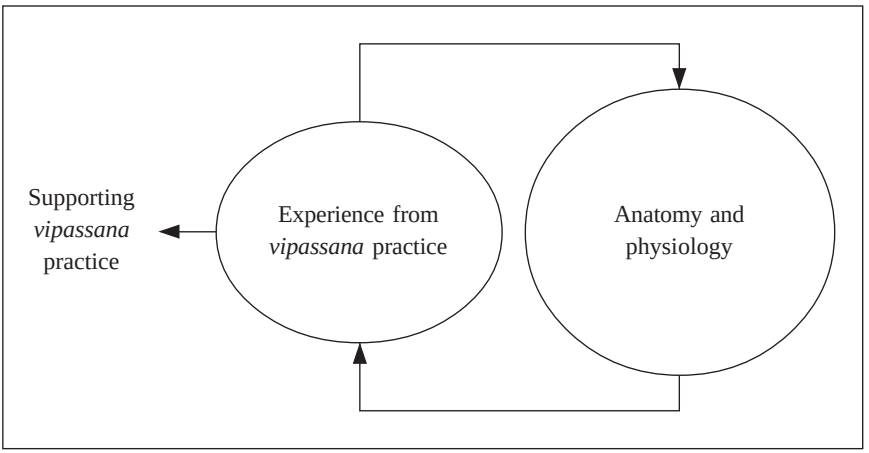

Chart 7

As has already been pointed out, Phra Khru Phawananusat's interest is in understanding his direct experience of practicing *vipassana*. In this effort to understand, Phra Khru Phawananusat relies on important terms in Buddhism and the framework of anatomy and physiology. Thus, one characteristic which can be clearly seen in his case is the use of important Buddhist terminology to signify meanings which are very different from their standard meanings, such as the words *citta, mano-viññāna, mano-dvāra, dhamma-ayatana, bhavanga, and ghāna-viññāna.* This is also the case in the previous two case studies, but in those cases, the new meanings result from taking Buddhist teachings and putting them in the framework of science, while in the case of Phra Khru Phawananusat, the new meanings of important Buddhist terms are derived while keeping within the framework of religious experience. Nevertheless, because Phra Khru Phawananusat tries to understand this religious experience through the framework of anatomy and physiology, the result is that the important Buddhist terminology used takes on meaning which fits into anatomy and physiology. This interpretive relationship between important Buddhist terms, religious experience, and anatomy and physiology can be illustrated as follows (Chart 8):

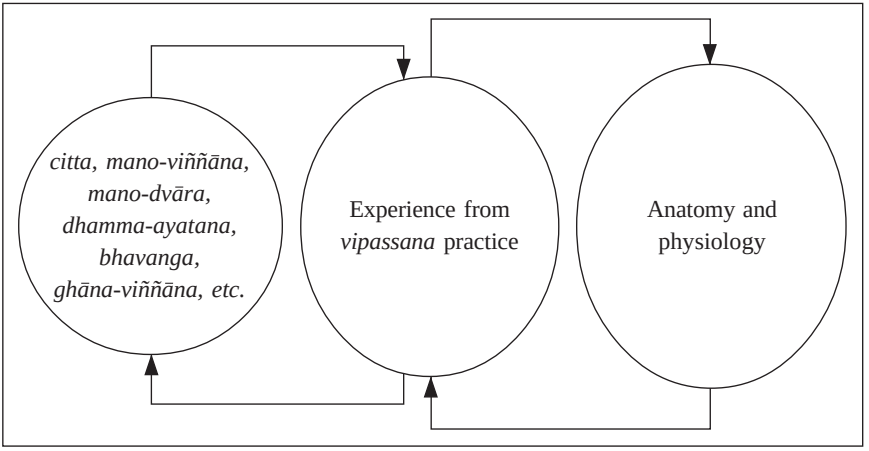

Chart 8

The first criticism that can be anticipated in Phra Khru Phawananusat's case concerns the inconsistencies in the use of Buddhist keywords (such as how *ghāna-viññāna* is used to mean the experience of seeing flickering phenomena similar to rays of sun glimmering through a haze) as well as criticism from Buddhist academics, who say that the brain and the *citta* or *mano-viññāna*, are two different things. Furthermore, although science is not cited all that much, there are reasons to suspect that what is cited does not actually accord with anatomical knowledge; for instance, the small holes in the brow region of the skull stated to be *mano-dvāra* are, according to anatomy, nerve passageways and are no different from similar holes found elsewhere in the skull. It is also certain that, in Buddhism, "*mano-dvāra*" is not the mind's "exit passage".

In Phra Mettanantho Bhikkhu, the use of a scientific framework is for the purpose of finding a basis for investigating the truth of events found in the *Tipiṭaka*, in which the search and the results of the search are located in an agenda of challenging a traditional society by moving Buddhism into a new context that can be called the developed society. In Atthanit Phokhasap, the use of a scientific framework is for the purpose of justifying the existence of "Thai-style Buddhism", which challenges contemporary Buddhist academics and moves Buddhism, occultism, and astrology into a new Buddhist context. What is the agenda behind the use of the scientific framework in Phra Khru Phawananusat? The consideration of the matter reveals that his trademark style of meditation practice is supported by an interpretation and explanation that makes use of that framework in order to fulfill the agenda of propagating *vipassana* practice among people who deem such practice to be intangible. This interpretation and explanation gives the practice of *vipassana* a very concrete foundation, in both anatomical terms (such as the brain and the skull) and in terms of experience (such as sensations of warmth). This has the effect of removing *vipassana* from its original context, where it is believed to be intangible, and bringing it into a new context where it is believed to be corporal. This agenda can be demonstrated in *Chart 9:*

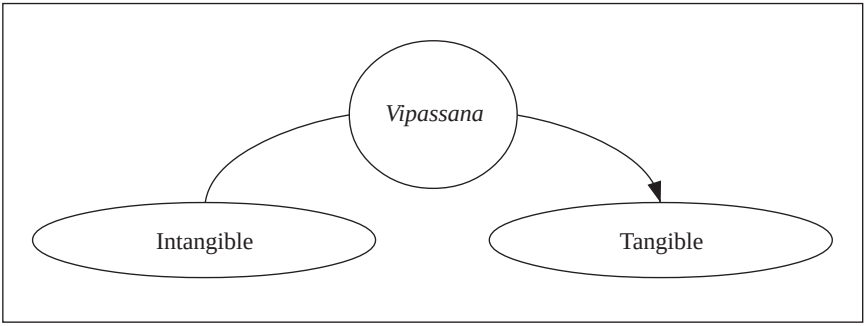

Chart 9

When the results of Phra Khru Phawananusat's interpretation and explanation of religious experience within a scientific framework and agenda of interpretation and explanation are analyzed, it can be concluded that the hermeneutics of Buddhism within a scientific framework that he uses is a "hermeneutics of corporality." His hermeneutics does not serve the purpose of challenging an authority, as in the other two cases, but are used to establish a firm corporal basis for the practice for *vipassana* through the corporality of anatomy and physiology.

5. Appropriate Approaches to Interpreting and Explaining Buddhism within a Scientific Framework

In presenting appropriate methods of interpreting and explaining Buddhism using the framework of science, the first issue that needs to be clearly pointed out is the difference between an appropriate *method* of interpretation and explanation versus an appropriate *hermeneutics* for interpretation and explanation. This difference parallels the distinction mentioned in the beginning of this chapter between interpretation and explanation itself versus the "*hermeneutics* for interpretation and explanation."

Interpretation and explanation is an investigation governed by a system of working logic known as the *hermeneutical circle*, while the hermeneutics of interpretation and explanation can be understood through the agenda in which such an investigation is conducted but which is

concealed in the background of the investigation. This can be used to explain the difference between an "appropriate method" versus the "appropriate hermeneutics for interpretation and explanation" – that is, asking questions about an appropriate method for interpretation and explanation in order to find constructs which ought to be part of such an investigation. At the same time, it is apparent that questions raised about an appropriate hermeneutics for interpretation and explanation will, on the one hand, examine appropriate methods and, on the other, also examine the suitability of the agenda with which the interpretation and explanation is carried out.

In any case, the search for an appropriate standard for determining an agenda seems futile. This is because one important construct of an agenda is its objective which is meaningful within a specific context. Thus, there is more variety and diversity than can be accommodated by a single standard. What can be done, however, is to research, analyze, and critique those agendas according to their respective contexts. Furthermore, in many cases, the agenda depends on the philosophical standpoint. A clear example is the different agendas set in the frameworks of different feminist projects. Debate on the suitability of the agenda has therefore become a philosophical debate. If this matter is to be considered specifically in terms of its relationship to a case study, raising questions about the suitability of the agenda behind an interpretation and explanation will lead us to question whether or not the agenda with which Phra Mettanantho Bhikkhu brings Buddhism into the context of "a developed society" is suitable. It can be seen that evaluating this agenda will ultimately take us beyond the scope of interpretation and explanation. In fact, this form of questioning can stand on its own and without mention of interpretation and explanation at all. In considering the above again, it is clear that interpretation and explanation are mechanisms geared towards supporting a certain answer to a given question. With these complexities in mind, the purpose of this section is not to examine the appropriate hermeneutics for interpretation and explanation, but instead to focus mainly on their appropriate method. Nonetheless, questions concerning the suitability of an agenda will not be completely omitted. Towards the end, the specific considerations concerning the appropriateness of

interpretation and explanation will reveal something about the methods of determining an agenda.

The next question is, how should questions about the appropriate method for interpretation and explanation be answered? No studies have been found which directly examine this matter. The only studies found present an appropriate method for the comparison of Buddhism to science, namely Cabezon (2003), as well as Restivo (1978) which addresses some of the same topics as Cabezon. One likely reason that no studies examining appropriate methods for interpretation and explanation have been found is the intricate nature of interpretation and explanation, which involves many different issues. The issue of the agenda in interpretation and explanation, as described in the last paragraph, should serve as a good example of this complexity. However, when an agenda's constructs are separated, its examination becomes easier.

When it is clear that the constructs of an agenda are to be separated and the questions will specifically address the act, and not the hermeneutics, of interpreting and explaining, the method of answering the questions should rely on the basic aspects of the act of interpreting and explaining, comprising the "parts," the "whole," and the relationship between the two. The whole should be mentioned first, as it is the basic premise for consideration in all three case studies used. As shown earlier, the identification and selection of the whole depends on the agenda. Thus, the issue of selection may be skipped, and the matter for consideration may be focused only on the characteristics of the already-selected whole. Here, the basic assumption is that even though the "whole" is selected to serve an agenda, here the "whole" does not possess only a utilitarian value but should be appreciated for its own intrinsic value. Though the whole must possess a value for it to be selected to serve an agenda, its intrinsic value should also be appreciated.

The first recommendation following the basic assumption above is that the "whole" must be accurate. In the earlier cases, modern science is selected as the "whole" because it is deemed to be reliable and influential. However, when the concepts, principles, or theories of modern science are actually applied, logical fallacies crop up in the forms of equivocation and

category error. In other words, scientific terms are used in ways that stray from their original meanings. As a result, what is called "modern science" is in fact not really modern science at all, but rather merely rhetoric that carries the alluring scent of scientific credibility. In the case studies, this problem is not limited to the words alone. In some cases, it is a matter of making use of scientific discoveries but not explaining them in a straightforward manner (as in the case of the holes in the skull). However, what is more common is the distortion of concepts, principles, and theories that comes from attaching to them new meanings and applying them to categories of things that they were not meant to describe.

The next matter to consider involves the "parts." As mentioned above, the assessment accompanying the analysis of the case studies focuses on the "whole" and leaves out questions about problems of assessing the "parts." It has been proposed that when something is taken to be a "whole," its integrity should be preserved. If modern science is used, its application should stay true to modern science and not stray into historical criticism or New Age beliefs and opinions that are labeled "modern science." Otherwise, what benefit would the scientific content serve other than as an advertisement? Nevertheless, it is difficult to propose recommendations for the "parts". This is because when "parts" are interpreted and explained, the intention is to achieve an understanding beyond the current meanings of those individual parts. It is irrational to expect the "parts" to remain as they were when they are incorporated into a new "whole."

This question that follows concerns how "parts" should be considered. We certainly cannot rely on the question of how to select the "parts" because we are avoiding considering the issue of agenda. The reason why this avoidance leads to the omission of this question is because in examining the aforementioned case studies, we find that the selection of a "whole" depends on the previously-selected "parts," and that the selection of the "parts" depends on the existing agenda. What ought to help in the examination of the "parts" is an inquiry into the scope or extent of change that is acceptable when the "parts" are re-integrated into a new "whole." This is because if the reintroduced "parts" change completely, there would

be no benefit to using those "parts" – they would have practically no substance. If the "parts" can be anything at all, what influence would they have on the "whole"? As mentioned earlier, the "parts" and the "whole" have a relationship within the framework of the hermeneutic circle, which means that both constructs influence each other. We understand the "parts" from the "whole" and we understand the "whole" from the "parts."

An example in one of the case studies where certain "parts" undergo drastic changes is the Four Great References in Phra Mettanantho Bhikkhu's work. As presented earlier, initially Phra Mettanantho Bhikkhu states that the Four Great References may only be used for interpreting the principles of *Dhamma*, but after some interpretation and explanation through the framework of "modern science" (which is actually historical criticism), it turns out that the Four Great References are used to interpret historical events, something totally different from Dhamma principles. This deviation can be considered a complete conceptual change of category. This case poses the question of whether any benefit is gained from citing the original Four Great References when they end up completely swallowed by the "whole" of historical criticism, leaving them in name only. This is another example of the problem of borrowing terms to use as advertisement signs.

How should the matter of taking "parts" and using them in ways that retain their significant meanings be understood? First, the issue of compatibility must be considered, as Cabezon proposes (2003: 49). The author explains that this model of relationship exhibits both similarities and differences between Buddhism and science. The model does not view Buddhism and science as too different to be compatible, nor does it present them as being too similar or alike either. Rather, it finds that Buddhism and science can reinforce each other through their commonalities as well as their differences, in a form of dialogue or conversation. For example, medical science might speak about treating an illness and Buddhism might join the conversation on that topic. In the end, they arrive at a more integrated solution for healing sickness, with both sides acquiring more knowledge from each other. In this manner, both are able to advance through the challenges they face and build on their knowledge in their own ways.

Wallace (3003: 27) sees a different point of emphasis in such a dialogue, namely, that importance should be given to how one side's familiarity with the other allows for a greater understanding of itself. Wallace's proposal points to an issue that relates to interpretation and explanation. Why does exposure to different or unfamiliar things cause one to develop a greater understanding of oneself? This is widely described in the science of interpretation, and the most helpful concept in explaining this is the hermeneutic circle mentioned in the beginning. If the hermeneutic circle is used as a framework, it can be understood that one model for dialogue is the use of one thing as a "whole" and other things as its "parts." For instance, the Buddha's worldview may be presented as a "whole" and scientific concepts or theories as "parts," or vice versa. The attempt to understand creates a dynamic relationship between the "whole" and the "parts", enabling one to understand or extract new meaning from both.

The matter concerning the use of the "parts" within a framework that retains its significance should be understood using the "hermeneutics of mutual reinforcement". In Wallace's framework this means a dialogue which promotes better understanding of oneself. If we follow this model, a question that always needs to be considered is whether taking the "parts" from Buddhism and placing them in the "whole" of science helps improve our understanding of the "parts," and in what way; how does this allow us see more possibilities of understanding?

The next matter is that the examination of various case studies demonstrates that the selection of the "whole" depends on previously selected "parts," and the selection of "parts" depends on the existing agenda. In fact, we can select the "whole" first if we are aware of how the "parts" and the "whole" influence each other. Incorporating new "parts" into the "whole" automatically challenges the "whole," as its different aspects must be scrutinized in order for it to fit with the "parts" that are brought up for consideration. This process may be known, simply, as "learning from Buddhism." For example, we may think of psychologists who already have their own theoretical frameworks and who later include concepts about emotions and feelings from Buddhism and examine them within their working framework. Doing so may enable psychologists to improve their

understanding of the psychological frameworks or psychological phenomena that they study by providing new perspectives, angles, or details.

At this point, it should be apparent that examining "parts" results in limiting the scope of the agenda. As mentioned earlier, the agenda and the "parts" are interconnected; thus, there tends to be meaning that is related to the choice of agenda. This follows from the recommendation that, in the interpretation and explanation of "parts" from Buddhism within a scientific framework, one ought to aim at understanding the "parts" better, in order for those "parts" to retain their significance as "parts". Retaining such significance is in the agenda of interpreting and explaining, which should include the aim of strengthening one's understanding of oneself, whether 'oneself' refers to Buddhism or science. This point may be accepted as mainly academic and may not be accepted by individuals whose purpose in interpreting Buddhism within a scientific framework is to make a social, cultural, or political point. Nevertheless, it will be considered as a recommendation concerning the agenda, following as it does from recommendation concerning the "parts".

It can be concluded that the appropriate method for interpreting and explaining Buddhism through the framework of science consists of: a) the chosen "whole" which, whether a scientific concept, principle, or scientific theory, must be reliable and accurate; b) the "parts" chosen from Buddhism which must retain their true and significant meanings; in other words, although possibilities for new meanings may arise concerning these "parts," the inherent meanings of the "parts" must be conserved and not altered in any way (e.g. not changed in terms of conceptual categories); and c) the agenda of the interpretation and explanation should be determined so that there is self-reflection and understanding, whether this means understanding Buddhism or science through new perspectives, angles, or details.

6. Summary

The analysis demonstrates that Phra Mettanantho Bhikkhu's and Atthanit Phokhasap's interpretations and explanations of Buddhism through scientific frameworks can be classified as "reactionary hermeneutics" as

they contain the agenda of challenging a widely-accepted authority. In the case of Phra Mettanantho Bhikkhu, this "authority" is the traditional culture, represented by the institution of the Sangha. In the case of Atthanit Phokhasap, the authority is the Buddhist academia currently in vogue. On the other hand, the interpretation and explanation of Phra Kru Phawananusat (Thammatharo Bhikkhu) can be classified as a "hermeneutics of corporality," with the aim of making *vipassana* practice more tangible and easy to understand by explaining his experience using anatomy and physiology.

From the assessments of these studies, it is evident that there are problems of accuracy in referencing scientific contents. There are logical fallacies in the use of terms that deviate from their original meanings, leading to category errors and causing confusion as to whether or not the science that they cite is genuinely science. Furthermore, it has been found that, in many cases, the result of interpretation and explanation of Buddhist teachings through the framework of science results in the complete distortion of those teachings. This leads to a similar effect – confusion as to whether or not those Buddhist teachings are genuinely Buddhist.

As for the appropriate method for interpreting and explaining Buddhism through the framework of science, it is found that this should be carried out in the framework of mutual reinforcement. The factors that need to be considered in a hermeneutic circle concerning the "whole" and the "parts" are as follows: first, when science is used as the "whole", whether this involves scientific concepts, principles, or theories, the original content must be presented accurately. Second, the significant meanings of the "parts" taken from Buddhism should be retained. Even if the process of interpretation and explanation gives rise to new meanings, the original meanings must not be altered in any way. Last, improvement of one's understanding of oneself should be regarded as the purpose of the interpretation and explanation, because such self-reflection may mean a better understanding of Buddhism or science through new perspectives, angles, or details.

7. Recommendations

The study reveals that in cases where Buddhism is considered alongside science, whether through comparison or interpretation and explanation, there are common problems with logical fallacies, namely, cases of hasty generalizations, question-begging, equivocation, and category error. Furthermore, these works contain problems with inaccuracies in presenting scientific content, as well as inaccuracies in citing Buddhist references. Thus, the recommendation is for the Buddhist academia to re-examine its methods in complementing Buddhism with scientific content so as to avoid such problems.

Other than accuracy in the use of logic, scientific content, and Buddhist content, which every work should take into consideration, another solution for the type of work which deals with interpretation and explanation is to follow the guidelines in interpretation and explanation of Buddhism through scientific frameworks as proposed in this study. This method adheres to the "hermeneutics of mutual support" between Buddhism and science. The application of science in attempts to understand Buddhism through new perspectives, angles, and details is a way of preventing Buddhism from being short-changed and turning into something else. Furthermore, using Buddhism as a support for science helps make the relevance of Buddhist teachings more apparent, and this can result in greater credibility and validity for Buddhism. Lastly, this type of work requires a bold willingness to accept the possibility that Buddhism may be found to be incompatible with science after all.

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Paṭiccasamuppāda
(Dependent Origination)

Chamnong Thongprasert*

Beauty can be good or bad, depending on how the owner puts it to use.

During the Buddha's lifetime there was a Brahmin named Vakkali. He was captivated by the Buddha's beauty and decided to be ordained. He followed the Buddha not because he wanted to listen to His Dhamma but because he wanted to look adoringly at His beautiful physique. The Buddha was said to havepossesseda combination of "32 marks and 12 subsidiary features of the Great Man", and a person who possesses them is destined to be either a fully enlightened Buddha or a universalking. When Vakkali was newly ordained and followed the Buddha everywhere just to admire his beauty, the Buddha remained silent about it because He considered the Brahmin as having ordained into monkhood out of "faith," even though it was not faith in the Dhamma but in His physical splendor. Later on, when the right time came, he said to Monk Vakkali, "Behold, Vakkali, when you look at me, you do not really see me. A person who sees Dhamma can be said to see the Buddha." (*Yo Dhammaṃ Passati; So, Maṃ Passati*)

Now, what is the meaning of Dhamma? If one asks a student, one may get the answer "Dhamma is Khuṇākon (goodness)," as written by Phraya Sisunthonwohan (Noi Achanrayangkun) in his verse in praise of the Dhamma as follows:

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Dhamma Khue Khunakon Suan Chop Sathon
Dut Duang Prathip Chatchawan
Haeng Ong Phra Satsadachan Song Sat Sandan
Sawang Krachang Chai Mon
Tham Dai Nap Doi Mak Phon Pen Paet Phueng Yon
Lae Kao Kap Thang Naruephan
Somya Lok Udon Phitsadan An Luek O-lan
Phisut Phiset Suksai
Ik Tham Ton Thang Kanlai Nam Khanan Khan Khai
Patibat Pariyat Pen Song
Khue Thang Damneon Dut Khlong Hai Luang Lu Pong
Yang Lok Udon Doi Trong
Kha Kho On On Uttamong Nop Tham Chamnong
Duai Chit Lae Kai Wacha

(Translation: Dhamma is the source of goodness. All the good things in it shine like a brilliant torch of the Buddha, the noble teacher, bringing to light the nature of creatures and clearing the mind of impurities. If one counts Dhamma in terms of the Paths (*Magga*) and their Fruits (*Phala*), the total number is eight, or nine if one includes *Nibbāna*. All this constitutes *Lokuttaradhamma* – profound, comprehensive, pure, wonderful and radiant. The Buddha also provides two kinds of teachings that will lead to the ultimate world – the practice (*Paṭipatti)* and study (*Pariyatti*) of Dhamma. I humbly bow my head and pay respect to the Dhamma with my mind, body and speech.)

When I was a school student, I recited this verse in praise of the Buddha, Dhamma, and *Saṅgha* regularly every week. I wonder if the students today still do so. If so, do their teachers explain the meaning of the verse to them?[1] Or do they let the students recite in a parrot-like manner?

[1] The verse in praise of the Buddha, Dhamma, and Saṅgha was part of a textbook on Thai literature for Mathayom Suksa-5 students (Grade 12). It could be found in Wannasan Wichak Book IV under Upper Secondary Education Syllabus 1981 (revised 1990) and was no longer used in the 2008 syllabus. - Editor

The verse is actually quite profound in its meaning. If it is clearly explained to the students, it may help them appreciate the value of the Triple Gems and increase their faith in Buddhism.

The word "Dhamma" in the verse is qualified by Khunakon which means "the source of all goodness". Dhamma is a general term which can have a positive or negative connotation. In Pali there is a saying "*Kusalā Dhammā Akusalā Dhammā; Abayākatā Dhammā*", which means "There are things which are wholesome; there are things which are unwholesome; and there are things which are without consequences." Dhamma is indeterminate; it is neither *Kusalā* nor *Akusalā*. However, in this verse, only wholesome things are referred to as in "Suan Chop Sathon" (All the good things) and are compared to "Dut Duang Prathip Chatchawan" (like a brilliant torch). Dhamma here refers to 4 *Magga*, 4 *Phala*, and 1 *Nibbāna*, a total of 9 elements, which constitute the higher world or *Lokuttaradhamma* – Dhamma beyond the world, above the pull of all worldly desires.

When the Buddha told Vakkali, "A person who sees Dhamma can be said to see the Buddha," what Dhamma was He talking about?

If one is asked what kind of enlightenment the Buddha attained, those who have read King Rama VI's writings would answer "the Four Noble Truths."

Is the answer correct? I would say it is not wrong, but it is not quite right either.

Why? Because it begs other questions.

Those who have studied the **Four Noble Truths** would know that they are *Dukkha*, *Samudaya* (cause of suffering), *Nirodha* (cessation of suffering), and *Magga* or *Dukkha-nirodha-gāminī paṭipadā (*the path leading to the cessation of suffering). Talking of ***Samudaya,*** as far as one knows, one will find that the cause of suffering is *Tanhā* or "craving" consisting of *Kāma-Tanhā* or craving for sensual pleasures, i.e. sights, sounds, smells, tastes, *Phoṭṭhabba* (tangible objects) and *Dhamma* (mental objects). Now, where does such craving come from or what causes it? The Four Noble Truths do not give a satisfactory answer. One has to go right

to the root cause of craving and study *Paṭiccasamuppāda* or Dependent Origination for a better understanding, because the term **Dhamma** used here refers specifically to *Paṭiccasamuppāda*.

Dhamma, Paṭiccasamuppāda, and the **Buddha** are considered one and the same. In *Mahāhatthipadopamasutta Majjhimanikāya Mūlapaṇṇāsaka* Ven. Sāriputta, one of the two principal disciples of the Buddha often shown standing on the Buddha's right side, said the following to the attending monks:

> *This word was spoken by the Buddha in the following manner: A person who sees*
> *Paṭiccasamuppāda is said to see Dhamma. A person who sees Dhamma is said to see Paṭiccasamuppāda.*
> *(Yo Paṭiccasamuppannaṃ Sati; So Dhammaṃ Passati Yo Dhammaṃ Passati; So Paṭiccasamuppādaṃ Passati)*

Ven. Sāriputta's words remind one of what the Buddha said to Vaggali:

> *Listen, Vaggali, what use is it seeing this decaying body? Lo, Vaggali, a person who sees Dhamma is said to see me; a person who sees me is said to see Dhamma. O Vaggali, when you see Dhamma, it is the same as you see me. When you see me,it is the same as when you see Dhamma.*

By the same token, this author views that ***Dhamma, Paṭiccasamuppāda***, and the **Buddha** are one and the same. The Buddha was not called by that name until He attained the state of enlightenment.

In the third *Sutta* of *Pañcamavagga Tikanipāta Itivuttaka Khuddakanikāya* the Buddha said to the monks:

> *O, monks, a monkmay take hold of the end of my robe and walk behind me following my footpath, but if he is still possessed by Avijjā (ignorance), strong desires for sensual pleasures, ill-will, inclination for malice, forgetfulness, lack of mental discipline, fickleness, and lack of self-control, he is said to be far away from me. I am truly far away from him.*

Why is this?

O, monks, since that person does not see Dhamma, and when he does not see Dhamma, he is said not to see me.
(Dhammaṃ Hi So Bhikkhave Bhikkhu Na Passati Dhammaṃ Apassanuto Maṃ Na Passati)

…Even if the person is 100 Yojana (about 10,000 miles) from me, if he has Dhamma or sees Dhamma, he is said to see me (the Buddha).
(Dhammaṃ Hi So Bhikkhave Passati Dhammaṃ Passanuto Maṃ Passati)

Shortly after the enlightenment the Buddha remained under the Great bodhi tree near the bank of the Nerunjara river in the district of Uruvelā, enjoyinga bliss of *Vimuttisukha* for seven days and reflecting on the principles of *Paṭiccasamuppāda* forward and backward throughout the first part of the night:

With Avijjā (ignorance) as condition, there is Saṅkhāra (volitional impulses).
With Saṅkhāra (volitional impulses) as condition, there is Viññāṇa (consciousness).
With Viññāṇa (consciousness) as condition, there is Nāma-Rūpa (body and mind).
With Nāma-Rūpa (body and mind) as condition, there is Saḷāyatana (6 Āyatana) (six sense bases).
With Saḷāyatana (the six sense bases) as condition, there is Phassa (contact).
With Phassa (contact) as condition, there is Vedanā (feeling).
With Vedanā (feeling) as condition, there is Taṇhā (craving).
With Taṇhā (craving) as condition, there is Upādāna (clinging).
With Upādāna (clinging) as condition, there is Bhava (becoming).
With Bhava (becoming) as condition, there is Jāti (birth).

With birth as condition, there are aging, death, sorrow, lamentation, pain, grief and despair. Thus is the arising of this whole mass of suffering.

Such consideration of *Paṭiccasamuppāda* is made in a proper forward order and in a systematic manner. The Buddha then reflected on the principles in a reverse order thus:

With the cessation (complete extinction) of ignorance, volitional impulses cease.
With the cessation of volitional impulses, consciousness ceases.
With the cessation of consciousness, body and mind cease.
With the cessation of body and mind, the six sense bases cease.
With the cessation of the six sense bases, contact ceases.
With the cessation of contact, feeling ceases.
With the cessation of feeling, craving ceases.
With the cessation of craving, clinging ceases.
With the cessation of clinging, becoming ceases.
With the cessation of becoming, birth ceases.
With the cessation of birth, aging and death, sorrow, lamentation, pain, grief and despair cease. Thus is there a cessation to this whole mass of suffering.

When the Buddha felt thus, He uttered the following words:

When all the Dhamma is clear to a Brahmin who is intent on considering the matter, then all his doubts will disappear, because he has understood all the Dhamma and its conditionality.

The Buddha reflected on *Paṭiccasamuppāda* during the first part, the middle part and the final part of the night. He considered *Paṭiccasamuppādaas* ***Ariya-Dhamma***, "something noble and worth knowing" and said to the monks at Jetawan monastery in Savatthi thus:

O, monks, so what is this Ariya-Dhamma that the noble disciples see and understand thoroughly with wisdom?

O, monks, the noble disciples in this case have carefully reflected in their minds on Paṭiccasamuppādathus: because there is so and so, there is so and so. When this thing occurs, this thing also occurs. When there is no such thing, there is also no such thing. With the cessation of this thing, this thing also ceases:

With ignorance as condition, there are volitional impulses.
With volitional impulses as condition, there is consciousness.
With consciousness as condition, there are body and mind.
With body and mind as condition, there are the six sense bases.
With the six sense bases as condition, there is contact.
With contact as condition, there is feeling.
With feeling as condition, there is craving.
With craving as condition, there is clinging.
With clinging as condition, there is becoming.
With becoming as condition, there is birth.

With birth as condition, there are aging, death, sorrow, lamentation, pain, grief and despair. Thus is the arising of this whole mass of suffering.

Paṭiccasamuppāda is also known as the **Middle Path.** The Buddha said to Brahmin Kaccānagotra at Jetawan monastery:

Behold, Kaccāna, to say that all things exist is one extreme view (not the Middle Path); on the one hand, to say that all things do not exist is another extreme view (not the Middle Path).

Behold, Kaccāna, I proclaim a teaching that is balanced, avoiding these extremes, thus:

With ignorance as condition, there are volitional impulses.
With volitional impulses as condition, there is consciousness.

With birth as condition, there are aging, death, sorrow, lamentation, pain, grief and despair. Thus is the arising of this whole mass of suffering.

Paṭiccasamuppāda is the most profound and difficult issue to understand. Once, Ven. Ananda told the Buddha that he now clearly understood all its principles. The Buddha said:

> *Say not so, Ananda. This principle of Paṭiccasamuppāda is profoundand hard to see. O, Ananda, because beings do not know, understand, and thoroughly realize this teaching, they (their minds) are confused like tangled threads thrown together in bundles, entangled like a web of tumbleweeds, and cannot escape Saṃsāra (the cycle of births and deaths), unhappiness, and perdition.*

This is so, because only beings like the Buddha can fully understand *Paṭiccasamuppāda*. He attained enlightenment because he understood its principle. After he became enlightened, he spent the whole night considering *Paṭiccasamuppāda* forward and backward.

We should explorefurther the 12 links of *Paṭiccasamuppāda* to obtain a better understanding of it.

Paṭiccasamuppāda explains that a past event has *Avijjā* (ignorance) and *Saṅkhāra* (volitional impulses) as conditions. Yet, ignorance is always accompanied by *Taṇhā* (craving) and *Upādāna* (clinging) while volitional impulses are instrumental to the process of *Kāma-Bhava* (becoming). Therefore, in *Paṭisambhidāmagga Scripture*, a past event is explained fully with the addition of craving, clinging and the process of becoming in the following manner:

> *Avijjā refers to ignorance that influences our action in our past life.*
> *Saṅkhāra refers to continued generation of action.*
> *Taṇhā refers to desire to obtain the result of action in the present and future life.*
> *Upādāna refers to attachment to action and its consequences.*
> *Kāma-Bhava refers to intention.*
> *These five elements are past conditions leading to birth in the present life.*

In King Rama IV's writing entitled *Paṭiccasamuppāda Dhamma*, mention is made of how the five conditions of ignorance, volitional impulses, craving, clinging and becoming in the past life lead to the five conditions of ignorance, volitional impulses, craving, clinging and becoming in the present life, leading to another five conditions of ignorance, volitional impulses, craving, clinging and becoming in the future life. King Rama IV (2004) supplies an explanation on the matter as follows:

> *What is* ***ignorance****?*
>
> *It is* ***Moho*** *that clouds wisdom and prevents it from seeing the Four Noble Truths. Here* ***Moho*** *refers to "delusion". By its nature* ***Moho*** *muddies the mind and causes it to mistake bad for good and wrong for right. Kīṭāviya: This is just like a host of grasshoppers and moths always glad to see a flame, thinking that it is nice and cool. Upatittavā: They rush into the flame to their death. By the same token people mistake wrong for right. Yathā Mī: Thus, when* ***Moho*** *becomes a dominant force in one's nature, it clouds up the mind into mistaking wrong for right. Evaṃeva: In the same manner, when* ***Moho*** *is dominant in one's nature, it prevents the mind from seeing Tilakkhaṇa or the Three Characteristics of Existence, which are Aniccaṃ (impermanence), Dhukkhaṃ (suffering), and Anattā (non-self) so that one cannot see the Four Noble Truths. Moho veils over the mind like clouds hiding the moon from sight. That is what* ***Moho*** *can do. The Buddha calls it* ***Avijjā*** *(ignorance). Avijjā Paccayā Saṃkhārā: When ignorance occurs, it is a condition leading to* ***Saṃkhāra*** *(volitional impulses).*

Avijjā is "ignorance" or partial understanding. In this case it refers to ignorance about the Four Noble Truths. One does not know what is suffering, the cause of suffering (*Dukkha-Samudaya*), where to stop suffering (*Dukkha-Nirodha*), or how to do so (*Dukkha-Nirodha-Gāminī Paṭipadā*).

What is *Saṃkhāra*? King Rama VI (2004) provides the following explanation:

> *What is **Saṃkhāra?** It means a formation of something. Kusala (a good act) and Akusala (a bad act) are instrumental to rebirth together with the consequences of such act. This is called Saṃkhāra. It is nothing more than the merit and demerit of the action that accompanies the rebirth. There are three kinds of Saṃkhāra: Puññābhisaṃkhāra, Anupuññābhisaṃkhāra, and Aneñajābhisaṃkhāra. Puññābhisaṃkhāra refers to eight types of Kāmābacarakusala and four types of Rūpābacarakusala. What does one mean by Kāmābacarakusala? It could be explained in this way. A person has not yet attained the state of Jhāna but he retains his faith and continues to do the act of giving, observe moral conducts, meditate and listen to the sermon of Dhamma as far as he can. This kind of good act can lead to his rebirth in the human world and the six heavens of sensual pleasures. Such act is known as Kāmābacarakusala, while Rūpābacarakusala is the state of meditative attainment during the first, second, third and fourth Jhāna. This is called Rūpajhāna, Jhānas of the Fine Material Sphere. Such good act can enable a person to be reborn in the Brahma world and is known as Rūpābacarakusala. These two kinds of Kusala are called Puññābhisaṅkhāra. Anupuññābhisaṅkhāra refers to 12 unwholesome thoughts and all immoral and sinful mental activities, e.g. thinking of killing others. If a person commits such act, he will be conditioned to be reborn in one of the four lower worlds of hell, hungry ghosts, Asura demon, and animals where he will undergo so much suffering. Afterwards, when that person is reborn in the human world, he will find himself in a base position, destitute, stupid, suffering from many diseases, beset with misfortune, accidents, dangers and all kinds of hazard. This is the result of unwholesome act. It is therefore called Anupuññābhisaṅkhāra, while Aneñjābhisaṅkhāra refers*

to a person practicing Arūpajhāna of the formless sphere who will eventually be reborn in one of the four formless spheres as a bodiless Brahma who has only consciousness resolute and unshaken by any Akusula. The Kusala that results in the formless being is called Aneñajābhisaṅkhāra. These three kinds of Saṅkhāra go toward making possible rebirth. They do not cause the rebirth by themselves. This can be compared to a case in which a town architect remodels the city in honor of the king. The architect does not own the city. Saṅkhārapaccayā Viññaṇaṃ: With the above mentioned Saṅkhāra (volitional impulses) as conditions there is Viññāṇa (consciousness).

Ven. Sobhonmahathera (Mahasisayadau) (2010) explains *Saṅkhāra* in his book *Paṭiccasamuppāda: Causation of Saṃsāra* as follows:

Avijjā (ignorance) is a condition to Saṅkhāra (volitional impulses) which in turn is a condition to Viññāṇa (consciousness). Good or bad action in the past existenceis a conditionto the presence of consciousness in the new existence. In the beginning bad action may lead to rebirth in one of the four lower worlds of hell, hungry ghosts, Asura demon, and animals. Afterwards, there is a consciousness called Bhavaṅgacitta that moves passively and continuously during which it may experience one or more of the six senses of hearing, smell, taste, touch and thought. In other word, Bhavaṅgacitta is the same as the subconscious that we experience while we sleep and the same as the final consciousness just before we die. It is called Cuticitta. So Paṭisondhicitta (rebirth), Bhavaṅgacitta, and Cuticitta are the results (Vipāka) of the actions of the past existence.

There are five kinds of Akusala-Vipāka consciousness that experience objects through the five doors of the senses: eye-consciousness, ear-consciousness, nose-consciousness, tongue-consciousness, and body-consciousness. These consciousnesses are the results of the Akusala acts in the same

way as the consciousness that experiences the sense objects as they occur at the five sense doors (Sampaṭicachana) and the consciousness that acts to screen the sense objects (Santīraṇa). So, altogether there are seven consciousnesses that are the results of the Akusala acts (Anupuññābhisaṅkhāra).

On the other hand, the consciousnesses derived from Aneñajābhisaṅkhāra are the results of four Kusala acts of Arūpāvacara-citta (consciousnesses in the formless sphere). They are reborn as consciousnesses in one of the four formless spheres where Bhavaṅgacitta will arise inthe course of existence and Cuticitta will appear at the end of the existence.

With regard to Puññābhisaṃkhāra, five Kusala acts of Rūpāvacara are conditions to the existence of five Rrūpāvacara-citta consciousnesses in the form sphere, while eight Mahakusala-citta (great wholesome consciousnesses) are conditions to the existence of further eight consciousnesses in the sphere of the senses. These consciousnesses act as agents to rebirth, passive state of mind, and death in the human world and the six celestial spheres. They also act as Tathārammaṇa, i.e. taking on sense objects from Javana-citta (perceiving mind). After this, the Javana-citta will perceive all the seven sense objects such as hearing and hearing. The Kusala acts in the sphere of Kāmābacara are conditions to five consciousnesses that take on the good sense objects through the five doors of senses. Upekkhā-Sampaṭica-chana-citta acts as a receptor of sense objects, while Santīrana-citta considers sense objects consisting of Upekkhā-Vedanā (neutral feeling) and Somanassa-Vedanā (pleasurable feeling).

In short there are 32 Vipāka-citta (resultant consciousnesses):

- *4 Arūpāvacara-Vipāka-citta (consciousnesses in the formless sphere)*

- *5 Rūpāvacara-Vipāka-citta (consciousnesses in the form sphere)*
- *7 Kāmābacara-Akusala-Vipāka-citta (unwholesome sensuous consciousnesses)*
- *8 Kāmābacara-Kusala-Vipāka-citta (wholesome sensuous consciousnesses)*

All these 32 Vipāka-citta are conditions to Saṅkhāra (volitional impulses).

Next, how is *Saṅkhāra*a condition to *Viññaṇa* (consciousness)?

This subject is rather difficult to understand, because some people believe that there is nothing after death, while others maintain that after death there is rebirth. The Buddha considers both views mistaken, saying that the notion of rebirth after death is *Sassatadiṭṭh* (doctrine of the continuance of the soul after death) and the notion of nothing after death *Ucchedadiṭṭh* (doctrine of the annihilation of the soul). He teaches that rebirth or annihilation of the soul depends on aset of conditions. If the conditions are there, there is rebirth. If all the conditions for rebirth are exhausted, there is no rebirth in accordance with the *Paṭiccasamuppāda* principle.

Next, how is consciousness (*Viññaṇa*) a condition to Body and Mind (*Nāma-Rūpa*)?

Here King Rama IV (2006) explains in his writing, *Paṭiccasamuppāda*, as follows:

What is Viññaṇa? Citta is an agent of rebirth, while Vipāka-citta is an agent that produces the present result. This Citta is known as Viññaṇa, which means "awareness". As all the Citta are aware of sense objects. They are called Viññaṇa. It can be compared to a king. When the town architect finishes his work, the king is then free to preside over the city. Similarly, Viññaṇa, whether good or bad, occurs as a result of Saṅkhāra. Viññaṇapaccay Nāmarupaṃ: When consciousness occurs, it

does not stop there. It serves as a condition resulting in Body and Mind.

What is Rūpa (body or form)? Rūpa-Dhamma consists of 18 Nipaphana-Rūpa: 4 Mahābhūta-Rūpa, 5 Pasāda-Rūpa, 4 Visaya-Rūpa, 2 Bhāva-Rūpa, 1 Hadaya-Rūpa, 1 Jīvita-Rūpa, and 1 Āhāra-Rūpa. The 4 Mahābhūta-Rūpa are the four elements of Dhātu: Paṭhavi-Dhātu (earth-elements), Āpo-Dhātu (liquid-elements), Tejo-Dhātu (fire-elements), and Vāyo-Dhātu (air-elements), totaling 41 in number. The 19 earth elements are composed of Kesā/(hair on the head), Lomā (hair on other parts of the body), Nakhā (nail), Dantā (teeth), Taco (skin), Maṃsaṃ (meat), Nahārū (sinew), Aṭṭha (bone), Aṭṭhamiñjaṃ (bone tissue), Vakkaṃ (spleen), Hadayaṃ (heart), Yakanaṃ (liver), Kilomakaṃ (membrane), Pihakaṃ (viscera), Papphāsaṃ (lung), Antaṃ (large intestine), Antagunaṃ (small intestine), Udariyaṃ (newly ingested food), Karīsaṃ (old ingested food). These 19 parts are called Paṭhavi-Dhātu. The 12 liquid-elements comprise Pittaṃ (bile), Semahaṃ (phlegm), Pabbo (pus), Lohitaṃ (blood), Sedo (sweat), Medo (thick fat), Assu (tear), Vasā (soft fat), Kheḷo (saliva), Siṅghāṇikā (nasal mucus), Lasikā (marrow), and Muttaṃ (urine). These 12 parts are called Āpo-Dhātu. The four fire elements consist of Santappaggi, Paridayhaggi, Pariṇāmaggi, and Jiraṇaggi. Santappaggi is the fire element that keeps the body of a being warm. Paridayhaggi is the fire element that puts the body in turmoil. Pariṇāmaggi is the fire element that burns up the food. Jiraṇaggi is the fire element that burns down and ages the body. These four elements form Tejo-Dhatū. The six air-elements are Uddhaṅgamāvātā, Adhogamāvātā, Kucchi-sayāvātā, Koṭaṭhāsayāvātā, Aṅgamaṅgānisarinovātā, and Assāsapassāsavātā. Uddhaṅgamāvātā is the air that flows from the feet to the upper part of the body. Adhogamāvātā is the air that flows in the stomach. Koṭaṭhāsayāvātā is the air that flows in the intestines Aṅgamaṅgānusarinovātā is the air that flows

all over the body. Assāsapassāsavātā is the air that breathes in and out. These six elements form Vāyo-Dhātu. All the above mentioned are called Mahābhūta-Rūpa, because they are major sources for all forms of being (Rūpa) and can be compared to the caves in the mountain where animals inhabit. In other words, the 4 Mahābhūta-Rūpa are the places where all forms of Rūpa reside. The five Pasāda-Rūpa are Cakkhupasāda (eye-faculty), Sodapasāda (ear-faculty), Ghānapasāda (nose-faculty), Jivhāpasāda (tongue-faculty), and Kāyapasāda (body-faculty). Cakkhupasāda (eye-faculty) is the size of a louse located in the middle of the pupil, acting as an agent that sees all material forms. Sodapasāda (ear-faculty) is as small as a very fine hair of the yak, round like a ring, located in each ear canal, acting as an agent that hear all things. Ghānapasāda (nose-faculty) is shaped like a goat hoof, located in the middle of the nose, acting as an agent receptive of all smells. Jivhāpasāda (tongue-faculty) is shaped like a lotus petal, located in the middle of the tongue, serving as an agent receptive of all tastes. Kāyapasāda (body-faculty) spreads all over the body, acting as an agent receptive of all body contacts, whether rough or fine, hot or cold, soft or hard. If there is something wrong with this faculty, the body sensations will be lost or go astray. The four Visaya-Rūpa forms consist of Rūpāramaṇa, Saddāramaṇa, Gandhāramaṇa, and Rasāramaṇa. Rūpāramaṇa refers to Rūpa or forms, whether small or big, fine or rough, external or internal - all forms that appear at the eye-door. They are all called Rūpāramaṇa. Saddāramaṇa refers to all sounds that the ears receive. Gandhāramaṇa refers to all smells that reach the nose. Rasāramaṇa refers to all the tastes that reach the tongue. The two Bhāvarūpa consist of Itthī-Bhāva-Rūpa (femininity) and Purisa-Bhāva-Rūpa (masculinity). Itthī-Bhāvarūpa (femininity) displays feminine manners and characteristics, while Purisa-Bhāva-Rūpa (masculinity) has male manners and characteristics. If neither of these states is clear in a person,

he is called a bisexual person. Hadaya-Rūpa refers to the heart or mind. Jīvita-Rūpa is the faculty that gives vitality to life like water that keeps the water lily alive. Āhāra-Rūpa is food for consumption; the consumption of rice and water, for example, provides strength and colors to the skin, body, and blood in the present form. All the Rūpa or forms described above are only possible with the presence of Viññaṇa (consciousness). This consciousness is, therefore, a Citta that is a condition to the presence of Rūpa. But Viññaṇa, as a Citta, is not only a condition to Rūpa (material things) but also a condition to Nāma-Dhamma (mental things).

Nāma-Dhamma depends on three Vedanā (aggregates,) i.e. Vedanā (feeling), Saññā (perception), and Saṅkhāra (volitional activities). Vedanā-Khandha is a mental factor providing a feeling of happiness and unhappiness as well as equanimity (Upekkhā). Vedanā occurs in consciousnesses and therefore is considered one of Vedanā. Saññā consciousness takes note of everything and is therefore considered another Khandha (aggregate). Saṅkhāra-Khandha consists of 50 consciousnesses derived from Saññā-Vedanā. Originally, there were 52 consciousnesses, but Vedanā consciousness was moved to Vedanā-Khandha, and Saññā consciousness to Saññā-Khandha. The remaining 50 consciousnesses are considered Saṅkhāra-Khandha. These three Khandha occur when there is Viññaṇa as condition. When Nāma and Rūpa are present, they are conditions to Āyatana (sense spheres).

On the issue of "*Viññaṇa* giving rise to *Nāma-Rūpa*," Ven. Sobhonmahathera (Mahasisayadau) (2010) explains in his book *Paṭiccasamuppāda: Causation of Saṃsāra* revisedby Phra Phrommamoli (Somsak Uppasamo) and translated by Phra Khanthasaraphiwong as follows:

Nāma-Rūpa occurs as a result of Viññaṇa. According to the Paṭiccasamuppāda principle, Viññaṇa is a condition to

Nāma-Rūpa. This means that the arrival of Viññaṇa is a condition giving rise to Cetasika (mental activities) – something that naturally occurs with consciousness – and body at the same time. Cetasika that occurs with Viññaṇa includes feeling (Vedanā), perception and recognition (Saññā)of something relating to Kamma. Kamma-Nimittaand Gati-Nimitta are objects of consciousness appearing when a person is near death. Every consciousness must always be accompanied by Cetasika. Higher rebirths (Tihetuka-Paṭisandhi) of Brahma, gods, and humans are accompanied by three Kusala-Citta elements of non-greed, non-anger, and non-delusion. Middle-level rebirths of gods and humans (Davihetuka-Paṭisandhi) are accompanied by two: non-greed and non-anger. Low-level rebirths of gods on the ground and humans born with deformities are those without Kusala consequences (Ahetuka-Paṭisandhi), that is, without accompanying good qualities. However, Ahetuka-Paṭisandhi of humans in the Sugati-Bhūmi (blissful spheres) is considered a good rebirth compared to Ahetuka-Paṭisandhi in Dugati-Bhūmi (sphere of misery) of beings in the lower worlds of Apāya-Bhūmi.

Births/rebirths can be classified into three categories: in the mother's womb (Gabbhaseyya), on the wet ground (Saṅsedaja), and instant self-birth without the need for parents (Opapātika). There are two kinds of births in the mother's womb: in the body form (Jalābuja) e.g. humans and quadrupeds, and in the egg form that is later hatched out (Aṇḍaja) e.g. birds and chickens. All births are different at the beginning of the birth or regarding the size and time of formation. The birth of humans is our next subject which will be explained in the light of scripture commentaries.

Human births: The occurrence of Viññaṇa gives rise to Kamma-Jarūpakalāpa (Rūpakalāpa caused by Kamma). There are three Kalāpa or 30 Rūpa: 10 Kāya-Dasaka, 10 Bhāva-Dasaka, and 10 Vatthu-Dasaka. The Kāya-Dasaka

consists of Kāya-Pasāda-Rūpa and 9 other Rūpa (earth, water, fire, wind, color, smell, taste, nutriment, and life). The Bhāva-Dasaka consists of ten components: Purisa-Bhāva-Rūpa (forms indicative of masculinity) or Itthī-Bhāva-Rūpa) (forms indicative of femininity) and 9 other Rūpa of Kāya-Dasaka nature. When Bhāva-Rūpa is better developed, masculinity and femininity will become more marked. Bhāva-Rūpa is like a mechanism that shows gender development and manners peculiar to either sex. Sexual aberrations are clearly seen when a person's sexuality departs from the norm. Vatthu-Dasaka consists of object Rūpa (form) where mind-consciousnesses reside, including Paṭisandhi (rebirth), Bhāvaṅga (passive consciousness), and Cuti (decease/taking on another rebirth), together withnine other Rūpa forms. When aberrance occurs resulting in neither masculinity nor femininity, the being concerned is said to be without Bhāva-Rūpa. It has only 10 Kāya-Dasaka and 10 Vatthu-Dasaka, which are physical forms for Paṭisandhi, Bhāvaṅga, and Cuti to reside in. So, during the rebirth in general, Rūpa occurs for Viññaṇa to be conceived in the form of three groups of Kalāpa or 30 Rūpa forms forming Kalala[2]*, the beginning of life according to Buddhist scriptures.*

Rūpa in the mother's womb looks like a clear drop of water, the size of an oil drop hanging at the end of the yak hair, so small that it cannot be seen with a naked eye. Kalala does not occur by itself but as a result of the union of the father's semen and mother's menses. If we do not accept this, it is hard to explain why a born baby has a semblance of its parent. Therefore, the Buddha says in various Suttas that the body is a combination of four Dhātu (elements) together with the father's semen and mother's menses. In the Tipiṭaka mention

[2] *Kalala* is equivalent to "cell" in English.

is made of three conditions necessary for birth/rebirth to take place.

1. *Father and mother live together.*[3]
2. *The mother is at the menstruation age.*[4]
3. *Viññaṇa is conceived.*[5]

When the father's sperm and mother's menses join together and give rise to Utu-ja-Rūpa (form that occurs at a certain temperature), it is possible that such Utu-ja-Rūpa develops into Kamma-ja-Rūpa mixed with three groups of Kalāpa…

Studies by Western biologists show that the conception occurs when the mother's ovum joins the father's semen (sperm). The resulting form then develops into a fetus in the mother's womb. In the beginning the embryo is so small that it cannot be seen with a naked eye. This finding corresponds with the passage in the *Tipiṭaka* on conception and birth. The Buddha knew from his wisdom without the help of any instrument. He knew that life begins with three groups of *Kalāpa*, consisting of 30 *Rūpa* forms forming *Kalala*, a result of the combination of the mother's menses and father's semen. The Buddha taught this fact 2,500 years ago, long before modern scientific discoveries:

Paṭhamaṃ Kalalaṃ Hoti	*Kalalā Hoti Abbuda*
Abbuda Jāyate Pesi	*Pesi Nibbattatī Ghano*
Ghanā Pasākhā Jāyanti	*Kesā Lomā Nakhāpi Ca*

In "*Paṭiccasamuppāda*: Causation of *Saṃsāra*", Mahasisayadau (2010) mentions the following:

At the end of the seventh day Kalala develops into Abbuja characterized by murky bubbles. A week later it grow into a tissue called Pesi. Another week later it grew into a lump of

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[3] *Matapitūnaṃ Saṃvāso*

[4] *Utūnī*

[5] *Gandhabbo Okkamati*

meat called Ghana. In the fifth week it became Pañcasākhā, having fivebuds that eventually become arms, legs and head.

Visutthimagga Scripturegives no detail about further growth after the fifth week but says that after 77 days (11 weeks) there will arise Pasāda-Rūpa fed by nutrients absorbed from the mother's body. It also mentions that the fetus in the womb has fingernails and toenails.

According to modern science or biology, birth is caused by two factors. First, a man's spermatozoon joins a woman's ovum; second, the woman is at a menstruation age. Infertility is considered a "chance occurrence." In Buddhism and Buddhist philosophy, however, there is no such thing as "chance". Appealing to chance is only a way to cover up *Avijja* or one's ignorance. According to Buddhism, conception depends on three factors. The first two are the ones identified by modern science: ***Matapitūnaṃ Snaṃv̱āso***, the parents cohabit, i.e. have sexual intercourse; andthe woman is at a menstruation age. The Pali term for thisis ***Utunī***, which means "a person who has seasons." The word ***Utu*** means "seasons" or "menses" in common parlance. The third factor is ***Gandhabbo Okkamati***, which means "a Gantharva (angel) descends into the womb." "***Gandhabbo***" is taken to mean "the rebirth of *Viññaṇa*" in the Dhamma discourse. It does not matter how frequently a couple may engage in sexual intercourse. Without the rebirth of *Viññaṇa* into the womb, no conception will take place. Even in the event of *Viññaṇa* descending into the womb, if it dies on the way, no conception will take place. We call this "miscarriage". In his address to a general meeting of the Buddhist Association about 20 years ago, H.M. King Bhumibol said at one stage that "*Buddhism is scientific*." The Buddha knows all truths that can be known. He does not invent anything new, just like how Isaac Newton discovered the law of gravity. Newton did not invent the law but discovered it. The Buddha says in *Dhamma-Niyāma Sutta* that "whether a *Tathāgata* (Buddha) appears on earth or not, the truth that all *Saṅkhāra* is impermanent, subject to suffering and non-being will always be there. He merely comes to know the truth. After His enlightenment, He teaches it, shows it and formulates it, making

it easier to understand. However, Buddhism and science are different in that the latter discovers concrete truths, while the former discovers both concrete and abstract truths.

Next, *Nāma-Rūpa* is a condition to six *Āyatana*. What is *Āyatana*?

Āyatana means "connection base." The six *Āyatana* bases inside our body, i.e. the eyes, ears, nose, tongue, body, and mind, are internal *Āyatana*. They serve to connect to another set of six external *Āyatana* spheres, i.e. *Rūpa* (form), sound, smell, taste, tangible objects, and mind objects. King Rama IV (2004) explains in his *Paṭiccasamuppāda* as follows:

> *There are six kinds of Āyatana*: *Cakkhavāyatana, Sotāyatana, Ghānāyatana, Jivhāyatana, Kāyāyatana, and Manāyatana. Cakkhavāyatana is the two eyes on which all objects appear. The eyes are like the sources of Rūpa* (forms) *– hence the name Cakkhavāyatana. Sotāyatana refers to the two ears where all sounds appear. They are like the sources of sounds – hence the name Sotāyatana. Ghānāyatana refers to the nose where all smells are received. The nose is like the source of smells – hence the name Ghānāyatana. Jivhāyatana refers to the tongue where tastes appear. It is like the source of tastes – hence the name Jivhāyatana. Kāyāyatana refers to the body where all touches are felt whether cold or hot, soft or hard. It is like the source of all touches – hence the name Kāyāyatan. Manāyatana refers to the heart where all Dhamma known to Citta appears. The heart is the source of Dhamma – hence the name Manāyatana. Saḷāyatanapaccayā Phasso: When Āyatana appears as condition, there arises Phassa (contact/touch).*

Ven. Mahasisayadau (2010) explains the matter in his *Paṭiccasamuppāda: Causation of Saṃsāra* as follows:

> *Saḷāyatana means the six internal Āyatana (sense fields) or Davāra (sense doors), i.e. the eyes, ears, nose, tongue, body, and mind, as well as the six Āyatana or Āramaṇa (objects of consciousness), i.e. Rūpa (form), sound, smell, taste, tangible*

objects, and mind objects (all mental experiences). The meeting between the internal and external Āyatana is called Phassa. Phassa is a natural occurrence in the mind, known by the mind, without form and tangibility. However, it is a clearly felt phenomenon when the Āramaṇa is experienced in a fairly clear or powerful manner. For instance, when we see someone being bullied, we feel frightened or uncomfortable. Or when we see someone hanging on the tree top with a thin rope, we feel scared. When we are frightened, we feel a shiver up on our spine. Hearing, listening to, or reading an interesting story can give us so deep an impression that we never forget. All the examples given here show how powerful Phassa can be on the mind after it comes into contact with Āramaṇa.

King Rama IV (2004) explains in his *Paṭiccasamuppāda* thus:

Phassa refers to the mental faculty that comes into contact with sense objects. It is a dwelling for the six Āramaṇa of Rūpa (form), sound, smell, taste, tangible objects, and mind objects accessible by consciousness. This mental faculty occurs in all consciousnesses. With the presence of Phassa as condition, there arises Vedanā (feeling).

There are five kinds of Vedanā: Sukha-Vedanā (physical pleasures), Dukkha-Vedanā (physical pain), Somanassa-Vedanā (mental happiness), Domanassa-Vedanā (mental pain), and Upekkhā-Vedanā (indifference). Sukha-Vedanā is a feeling of pleasures. Dukkha-Vedanā is a feeling of physical discomfort. With Somanassa-Vedanā, the Citta feels joy. With Domanassa-Vedanāthe Citta feels displeasure. Upekkhā-Vedanā is the state in which Citta feels neither displeasure nor discomfort, neither Somanassa nor-Domanassa. The Citta is neutral. It is called Upekkhā-Vedanā. Vedanā is a dominant force where there is Āramaṇa. Vedanāpaccyā Taṇhā: With the presence of Vedanā as condition, there arises Taṇhā (craving).

There are three kinds of Taṇhā: Kāma-Taṇhā, Bhava-Taṇhā, and Vibhava-Taṇhā. Kāma-Taṇhā is a craving for sensual pleasures. Bhava-Taṇhā is a craving for existence together with Sassatadiṭṭhi. Sassatadiṭṭhi refers to the belief that after death beings are reborn again and again in an unending cycle, accompanied by sensual desires. This is called Bhava-Taṇhā. Vibhava-Taṇhā refers to the wish characterized by Ucchedadiṭṭhi. Ucchedadiṭṭhi is the belief that after death beings will not be reborn ever again. When such desires and sensual pleasures occur together with Ucchedadiṭṭhi, it is called Vibhava-Taṇhā. Each of the three Taṇhā is divided into three internal and three external, which are further divided into 36 past Taṇhā, 36 future Taṇhā and 36 present Taṇhā, totaling 108 Taṇhā. Taṇhāpaccayā Upādanaṃ: when Citta is secure in Taṇhā, Taṇhā is further strengthened.

Ven. Mahasisayadau (2010) explains the issue of *Phassa* as condition to *Vedanā* (feeling) as follows:

Vedanā has Phassa as its condition.

Phassa through the eyes is a condition leading to a feeling of happiness (Sukha-Vedanā), a feeling of unhappiness (Dukkha-Vedanā), or a sense of indifference (Upekkha-Vedanā), depending on the objects being experienced. If the object is beautiful, we feel happy. If the object is ugly we will feel uncomfortable. If the object is so and so, i.e. neither beautiful nor ugly, we will feel indifferent or Upekkha-Vedanā. Upekkha-Vedanā does not lead to a decision that a feeling is good or bad. We may not even know that there is a feeling of Upekkha-Vedanā in our mind. However, Upekkha-Vedanā is considered a feeling. In fact, all three kinds of Vedanā – happiness, unhappiness, and indifference – do not involve a person's self. No person is involved in the feeling of Vedanā. It is the character of Citta when experiencing contact.

Viññaṇa, Phassa and *Vedanā* appear at the time of seeing. ***Viññaṇa*** in *Paṭiccasamuppāda* means "consciousness/awareness", as mentioned by the Buddha: "Monks, the six groups of *Viññaṇa* are *Cakkhu-Viññaṇa* (eye-consciousness), *Sota-Viññaṇa* (ear-consciousness), *Ghāna-Viññaṇa* (nose-consciousness), *Jivhā-Viññaṇa* (tongue-consciousness), *Kāya-Viññaṇa* (body-consciousness, and *Mano-Viññaṇa* (mind- consciousness)." The word "*Viññaṇa*", therefore, does not mean soul in English. It means sense perception through the eyes, ears, nose, tongue, body and mind. It corresponds, rather, to the notion of "consciousness."

King Rama IV explicated the concept of *Viññaṇa* in his *Brahma-Cariyakathā* thus:

> *Viññaṇaṃ Aniccaṃ: Viññaṇa is impermanent. It consists of 89 Citta: 12 Akusla-Citta (consisting of 8 Lobha-Citta, 2 Dosa-Citta, and 2 Moha-Citta), 18 Ahetuka-Citta, 24 Kamabacarasobhana-Citta (consisting of 8 Kusala-Citta, 8 Vitaka-Citta, and 8 Kiriyā-Citta), 15 Rūpābacara-Citta (consisting of 5 Kusala-Citta, 5 Vitaka-Citta, and 5 Kiriyā-Citta), 12 Arūpābacara-Citta (consisting of 4 Kusala-Citta, 4 Vitaka-Citta, and 4 Kiriyā-Citta), 8 Lokuttara-Citta (consisting of 4 Magga-Citta and 4 Phala-Citta. The total number of Citta is 89, constituting Viññaṇa, with the power to perceive. Viññaṇa is impermanent. It occurs and goes out at the same time. It has no self. It is a non-self and vanishes away. It is owned by nobody. It is based on Nama-Rūpa, occurring and going out.*

In *Paṭiccasamuppāda* King Rama IV (2004) gives the following explanation on *Viññaṇa*:

> *What is Viññaṇa? Citta is an agent for rebirth, with Vipāka-Citta acting to bring about the present result. This is called Viññaṇa. Viññaṇa means "awareness" Every Citta by nature can perceive objects. That is why it is called Viññaṇa. Viññaṇa, by analogy, is like a king. When the town architects have finished with the decoration, the king is then free to rule the*

city. In a like manner, with Viññaṇa, Saṅkhāra serves to shape the rebirth according to the results of good and bad deeds. Viññaṇa paccayā Nāma-Rūpaṃ: When Viññaṇa occurs as a condition, it does not stop there. Of necessity it leads to Rūpa-Dhamma (form) and Nāma-Dhamma (mind) as a result.

Concerning *Rūpa-Dhamma* and *Nāma-Dhamma,* King Rama IV (2004) gives the following explanation in *Paṭiccasamuppāda*:

What is Rūpa (body or form)? Rūpa-Dhamma consists of 18 Nipaphana-Rūpa: 4 Mahābhūta-Rūpa, 5 Pasāda-Rūpa, 4 Visaya-Rūpa, 2 Bhāva-Rūpa, 1 Hadaya-Rūpa, 1 Jīvita-Rūpa, and 1 Āhāra-Rūpa. The 4 Mahābhūta-Rūpa are the four elements of Dhātu: Paṭhavi-Dhātu (earth-elements), Āpo-Dhātu (liquid-elements), Tejo-Dhātu (fire-elements), and Vāyo-Dhātu (air-elements), totaling 41 in number. The 19 earth elements are composed of Kesā (hair on the head), Lomā (hair on other parts of the body), Nakhā (nail), Dantā (teeth), Taco (skin), Maṃsaṃ (meat), Nahārū (sinew), Aṭṭha (bone), Aṭṭhamiñjaṃ (bone tissue), Vakkaṃ (spleen), Hadayaṃ (heart), Yakanaṃ (liver), Kilomakaṃ (membrane), Pihakaṃ (viscera), Papphāsaṃ (lung), Antaṃ (large intestine), Antagunaṃ (small intestine), Udariyaṃ (newly ingested food), Karīsaṃ (old ingested food). These 19 parts are called Paṭhavi-Dhātu. The 12 liquid-elements comprise Pittaṃ (bile), Semahaṃ (phlegm), Pabbo (pus), Lohitaṃ (blood), Sedo (sweat), Medo (thick fat), Assu (tear),Vasā (soft fat), Kheḷo (saliva), Siṅghāṇikā (nasal mucus), Lasikā (marrow), and Muttaṃ (urine). These 12 parts are called Āpo-Dhātu. The four fire elements consist of Santappaggi, Paridayhaggi, Pariṇāmaggi, and Jiraṇaggi. Santappaggi is the fire element that keeps the body of a being warm. Paridayhaggi is the fire element that puts the body in turmoil. Pariṇāmaggi is the fire element that burns up the food. Jiraṇaggi is the fire element that burns down and ages the body. These four elements form Tejo-Dhātu. The six air-elements

are Uddhaṅgamāvātā, Adhogamāvātā, Kucchisayāvātā, Koṭaṭhā-sayāvātā, Aṅgamaṅgānisarinovātā, and Assāsapassāsavātā. Uddhaṅgamāvātā is the air that flows from the feet to the upper part of the body. Adhogamāvātā is the air that flows in the stomach. Koṭaṭhāsayāvātā is the air that flows in the intestines Aṅgamaṅgānusarinovātā is the air that flows all over the body. Assāsapassāsavātā is the air that one breathes in and out. These six elements form Vāyo-Dhātu. Allthe above mentioned are called Mahābhūta-Rūpa, because they are major sources for all forms of being (Rūpa) and can be compared to the caves in the mountain where animals inhabit. In other words, the 4 Mahābhūta-Rūpa are the places where all forms of Rūpa reside. The five Pasāda-Rūpa are Cakkhupasāda (eye-faculty), Sotapasāda (ear-faculty), Ghānapasāda (nose-faculty), Jivhāpasāda (tongue-faculty), and Kāyapasāda (body-faculty). Cakkhupasāda (eye-faculty)is the size of a louse located in the middle of the pupil, acting as an agent that sees all material forms. Sodapasāda (ear-faculty) is as small as a very fine hair of the yak, round like a ring, located in each ear canal, acting as an agent that hear all things. Ghānapasāda (nose-faculty) is shaped like a goat hoof, located in the middle of the nose, acting as an agent receptive of all smells. Jivhāpasāda (tongue-faculty) is shaped like a lotus petal, located in the middle of the tongue, serving as an agent receptive of all tastes. Kāyapasāda (body-faculty) spreads all over the body, acting as an agent receptive of all body contacts, whether rough or fine, hot or cold, soft or hard. If there is something wrong with this faculty, the body sensations will be lost or go astray. The four Visaya-Rūpa forms consist of Rūpāramaṇa, Saddāramaṇa, Gandhāramaṇa, and Rasāramaṇa. Rūpāramaṇa refers to Rūpa or forms, whether small or big, fine or rough, external or internal – all forms that appear at the eye-door. They are all called Rūpāramaṇa. Saddāramaṇa refers to all sounds that the ears receive. Gandhāramaṇa refers to all smells that reach the nose. Rasāramaṇa refers to all the tastes that reach the

tongue. The two Bhāvarūpa consist of Itthī-Bhāva-Rūpa (femininity) and Purisa-Bhāva-Rūpa (masculinity). Itthī-Bhāvarūpa (femininity) displays feminine manners and characteristics, while Purisa-Bhāva-Rūpa (masculinity) has male manners and characteristics. If neither of these states is clear in a person, he is called a bisexual person. Hadaya-Rūpa refers to the heart or mind. Jīvita-Rūpa is the faculty that gives vitality to life like water that keeps the water lily alive. Āhāra-Rūpa isfood for consumption; the consumption of rice and water, for example, provides strength and colors to the skin, body, and blood in the present form. All the Rūpa orforms described above are only possible with the presence of Viññaṇa (consciousness). This consciousness is, therefore, a Citta that is a condition to the presence of Rūpa. But Viññaṇa, as a Citta, is not only a condition to Rūpa (material things) but also a condition to Nāma-Dhamma (mental things).

Nāma-Dhamma depends on three Vedanā (aggregates,) i.e. Vedanā (feeling), Saññā (perception), and Saṅkhāra (volitional activities). Vedanā-Khandha is a mental factor providing a feeling of happiness and unhappiness as well as equanimity (Upekkhā). Vedanā occurs in consciousnesses and therefore is considered one of Vedanā. Saññā consciousness takes note of everything and is therefore considered another Khandha (aggregate). Saṅkhāra-Khandha consists of 50 consciousnesses derived from Saññā-Vedanā. Originally, there were 52 consciousnesses, but Vedanā consciousness was moved to Vedanā-Khandha, and Saññā consciousness to Saññā-Khandha. The remaining 50 consciousnesses are considered Saṅkhāra-Khandha. These three Khandha occur when there is Viññaṇa as condition. When Nāma and Rūpa are present, they are conditions to Āyatana (sense spheres).

As for *Taṇhā, Kāma-Taṇhā* is the desire for sensual pleasures. *Bhava-Taṇhā is the desire to be so and so, and Vibhava-Taṇhā* is the desire

not to be so and so, or the desire to not be something, e.g. desiring to not be foolish, desiring to not be poor. In Buddhism, not desiring is itself considered a "desire."

From *Phassa* to *Taṇhā* and to *Upādāna* (clinging) one can trace back. *Upādāna* is the cause of *Taṇhā* which in turn gives rise to *Vedanā* , which in turn is the cause of *Phassa*. The word "*Paṭicca*" means "to depend on one another." For instance, parents cause a child to be born, and a child is the cause for the existence of the parents, for without children people do not become parents. From *Phassa* to *Upādāna* the same principle applies. For example, when a man and a woman fancy each other, they are engaged in *Phassa*, e.g. holding hands, embracing, or having sexual intercourse. All this is *Phassa*. When people like each other and touch each other, they feel happy. When they feel happy, they want to re-experience that happiness by repeating the touch. With happiness, there arises *Taṇhā* or "desire" or love. The more they touch, the greater the love or desire. Then arises *Upādāna*, "clinging" to the notion that this person is my lover, my husband, or my wife that nobody else can possess. There is a feeling of jealously. This is *Upādāna*.

The word "*Upādāna*" means "clinging" or "jealousy" or "possessiveness." King Rama IV (2004) explains thus:

> *There are four kinds of Upādāna: Kāmupādāna, Diṭṭhupādāna, Silabbatupādāna, and Attavādupādāna. Kamupādāna is clinging to sensual pleasures and objects. Diṭṭhupādāna is clinging to views of Sassatadiṭṭhi (continuance of the soul after death) and Ucchedadiṭṭhi (extinction of the soul after death). Silabbatupādāna refers to clinging to rules and rituals of non-Buddhist priests and teachers. Attavādupādānais clinging to self. Upādāna-Paccayā Bhavo: When Upādāna occurs, it is a condition to Bhava (becoming/existence).*
>
> *Bhava consists of Kāma-Bhava and Uppatti-Bhava. All the perception and volition that accompany consciousness or Citta include both Kusala and Akusala elements. This existence is called Kāma-Bhava. Uppatti-Bhava refers to 4 Apāya-Bhumi*

(unhappy planes of existence), 1 Manssā, 6 Kāmāvacara-Bhumi (sensuous planes of existence), totaling 16. Rūpa-Bhava refers to 16 Rūpa-Brahma, while Arūpa-Bhava signifies 4 Rūpa-Brahma. Here, however, the focus is on Kāma-Bhava, since it is a condition to the existence of Jāti (birth). Bhavapaccayā Jāti: When Kāma-Bhava occurs, it is a condition to Jāti.

King Rama IV (2004) divides *Bhava* into *Kāma-Bhava* and *Uppatti-Bhava*. Most texts, however, adopt *Kāma-Bhava*. For example, Ven. Mahasisayadau (2010) adopts the following view regarding this matter:

Karma and the occurrence of new Bhava:

The Buddha says that Bhavapaccayā Jāti (with Bhava as condition there is Jāti). Rebirth into the human world, the world of gods, or the lower worlds happens as a result of Kusala or Akusala acts. Therefore, rebirth occurs as a product of action which is the result of clinging (Upādāna) and craving (Taṇhā), itself a consequence of the contact between the 6 Āramaṇa and 6 Āyatana.

In other words, as a result of Avijjā and Saṅkhāra, among others, in the former Bhava there are Viññāṇa, Nāma-Rūpa, Āyatana, Phassa, and Vedanā in the present Bhava or life. All this together with Upādāna in the present Bhava is condition to new Kamma or acts. As a result, Kamma leads to rebirth in another Bhava. This can be compared to a wrong-doer who is sent to jail and commits new offenses or to a debtor who creates more debts before paying off the old ones.

The new Kamma that a person accumulates in one Bhava is innumerable. When the time is ripe, any one Kamma may appear as Nimitta (sign) just before his death, resulting in a rebirth in another Bhava. Other Kamma will lead to another rebirth in the next Bhava as long as the person is stuck in the cycle of rebirths. It the Kamma accumulated in the previous

> *Bhava is very strong, that Kamma will bring about the rebirth earlier than that committed in the present Bhava. It will appear as a sign called Kamma-Nimita or Gati-Nimita just before the person dies, resulting in rebirth in a happy or unhappy plane of existence. Therefore, the course of existence in the new Bhava is conditioned by good or bad acts,*

Kamma can be divided into four types that exert influence in different manners:

1. ***Garuga-Kamma*** or weighty *Kamma*
2. ***Āciṇṇa-Kamma*** *or* ***Bahula-Kamma*** or habitual *Kamma*
3. ***Āsanna-Kamma*** *or Kamma* committed on the threshold of death
4. ***Kaṭattā-Kamma*** or casual *Kamma*

Ven. Mahasisayadau (2010) explains the difference between *Saṅkhāra* and *Kamma* in *Kammabhava* (the active process of becoming) as follows:

> *Aṭṭhakathā Scripture provides three different approaches to Saṅkhāra, Kamma and Kammabhava:*
>
> *First, preparations that are made in advance for any act are considered Saṅkhāra, while volition that occurs while doing the act is Kammabhava. Therefore, attempts to obtain money to buy a thing or make a donation are Saṅkhāra, while the volition during the act of doing so is Kammabhava. Activities during the planning to kill a person are Saṅkhāra, while the volition during the killing is Kammabhava.*
>
> *Second, the difference can be discerned on the basis of Vithīcitta or thought process. An act of killing or giving consists of 7 Javanacitta or thought moments. The first six steps are Saṅkhāra, while the seventh Javanacitta is considered Kammabhava.*
>
> *Third, the difference can be based on Cetasika or mental factors. Here, volition is considered Kammabhava, while other Cetasika elements that accompany volition are Saṅkhāra.*

Of the three approaches, the first provides the clearest explanation that is accessible to the general public with limited education, while the third helps explain the Kusala acts committed by form and formless Brahmas (Rūpa-Brahma and Arūpa-Brahma). The three definitions can be used to differentiate good and bad deeds in Kāma-Bhūmi (the sensuous plane of existence).

In addition, Visuddhimagga Scripture mentions the rebirth of Viññāṇa with Saṅkhāra as condition in the following manner: Saṅkhāra that takes on Āramaṇa is Kamma. Kamma-Nimitta or Gati-Nimitta that appears just before a person dies will lead Citta to a new Bhava. In light of this explanation, Kammabhava may refer to volition that drives a person to do good or bad deeds in the past; Saṅkhāra, on the other hand, invites Citta or consciousness at the moment just before death that clings to Kamma, Kamma-Nimitta or Gati-Nimitta as Āramaṇa.

Toward the end of of *Paṭiccasamuppāda*, King Rama IV (2004) gives a very precise explanation:

Jati is Uppatti-Bhava, i.e. a cycle of births and rebirths in Bhava is considered Jati. Jatipaccayā Jarāmaraṃ Sokapari-devadukkhadomanassa Upāyāsa Sambhavanti: When Jati occurs in the cycle of birth and rebirths in Bhava, it gives rise to aging, diseases, sorrow, lamentation, pain, grief, despair, and longing. All the sufferings will follow in the wake of Jati. Jati, on the other hand, depends on Bhava for its existence. Bhava, in turn, depends on Upādāna for its existence, Upādāna on Taṇhā for its existence, Taṇhā on Vedanā for its existence, Vedanā on Phassa for its existence, Phassa on Āyatana for its existence, Āyatana on Nāma-Rūpa for its existence, Nāma-Rūpa on Viññāṇa for its existence, Viññāṇa on Saṅkhāra for its existence, and Saṅkhāra on Avijjā for its existence. Avijjā is the origin of all things.

If Avijjā is extinguished, so is Saṅkhāra. If Saṅkhāra is extinguished, so is Viññāṇa. If Viññāṇa is extinguished, so is Nāma-Rūpa. If Nāma-Rūpa is extinguished, so is Āyatana. If Āyatana is extinguished, so is Phassa. If Phassa is extinguished, so is Vedanā. If Vedanā is extinguished, so is Taṇhā. If Taṇhā is extinguished, so is Upādāna. If Upādāna is extinguished, so is Bhava. If Bhava is extinguished, so is Jāti. If Jāti is extinguished, aging, diseases, and all mishaps including lamentation and pain are also extinguished. This is so because they depend on Avijjā from the start.

He[6] then considers Paṭiccasamuppāda Dhamma in the context of 4 Saṅkhepa (divisions): Avijjā and Saṅkhārain one Saṅkhepa, Viññāṇa and Nāma-Rūpa, Saḷāyatana (the six senses), Phassa, and Vedanā in another Saṅkhepa, Taṇhā, Upādāna, and Bhava in another Saṅkhepa, and Jāti, Jāra (old age), and Marana (death) in another Saṅkhepa. Saṅkhepa means in a brief form and not expanded. In other words, if one wants to present the matter in brief, one simply starts with Saṅkhepa at the beginning, and the Dhamma will run to the end of the course. If one starts with Saṅkhepa at the end, the Dhamma will go right to the beginning. If one starts with Saṅkhepa in the middle, the Dhamma will go all the way to both ends. Vallin Chinditvā Viya: It can be compared to a person trying to cut a creeper. A pull at a part of the plant has a shaking effect all the way. If one considers the Dhamma on the basis of time, Avijjā and Saṅkhāra are the past. They occur first, so they are the past events, leading to the existence of all other things, starting with Viññāṇ a together with other 9 Dhamna ending with Jāti. These are considered to be in the present time, because they always occur in the present, while Marana (death) must be considered a future event. On the other hand, if one considers the Dhamma on the

[6] Meaning the Buddha

basis of Sandhi or connecting links, there are 3 Sandhi: the connection between Saṅkhepa 1 and 2 as one Sandhi, the connection between Saṅkhepa 2 and 3 as another Sandhi, and the connection between Saṅkhepa 3 and 4 as another Sandhi – hence, 3 Sandhi.

If one considers the Dhamma on the basis of Ākāra (modes of cause and effect), there are 20 Ākāra: 5 past causes, 5 present effects, 5 present causes, and 5 future effects. The 5 past causes are Avijjā, Saṅkhāra, Taṇhā, Upādāna, and Bhava of the past Jāti (existence), leading to 5 present effects of Avijjā, Saṅkhāra, Taṇhā, Upādāna, and Bhava of the present Jāti. The 5 present effects, in turn, become the causes of future effects of Avijjā, Saṅkhāra, Taṇhā, Upādāna, and Bhava of the future Jāti.

If one considers the Dhamma in terms of Aṅgara (factors), there are 12 Aṅgara: Avijjā, Saṅkhāra, Viññāṇa, Nāma-Rūpa, Saḷāyatana, Phassa, Vedanā, Taṇhā, Upādāna, Bhava, Jāti, and Jāra-Marana. If one considers the Dhamma in terms of Mūla (root causes), there are two Mūla: Avijjā and Taṇhā. Avijjā and Taṇhāare likened to the hub of the wheel, the three parts of Saṅkhāra to the spokes, Jāra-Marana to the rim, and Āsava (mental intoxication originally being part of Avijjā) to the axle, while the three components of Bhava can be compared to the chariot with the driver turning hither and thither endlessly. Similarly, when all the elements of Paṭiccasamuppāda Dhamma are there, they will continue in the cycle of births and rebirths without end. This will cease only when one is purged of Avijjā or ignorance about the true nature of things and comes to truly understand the four noble truths. One is tired of continuing the cycle of births and rebirth, attains the nine levels of Ñāṇa (true knowledge) to the state of indifference (Upekkhā) to Saṅkhāra, and diligently practices Vipassanā insight meditation in a proper order. This will act to purge all Akusala including Avijjā and enable one to see Nibbāna clearly. Vāto Viya: This is just like a strong wind blowing all

the clouds away from the course of the moon, thus enabling one to see it clearly. Similarly, it is the function of Gotrabhū-Ñaṇa to consider Nibbāna as its object of attainment. Cakkhumā Puriso Viya: It can be compared to an astrologer looking for a time to celebrate a festival based on the appearance of the moon. When Gotrabhū-Ñaṇa Nibbāna as its object of attainment is strong enough, it will attain the knowledge of Sodāpattimagga (Path of Stream Entrance), leaving behind Sakkāyadiṭṭhi (self-delusion) and Vicikicchā (uncertainty), completely ridding the mind of Sīlabbataparāmāsa (adherence to rules and regulations). Sakkāyadiṭṭh is a mistaken belief about self that everything is centered on "me" and "mine". Vicikicchā refers to doubt. Sīlabbataparāmāsa is adherence to mistaken doctrines of divine worships and a mistaken belief that they are all superior to Buddhism. The Buddha was able to abandon these three Akusla acts by virtue of the knowledge of Sodāpattimagga and the practice of Vipassanā. Once He attained the knowledge of Sakidāgāmi-Magga (the Path of Returning Once), He was able to get rid of Kāmarāga (sensual desires) and Byābāda (ill-will). Roughly speaking, Kāmarāga refers to delight in all sensual pleasures and objects, while Byābāda is a strong ill-will, a desire for revenge and retribution. The Buddha left Kāmarāga and Byābāda behind and continued practicing Vipassanāuntil He attained Anāgāmi-Magga (the Path of No Returning) in which He abandoned all the finer sensual desires and completely got rid of all ill-will. He continued practicing Vipassanā until He attained Arahatta-Magga (the Path of Arahantship) in which the remaining Kilesa (impurities) are all gone. At this point He attained Bodhiñāṇa (Enlightenmet) and achieved the same four perfect qualities characteristic of all the Buddha that had come before Him.

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