

## Modern Science and Early Buddhist Ethics: Methodology of Two Disciplines

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### *Introduction*

For students of early Buddhist ethics, it is surprising to find the following statement at the very outset of the article under the entry of “ethics” representing the scope of ethics in the *Encyclopaedia of Religion and Ethics*, the most authoritative encyclopedia in the area of religion and ethics:

Everything may be looked at from two different points of view. We may take it simply as it is, seeking to discover how it came to be the thing it is, and how it is related to other things; or we may compare it with some ideal of what it ought to be... Corresponding to these two aspects of things, which we may call respectively fact and ideal, we have two kinds of sciences — those which concern themselves with the description and explanation of things as they are, and those which concern themselves with our judgments upon them. The former class have sometimes been called ‘natural,’ the latter ‘normative’ or, as is better, ‘critical’ sciences.

Ethics is critical in the sense explained.<sup>2</sup>

Although this statement was made in 1951, it seems generally representative of a conventional perception of ethics that is widely accepted in the arena of Western ethics even today.<sup>3</sup> The underlying view seems that ethics and natural science or physical science are two different sciences or intellectual disciplines.<sup>4</sup> In such a paradigm, ethics is seen as a value judgment that attempts to deal with “normative” or “ought,”<sup>5</sup>

while science is as a value-free research that attempts to deal with "is" or phenomena. Thus, it is held that the fields of research of ethics and science are fundamentally different from each other. The implication seems to be that ethics neither can nor should deal with scientific approaches and that science neither can nor should deal with ethical approaches. The purpose of this paper is (A) to show how early Buddhist ethics differs from the common notion of Western ethics and (B) to emphasize that from a Buddhist point of view, mutual cooperation between ethics and science is needed.

Let us suppose that there is an ethics that is not directly a value judgment and primarily deals with "is." In this ethics, first of all, one does not find concepts of "good / evil" or terms that connote "good / evil." This ethics utilizes the principle of causal conditionality as the basis of its moral system. Also suppose that this ethics, in providing its ethical principles and its moral system, utilizes factual knowledge obtained through such methods as direct observation, experimentation, verification and replication in search of ethical truth or ethical facts. In this paradigm, ethics and science are regarded as similar intellectual disciplines with similar fact-finding methods.

These ideas are not awkward or surprising to those who understand ethics as early Buddhists<sup>6</sup> did. On the contrary, students of early Buddhist ethics, and perhaps early Buddhists themselves, had they known the concept of science, would likely consider this dichotomy between science and ethics as unrealistic and undesirable, as well as inapplicable to Buddhist ethics. For them, science and ethics would hardly be regarded as two different intellectual disciplines.

Similarities of approach and method between early Buddhism and science have been noticed, so much so that Buddhism is presented as empiricist by some scholars.<sup>7</sup> The Buddhist empiricism thesis and its controversy are ongoing.<sup>8</sup> Unfortunately, these arguments and discussions are solely in a philosophical vein. They discuss subjects such as incarnation after life, extra-sensory perception or reidentification of a deceased person. None of these discussions have focused on the psychological and ethical doctrines, the main emphasis of early Buddhism.

Since the mid-nineteenth century, in the field of science, close observation and experimentation have been considered as "the central plank of all scientific work."<sup>9</sup> Rigorous experimental testing of a scientist's hypotheses also began to be emphasized.<sup>10</sup> Today, scientific research is defined as "a mixture... of logical construction and empirical observation, these components standing in a roughly dialectical relation,"<sup>11</sup> and modern science is perceived as "far more a form of enquiry into natural phenomena."<sup>12</sup> Thomas S. Kuhn states that the traditional theorem of the separation of "is" and "ought" in practice is no

longer honored.<sup>13</sup> Now, it is even said that "to call science 'knowledge,' with the implication of certainty, is an idea long past its prime."<sup>14</sup> One may even see the replacement of scientific realism with scientific relativism, questioning the possibility of objectivity in any scientific endeavour.<sup>15</sup> In context of these ideas, it is interesting that early Buddhists utilized similar scientific methods in obtaining knowledge of ethics (dhamma) to solve human problems and formulate their moral system, and yet claimed universality of dhamma beyond their historical context.

This essay will analyze the methods and approaches that Buddhists utilized in presenting dhamma, particularly the dhamma of ethics. This examination may open a new perspective not only on the Buddhist empiricism thesis, but also on a new relationship between ethics and science that may show a potential unity of these two intellectual disciplines. Such an examination will not only directly and indirectly recast the entire Buddhist tradition itself in a broader context, but also raise some fundamental questions about the study of religion in general.

This essay is neither a comparative study of science and Buddhism nor of Western ethics and Buddhist ethics. This paper limits the scope of its examination to some basic similarities observable in the methods that both Buddhism and science adopt in search of truth. Further, whenever the term "Buddhism" is used in this essay, it refers to the Buddhism depicted in the Nikāya texts, which is known as early Buddhism. Although to some the term "early Buddhism" may suggest an ancient form of Buddhism no longer extant, "early Buddhism" is still studied and followed as a living tradition in contemporary Theravāda Buddhist countries. Although the Theravāda Buddhist tradition also embodies the later commentaries, since the present essay focuses exclusively on the Nikāya texts, the term Buddhism as used here specifically refers only to the Buddhism found in the Nikāya texts.

## *1. Early Buddhists' Position Towards Their Texts*

### *1.1. Texts as Human Records*

The Nikāya texts as "religious texts" have several distinctive characteristics. First of all, for the Nikāya authors, language was strictly a tool for communication. The Buddha is said to have discouraged the habit of regarding his words as sacrosanct and forbidden their "Sanskritization" and chanting after the Vedic manner.<sup>16</sup> Secondly, the Nikāya texts are human records: They not only record the words of the Buddha but also those of his disciples and followers. In the *Sacca-vibhaṅga sutta*, for example, the Buddha, after giving a short dhamma

talk, goes away, and then, his disciple, Sariputta, elaborates on what the Buddha said. On many other occasions, when his disciples (including householders or their wives) make a sensible statement, the Buddha applauds and approves by saying, "Well said" or "If I said it, I would have said it in exactly the same way."<sup>17</sup> Thirdly, the Nikāya texts themselves proclaim a qualification on the accuracy of the texts, by using the stock phrase "Thus is heard by me" (*evam me sutam*),<sup>18</sup> instead of "The Buddha said..." at the beginning of each sutta. This is tantamount to an admission by the authors of the texts that these texts are, so to speak, second-hand.<sup>19</sup> They do not claim authority of a sacred text or direct records of the "word of the Buddha" (*buddha-vacanam*). The stock phrase is also employed to distinguish the Buddhist texts from other religious texts. In the Mahāyāna literature, however, the same stock phrase, "*evam me sutam*," is adopted rather to denote that the sutras in the texts are the direct teaching of the Buddha himself.<sup>20</sup> Fourth, since they are secondhand information (teachings), the Nikāya authors deemed it necessary to have criteria for making these texts as accurate as possible so that they could become as close as possible to the firsthand information given by the Buddha himself. Buddhist Councils, which were carried on from time to time during the period of oral tradition, were conducted to seek agreement in justifying the use of the above stock phrase of "Thus is heard by me" (*evam me sutam*). They established a certain set of criteria for the approval and acceptance of a particular teaching as dhamma, qualified to be introduced by "*evam me sutam*." The sutta calls this set of criteria "*mahāpadesa*" ("great authorities" or "true authorities").<sup>21</sup> The compilers of the texts must have regarded such a procedure as necessary to avoid the confusion or misquotation by students of later generations.

The Nikāya texts do not claim to be a revelation. Buddhism differs from the Vedic tradition which gained its authority through belief in divine revelation. The early Buddhists' primary concern regarding their texts was precision, accuracy and clarity of the literary contents. Unlike the later Mahāyāna texts, the Nikāya texts possess substantial coherency and unity on doctrinal issues with prosaic and simple forms of expression. The notion of *nibbāna*, for example, the ultimate goal of the teachings of the Buddha, as it appears in the Nikāya texts, is not metaphysical, mystical or symbolic.<sup>22</sup> These aspects are also closely related to the issue of interpretation of the texts.

## 1.2. Freedom of Interpretation

The Nikāya texts themselves did incorporate some minimal guidelines for disputation over the doctrine with regard to textual interpretation of meanings and words. The *Kinti sutta*,<sup>23</sup> for example, presents



a very basic criterion of interpretation: dhamma is for the purpose of ending suffering. Dhamma is not practiced in expectation of future happy existence or for the sake of material gain. Another sutta gives basic misconceptions (*vipallāsas*) which should be avoided: (1) To hold that there is permanence when there is impermanence; (2) to hold that there is happiness when there is suffering; (3) to hold that there is substantiality where there is no substantiality; and (4) to hold that there is pleasantness in that which is foul.<sup>24</sup> All of these are so basic and essential, and, consequently, so definitive and clear-cut that they seem targeted against gross misreadings rather than guidelines for interpretation. The implication seems to be that Buddhists have almost no interest in engaging in textual exegesis and interpretation. The purpose of setting these criteria is to eliminate erroneous reading of the text and/or to guide the reader to a correct comprehension of the texts, instead of formulating sophisticated strategies of interpretations. One may even say that early Buddhists allow freedom of interpretations, except for fundamental misunderstandings and misreadings. This aspect is noteworthy in the context of a strong interest in hermeneutical issues of the later Mahāyāna literature and also of the current academic interest of modern Western hermeneutics.

Early Buddhists' lack of attention to interpretation is clear when we compare it with the later Mahāyānists' enthusiasm toward interpretation. As Peter Gregory states, for Chinese Buddhists, interpreting the various teachings became "more urgent and, at the same time, more complex as Buddhism developed doctrinally and spread geographically."<sup>25</sup> The situation that necessitated complicated hermeneutical strategies arose from various conditions:

The hermeneutical problem as it presented itself to Chinese Buddhism was how the bewildering welter of teachings to which they were heir could be reconciled with one another into a single, coherent, internally consistent, doctrinal whole. The problem was at once more pressing and more complicated for the Chinese than for their Indian brethren. The different sects that arose in India were all an organic part of the evolving cultural matrix out of which Buddhism developed. Even though they often disputed with one another, they could all claim some form of linkage to the historical Buddha. The cultural and historical continuity made it unnecessary for them to account for the teachings of the other sects in a systematic fashion. In China, however, Buddhism was very much an alien religion that violated many of the most central values of Chinese culture. It therefore continually had to justify its presence within

Chinese society. Furthermore, since the scriptures contained in the diverse collection introduced into China were all believed to have been spoken by the Buddha, and were thus all sacred as the Buddha's word (Buddhavacana), Chinese Buddhists felt compelled to devise a systematic framework to account for the tradition as a whole.<sup>26</sup>

Apparently, the later Mahayana literature presented different problems of interpretation from those of the early Buddhist literature. However, these historical, cultural, geographical and textual reasons for the early Buddhists' lack of interest in interpretation seem subordinate to a more basic cause, the early Buddhists' scientific methods and approaches to dhamma. We will come back to this issue later.

### 1.3. Freedom from Interpretation

Early Buddhists regarded interpretation as nothing but a distortion of information, albeit mostly unconscious.<sup>27</sup> According to them, due to the interpretive mechanism of ordinary human consciousness, so-called understanding is problematic by its very nature. The Nikāya identifies the cause of interpretation or distortion of information not as external factors, such as historical/social forces, but one's own mental activity called *sankhāra*. *Sankhāra* is the function of mind that accumulates, edits, and interprets incoming information. The goal which the Nikāya texts invoke is defined as seeing "the phenomenon as it comes to be" or seeing "the phenomenon as it is" (*yathābhūta*), seeing the phenomenon without interpretation. *Yathābhūta ñāna* (the knowledge of *yathābhūta*) is the highest mode of knowledge of phenomena, being completely freed from interpretation. Early Buddhists have a suspicion of interpretation and aspire to be free of it in order to see reality as it comes to be or as it is. For them, interpretation is a problem not only in the realm of intellectual discipline, but in the existential and soteriological sphere.

### 1.4. Rejection of Belief, Pure Logic, Reason, Texts, Authority, Tradition, Respect, etc.

Buddhism does not consider itself a belief-system. It exhorts one to be suspicious not only of belief,<sup>28</sup> but also of reason, tradition, reports, texts, or scriptural authority. The *Kesamutti sutta*, known also as *Kalāma sutta*, clearly articulates this position. The Buddha is reputed to have answered as follows, being asked about the criterion for evaluating a certain theory, by the people of Kalāma, who were said to be highly intellectual:

Be ye not misled by reports or traditions or hearsay. Be not misled by proficiency in collections [on the authority of the scriptures], nor by mere logic or inference, nor after considering reasons, nor after reflection on and approval of some theory, nor because it fits becoming [seeming possibilities], nor out of respect for a recluse (who holds the idea). But, Kālamas, *when you know for yourselves* that certain things are unprofitable, unwholesome, blameworthy, censured by the wise; these things, *when performed and undertaken*, conduce to loss and sorrow, then reject them: *when you know for yourselves* that certain things are profitable, wholesome, blameless, praised by the wise; these things, *when performed and undertaken*, conduce to profit and happiness, then abide therein [Italics mine].<sup>29</sup>

The passage describes the four steps in evaluating and accepting a certain theory: (1) Evaluate a theory not relying on words, language, tradition, belief, custom, reasons, logic, interpretation, authority, or any other external sources; (2) Evaluate the theory based on whether or not it is profitable, wholesome, blameless, praised by the wise; (3) Evaluate the theory based on whether it conduces to benefit and happiness or loss and sorrow; (4) Accept the theory that conduces to benefit and happiness, and reject the theory that conduces to loss and sorrow.

The repeated use of such expressions as "when you know for yourselves" and "when performed and undertaken" indicate Buddhists' strong reliance on an empirical approach by and for oneself. Although to get a better understanding, one may refer to others who are more learned in obtaining information about the theory, one should always personally experiment by experiencing it to determine whether one should accept it or reject it. The sutta also advocates that when the theory is verified to be beneficial and profitable by a wise person, the test should still be done by and for oneself. Here, sharing information and sharing experience are distinguished. The reliable verification, according to them, comes from one's own participation in examination and experiment. And the final test is whether the theory conduces to sorrow or to happiness. A thorough empiricism<sup>30</sup> is prescribed.

This position is also specifically observed in the early Buddhist attitude towards reason. K. N. Jayatilleke categorizes the early Buddhists' four possibilities of the relationship between actual facts and human reason: (1) well-reasoned true (*sutakkitaṃ tathā*), (2) well-reasoned false (*sutakkitaṃ aññathā*), (3) ill-reasoned true (*duttakkitaṃ tathā*) and (4) ill-reasoned false (*duttakkitaṃ aññathā*).<sup>31</sup> Even when reason is valid, in the phenomenal world or in reality it could be true or false. They saw reason merely as a source of knowledge that is not always reliable. It is also possible that an ill-reasoned theory may be true

in the light of contingent facts. For Buddhists, what counts is not the validity of logic, reasoning, or interpretation, but the factuality. Jayatilleke claims that for Buddhists, a theory, information, or statement in which no verification or no experimental content is attached by the speaker is in fact meaningless.<sup>32</sup> In early Buddhist understanding, truth or falsity of a theory in relation to phenomenon cannot be judged by reasoning or logic, but by personal empirical verification.

It is noteworthy, as we will see later, that early Buddhists applied the method of individual empirical verification not only generally to any theory, but – more importantly – to dhamma. They enjoined thorough inspection, examination and verification of dhamma.

## *2. Early Buddhist Position Towards Phenomena*

### 2.1. Buddhism is a Discovery

According to a Nikāya text, the Buddha discovered dhamma.<sup>33</sup> The textual expression is that dhamma had been discovered, just as an ancient city, hidden in a deep forest unknown to anyone, but always being there, has been discovered.<sup>34</sup> The text also states that dhamma would operate whether the Buddha ever discovered it or not.<sup>35</sup> Usually, these textual references are understood symbolically. For example, scholars paraphrase them as follows: “The Buddhist Dharma is not dependent on the historical event of Śākyamuni [Buddha]’s enlightenment, ministry, or nirvāṇa.”<sup>36</sup> Or “It is not the historicity of Gotama which supports Buddhism, unlike the situation with Christianity,”<sup>37</sup> where “if it could be shown that the Biblical Jesus did not exist Christianity would be undermined.”<sup>38</sup> None of them, however, seems to capture the fundamental point of the textual statement: dhamma is a discovery.

Setting aside the doctrinal discussion of the content of the Buddha’s discovery, one point to be mentioned first is that for Buddhists a primary concern is the content of the theory (dhamma) rather than the person who discovered it, as Gomez and Hoffman point out. For Buddhists, the role that the founder plays is less central than in other religious traditions. Nathan Katz says that unlike in Jainism, and, perhaps, unlike in any other religious tradition, in Buddhism, there is no restriction of a particular epithet only for the Buddha: There is a significant identity of the Buddha and the *arahant* in the earliest Nikāya texts, except the distinction that the Buddha is the founder and the *arahant* is the follower.<sup>39</sup> Thus, the same kind of epithets are applied to both the Buddha and an *arahant*. Hajime Nakamura also says that in the earliest extant Buddhist texts, we cannot find the term that desig-

nates "disciples" (*antevasin*). Whether as a concept or as an expression, "the Buddha's disciple" does not exist in early Buddhism.<sup>40</sup> This is also an indication that early Buddhists emphasize more the discovered theory itself (dhamma) rather than its discoverer (the Buddha). The Buddha's essential role was, from the vast amount of information of the discovered theory (dhamma), to choose the necessary knowledge for solution of the human problem and to introduce it to others in a plain manner. In this regard, the Buddha may be an interpreter of dhamma, as Robert Thurman points out,<sup>41</sup> not in the sense of "interpreting" dhamma, but in the sense of presenting buddha-dhamma, not the whole dhamma.

Secondly, early Buddhists enjoin a certain detachment and objectivity also in approaching dhamma. According to the *Alagaddūgama sutta*, the Buddha advised not to hang onto dhamma: dhamma is to be taken only for its instrumental value, but not to be taken as a goal. In the sutta, it is analogously explained as: A raft is necessary only for crossing the river, after the crossing, no one carries it on the ground.<sup>42</sup> The sutta also tells that dhamma should be taken carefully, just like a snake should be handled carefully. Dhamma could be harmful if wrongly taken, like a snake-catcher could be killed if he grasps a snake by the tail.<sup>43</sup> Along with statement of the aforementioned *Kālāma sutta*, these accounts demonstrate early Buddhists' basic attitude to dhamma and the Buddha: They discard both a historical belief in the Buddha and a blind belief in dhamma.

## 2.2. Non-Speculation and Non-Metaphysics

As Mitsuyoshi Saigusa states, Buddhism has two characteristics in its approach towards phenomena: (1) Non-metaphysical engagement and (2) direct and invariable observation (*chokushi* and *gyōshi*).<sup>44</sup> Indeed, early Buddhists turned away from speculative and metaphysical questions. Buddhism regarded them as unverifiable, useless, and unbene-ficial. According to the early Buddhist texts, the Buddha declined to answer ten metaphysical questions that interested the contemporary Indian philosophers. These ten are categorized into four groups:<sup>45</sup> (A) regarding duration of the universe: (1) if the world is eternal and (2) if the world is not eternal; (B) regarding extent of the universe: (3) if the world is finite and (4) if the world is infinite; (C) regarding nature of the soul (*jīva*): (5) if the soul is identical with the body and (6) if the soul is different from the body; (D) regarding the destiny of the *tathāgata* (an enlightened person): (7) if the *tathāgata* exists after death, (8) if the *tathāgata* does not exist after death, (9) if the *tathāgata* does and does not exist after death, and (10) if the *tathāgata* neither exists nor does not exist after death.<sup>46</sup>

Whatever answers might be given to these questions, they are not empirically verifiable by either observation or experimentation. David Kalupahana says that silence to these questions by the Buddha indicates his awareness of the limitation of empiricism.<sup>47</sup> If so, it also indicates that the Buddha and early Buddhists strictly abstained from discussing issues that go beyond the limit of empiricism.<sup>48</sup> For the Buddha and early Buddhists, theory, information, interpretation, knowledge, or view is not valid, unless it is empirically verifiable.<sup>49</sup> Speculation about questions which are not empirically experimentable or verifiable is discouraged as not conducive to release from the human problem, suffering.

### 2.3. Dhamma: Description of Phenomena

A Buddhist premise that dhamma operates regardless of its discovery immediately implies another distinctive aspect of dhamma: dhamma is descriptive. None of the major early Buddhist doctrines, such as the theory of *paṭiccasamuppāda*, the four noble truths, non-substantiality (*anatta*), and impermanence (*anicca*), bear either negative or positive connotations. They are flat descriptions of phenomena, free from evaluation, as science is essentially descriptive formulation.<sup>50</sup>

The descriptive nature of Buddhism is demonstrated even in the presentation of the ethical teachings. The process by which a person gradually begins to learn to abstain from unethical behavior is described by the Buddha as follows:

In this matter, housefathers, the Ariyan disciple thus reflects: Here am I, fond of my life, not wanting to die, fond of pleasure (*sukha*) and averse from pain (*dukkha*). Suppose someone should rob me of my life (fond of life as I am and not wanting to die, fond of pleasure and averse from pain), it would not be a thing pleasing or delightful to me. If I, in my turn, should rob of his/her life one fond of his/her life, not wanting to die, one fond of pleasure and averse from pain, it would not be a thing pleasing or delightful to him/her. For a state that is not pleasant or delightful to me must be so to him/her also: and a state that is not pleasing or delightful to me, — how could I inflict that upon him/her?

As a result of such reflection, he/she him/herself abstains from taking the life of creatures and one encourages others so to abstain, and speaks in praise of so abstaining.<sup>51</sup>

It is interesting that in the above explanation that stipulates the "ethical" teaching, no direct term that indicates "ought" or "should" is used.



The reasoning of ethical teachings is deduced from one's direct observation of the reality of one's own and other's human nature and awareness of the causal relationship between self-love (*taṇhā*) and pleasure (*sukha*) / pain (*dukkha*). Thus, the basic formula of the ethical guidelines is given by using the expression of "I take upon myself the rule of training to abstain from...." The direct observation and recognition can be compared to a "diagnostic" observation of the physician of his/her patient after a thorough examination. This diagnostic direct observation turns into a prescription which is simply a part of the description.

In early Buddhism, a moral system is based upon the principle of the causal relationship between action and reaction, called the principle of *paṭiccasamuppāda* (dependent co-arising or causal conditionality). The principle of *paṭiccasamuppāda* has been regarded not only as the central theory of early Buddhism,<sup>52</sup> but also as a core teaching of all Buddhist traditions throughout Buddhist history.<sup>53</sup> The fundamental principle that supports the Buddhist moral system can be formulated as follows:

- When *taṇhā* (self-centeredness) is present, *dukkha* (suffering) is present;
- From the arising of *taṇhā* (self-centeredness), *dukkha* (suffering) arises;
- When *taṇhā* (self-centeredness) is absent, *dukkha* (suffering) is absent;
- On the cessation of *taṇhā* (self-centeredness), *dukkha* (suffering) ceases.<sup>54</sup>

The formula itself is a description of phenomena, and there is no value component. Since terms such as "*dukkha*" or "*taṇhā*" have been casually translated into English language such as "suffering" or "self-centeredness" for which no technical definition is provided, one may wonder if "suffering" or "self-centeredness" is evaluative. Unlike the English terms "suffering" or "self-centeredness," "*dukkha*" and "*taṇhā*" are loaded with meanings that signify specific psychological or mental states, for which the Buddha and early Buddhists provided highly technical definitions throughout the Nikaya texts.<sup>55</sup> In these original terms themselves, no evaluative connotation is rendered.

As I mentioned at the beginning, ethics which deals with the normative or "ought" is considered to be a different discipline from that of science which does not deal with the value. Western ethics separates ethics from scientific knowledge. Dhamma, in contrast, of which ethics is a part, is a non-normative description of phenomena that states simply that "when A is present, B comes to be" or "when A is absent, B does

not come to be." Describing the reality of living beings, dhamma states that each living being is most strongly attached to itself<sup>56</sup> and that all beings fear pain and harm and seek comfort and fearlessness.<sup>57</sup> Dhamma also states that self-love (*taṇhā*) and suffering (*dukkha*) arise together and ceases together. In this way, dhamma is an explanation of causal conditionality of phenomena, mental and physical (*paṭicca-samuppāda*).

In dhamma, the Buddha set forth only that which is crucial to discomfort and comfort in life.<sup>58</sup> It is in his selection of dhamma, perhaps, that his value-judgments are embedded. His manner of presentation of dhamma, however, is, as we have argued, descriptive, or may be prescriptive as is the case for a physician. The role of the Buddha may be compared to the role of the Surgeon General in our society: From the entire collection of medical information obtained through scientific research, the Surgeon General, who is a physician him/herself, selects only relevant and necessary information and provides it to the public in order to prevent and cure illness and to promote health. Like the Surgeon General who is an advocate for health matters, the Buddha is an advocate for health matters, health in the existential realm. Though the Surgeon General, unlike the Buddha, has not directly discovered all the findings he/she reports, he/she selects only verified information to present to the public. Both the Buddha and the Surgeon General provide information that is factual. The Surgeon General states, for example, "smoking by pregnant women may result in fetal injury, premature birth, and low birth weight." Neither the Buddha nor the Surgeon General state "should" or "should not." It is a person him/herself who embeds a "value component" in the factual statement of "is," when he/she him/herself finds value in it and takes it as an "advice."

Gunapala Dharmasiri finds an evaluative element in Buddhist ethics. He divides a Buddhist ethical proposition into two parts, a "factual component" and a "value component,"<sup>59</sup> while saying that the factual component is extremely important. He says that the value component should be based on the factual component,<sup>60</sup> but it is unclear to me which part of the Nikāya texts Dharmasiri directly refers to for the derivation of the term "value component," for he does not specify. The only place he refers to is a passage from the *Dhammapada*.<sup>61</sup> The *Dhammapada* is a collection of very short verses on the basics of dhamma. Since its tone is proverbial rather than explanatory, it is difficult to seek therein for a substantial argument of this kind. But, even when an imperative expression is used, the reasoning is provided.<sup>62</sup> If the rhetorically value-embedded expressions are to be found in the suttas, they are backed up with a solid factual component. If there is an implication of value in the ethical principle, this value is deduced by the agent him/herself.

The goal of Buddhist ethics is to become a *"sīlavā,"*<sup>63</sup> a person in whom morality (*sīla*) is perfectly established as a spontaneous expression of personality and whose behavior is therefore naturally virtuous and ethical. In him/her, even a concept of "goodness" has disappeared. Such a person naturally abstains from taking any harmful action both with respect to oneself and others without a sense of either externally or internally imposed "ought." In this way, in the ethics of Buddhism, one can say that there is no "ought" component.

Regarding the descriptive nature of Buddhism, Frank J. Hoffman presented a different view: Buddhism is descriptive-cum-evaluative. His argument for this, however, relies upon his own formulation of the proposition "all is *dukkha*,"<sup>64</sup> which is not the Buddhists'. Based on this proposition, he further goes on to a discussion of Buddhism and pessimism.<sup>65</sup> His argument can be challenged from several angles. First of all, it is important to note that neither the first noble truth (*dukkha-ariya-sacca*) nor any other proposition in the Nikāya texts ever states that "all is *dukkha*." The first noble truth says that "the five aggregates of attachment are suffering," (*samkhittena pañca-upādāna-kkhandhā dukkha*),<sup>66</sup> but does not say "the five aggregates are suffering." "The five aggregates" (*pañca-kkhandhā*) and "the five aggregates of attachment" (*pañca-upādāna-kkhandhā*) are not the same thing.

It is important to point out that the notion of "the five aggregates" bears no evaluative connotation, whether positive or negative. It is solely descriptive. In Buddhism the five aggregates (*pañca-kkhandhā*) are regarded as the constituents of the existence of all living beings. Therefore, a casual reading may make one assume that Buddhism signifies that "existence itself is suffering." Hoffman states that "[s]ince on the early Buddhist view the five aggregates and the corresponding faculties are all *dukkha*,"<sup>67</sup> "all the compound things are *dukkha* because impermanent."<sup>68</sup> Hoffman's idea seems to derive from the mixing up of two different things, "the five aggregates" (*pañca-kkhandhā*) and "the five aggregates of attachment" (*pañca-upādāna-kkhandhā*).<sup>69</sup> The message of the first noble truth is: "*dukkha* arises when *upādāna* (attachment) to the five aggregates (*pañca-kkhandhā*) arises," but not "the five aggregates (*pañca-kkhandhā*) themselves are *dukkha*."

Following these arguments, Hoffman discusses the early Buddhist notion of "*yathābhūta*." According to him, because of the "Buddhist" evaluative proposition, "*yathābhūta*" thereby means "seeing the reality in the Buddhist's manner" that "all is *dukkha*," but not "seeing the reality as it is." Then, he states as follows:

Seeing the early Buddhist way is regarded as seeing *yathā bhūtaṃ*, 'as it really is', and not in some provisional way.... To see the world

with Buddhist eyes as a suffering world replete with ignorance and craving is at once to see the world as a theatre of conflict in which right view may win out over wrong view in case one manages to attain liberation. To see the world *yathā bhūtaṃ* is thus not to see what a video-camera would record, but is in part to see in a hopeful manner the possibility of liberation.<sup>70</sup>

His notion of "*yathābhūta*" expressed in the above passage may also be questioned.

The knowledge of "*yathābhūta*" is one of the most important notions of early Buddhism. It represents the highest level of knowing reality. As I have discussed elsewhere, according to the *Madhupiṇḍika sutta*,<sup>71</sup> there is a major problem in ordinary human perceptions which leads to conflicts: When one receives new information, it is processed (*papañca*) and edited (*saṅkhata*) in one's mind in relation to previously stored information. As a result of this processing, there arises a flow of new thoughts and ideas. Influenced and dominated by these edited and processed ideas, one begins to react to the situation verbally, physically and mentally. Due to the problematic nature of cognitive and volitional activities of ordinary human consciousness, the object or information originally perceived through the senses is now distorted or contaminated by *papañca*. To obtain information accurately and to be able to respond to it correctly, one needs to focus on both the external conditions and the internal (mental) process that transform the incoming information. The individual's capacity to correctly receive information both internally and externally is called "knowledge and vision of things as they come to be (*yathābhūta ñāna dassana*)."<sup>72</sup> "*Yathābhūta*" means, therefore, not only perceiving external objects, but also directly seeing (*pajāñāna*) one's internal mental process related to the external object. According to early Buddhists, whatever one perceives becomes part of one's conditioning; recognizing this fact itself is very crucial. "*Yathābhūta ñāna dassana*," therefore, technically speaking, is knowing and seeing "reality as it comes to be," rather than "as it is," while a video-camera, perhaps, only sees "reality as it is." Hoffman's understanding of "*yathābhūta*" is one-sided and therefore his allegation against "*yathābhūta*" is incomplete.

The descriptive nature and non-coerciveness of dhamma are tied together. Buddhism neither imposes its propositions on others nor does it judge others who oppose its propositions. The teaching method of early Buddhism is gradual instruction (*anupubbi-katha*).<sup>73</sup> Depending on a person's particular level of understanding, a particular instruction is given. Such a teaching method accommodates a person's existing level of understanding of dhamma and proceeds further to higher and higher

levels of understanding. Each level of instruction is provisional. Thus, the Buddha's way of presenting dhamma to listeners or students is not coercive. This is also what the aforementioned *Kalama sutta* and the parable of a raft in the *Alagaddūgama sutta* postulate. Buddhism would not advocate cursing or condemning those who find no truth in dhamma. If a person does not find any truth in a Buddhist proposition, early Buddhists would regard that person as needing to experience more of life with greater acuity. Early Buddhists were aware that to come to a conclusion such as "This alone is the truth, all else is falsehood" is a grave mistake.<sup>73</sup>

The descriptive nature of dhamma prompted early Buddhists to examine it objectively and critically through testing, observation, and verification. In what follows, I will further focus on the early Buddhists' position towards dhamma.

### 3. *The Early Buddhist Position Towards its Theory (i.e., Dhamma)*

The term "dhamma," which represents the "central concept of the Buddhist system,"<sup>74</sup> has many dimensions of meanings and scholars have made remarkable attempts to define it.<sup>75</sup> As John Carter says, an attempt to determine the meanings of dhamma in every occurrence in the canonical texts "would be an exhausting enterprise and universal agreement on conclusions proffered would be, perhaps, impossible."<sup>76</sup> There is no single English word that is equivalent to the term "dhamma" in the doctrinal and religious dimension of the various Buddhist traditions.<sup>77</sup> When it is rendered with "religious" connotations, it can mean "universal principle," "salvific truth," "cosmic law," "nature," or "reality." The question is, if early Buddhists utilized scientific approaches and methods in dealing with human problems, what kind of position did they take towards their claims for the truth of dhamma? Hoffman discusses this issue from the viewpoint of the unfalsifiability of a religious doctrine. According to him, in science, all propositions are falsifiable in principle, but "one characteristic of distinctively religious beliefs is their unfalsifiability in principle."<sup>78</sup> In other words, scientific propositions and hypotheses are testable (falsifiable) and religious doctrine and theories are untestable (unfalsifiable). Hoffman's position is that since early Buddhism is a religion, Buddhist dhamma is never falsified.<sup>79</sup> In the following discussion, I will analytically investigate the early Buddhists' approach to dhamma in examining Hoffman's argument.

### 3.1. Early Buddhist Position towards the Theory (i.e., Dhamma) as Explanation of Universal Law (*Dhammata*)

One of the suttas in the Nikaya postulates dhamma as the object that the Buddha, the Fully Enlightened One (*sammāsambuddha*),<sup>80</sup> honored and respected as the "universal law" (*dhammata*),<sup>81</sup> which was his guide or master during the rest of his life after his enlightenment. The *Suttanipāṭa*, one of the oldest texts, also states that dhamma's truthfulness is verified by the disciples of the Buddha and the realization of dhamma was actually enjoyed by them.<sup>82</sup> In the Nikaya, dhamma is also understood as the theory of *paṭiccasamuppāda*: "Whoever sees *paṭiccasamuppāda* sees dhamma, and whoever sees dhamma sees *paṭiccasamuppāda*."<sup>83</sup> Dhamma, the theory of *paṭiccasamuppāda*, is depicted as the universal law already established (discovered) by the Tathāgata.<sup>84</sup> These suttas apparently claim truthfulness, correctness and validity of dhamma.

The question is: How do early Buddhists claim validity and correctness for dhamma? According to a Majjhima Nikaya, the Buddha himself, after his enlightenment, stated that he, too, before enlightenment, while he was still a *bodhisatta*, like others, tested and experimented with other hypotheses, all of which proved unsatisfactory.<sup>85</sup> Siddhattha Gotama had many teachers who claimed that they had the final truth. But he discovered after testing that they were only highly developed hypotheses, but still incomplete.<sup>86</sup> The ascetic Gotama spent six years experimenting with different hypotheses. After testing and experimenting with other theories which were found to be fruitless, he finally developed a new method and arrived at final understanding.<sup>87</sup> Only then did he conclude it to be the final answer.<sup>88</sup> After this event, the ascetic Gotama claimed that he attained enlightenment. This process is described in the *Dhammacakkappavattana sutta*, regarded as the first discourse of the Buddha. The passage below illustrates the stage of the "before-enlightenment":

As long, O Bhikkhus, as the absolute true intuitive knowledge regarding these Four Noble Truths under their three aspects and twelve modes was *not perfectly clear to me, so long I did not acknowledge* in this world inclusive of gods, Māras and Brahmās and amongst the host of ascetics and priests, gods and humans, that I had gained the incomparable supreme enlightenment (*anuttaram samma-sambodhim*) [*Italics mine*].<sup>89</sup>

The following passage describes the "after-enlightenment" stage:



When, O Bhikkhus, the absolute true intuitive knowledge regarding these Four Noble Truths under their three aspects and twelve modes *became perfectly clear to me, then only did I acknowledge* in this world inclusive of gods, Maras, Brahmas, amongst the hosts of ascetics and priests, gods and humans, that I had gained the incomparable supreme enlightenment.<sup>90</sup>

The comparison of these two stages demonstrates the shift from the "before" to the "after" of enlightenment." It should be mentioned that the ascetic Gotama never thought that he had gained "the incomparable supreme enlightenment" before his final realization of the completeness of the knowledge. Only when he perfected his knowledge, did he proclaim himself the supremely awakened Buddha. The Buddha's discovery of dhamma means, therefore, that his quest and research were finally completed. Dhamma is, in this sense, the discovery that finally proved to be correct after the experiments and re-experiments with many possible hypotheses and theories. The Buddha's enlightenment means nothing but his conclusive realization.

Hoffman says that a religious doctrine is based upon religious belief and religious unfalsifiability in principle.<sup>91</sup> If so, in Christianity, for example, Christians would probably make propositions as follows regarding God: God is omnipotent, or, Jesus is God's only Son. It seems, in this manner, perhaps, that Karl Barth states in *Church Dogmatics*: "God loves because He loves; because this act is His being, His essence and His nature."<sup>92</sup> These religious propositions are unfalsifiable.

The Buddhist claim of dhamma's validity, however, seems different from Hoffman's view of religious doctrines in general. The Nikaya texts recount this event as follows: "I have completed the student life. Done is what was to be done, there is nothing left to do."<sup>93</sup> Early Buddhists' claim of correctness of dhamma depends on the completion of a research process. Their claim does not rely on the Buddha's authority or superiority. It is vice versa: The ascetic Gotama claimed supreme buddhahood for himself *after* his accomplishment of the research. And, further, if it is the research that led him to the conclusion, the process of the same research should be replicable by others. Indeed, according to the texts, many replicated the same research and arrived at the same conclusion, i.e., they attained Nibbana.<sup>94</sup> Therefore, Hoffman's idea of religious unfalsifiability in principle is not directly applicable to the early Buddhist claim of validity of dhamma.

### 3.2. Early Buddhist Position Towards the Theory (i.e., Dhamma) as Falsifiable, Which Is to Be Experimented with and Verified Individually Before It Is Accepted.

In the Nikāya, one also finds early Buddhists who state that any claim of fact or truth should be scrutinized by thorough tests and examination. The aforementioned *Kāḷama sutta* is one example of that attitude. In the *Cankī sutta*, too, the Buddha teaches a young brahmin, Kapatika, not to blindly believe in tradition simply because it had been handed down from generation to generation unbroken. Such a tradition which claims to embody the so called "only truth" is likened by the Buddha to a "line of blind people" each one clinging on to the preceding one.<sup>85</sup> More interestingly, the *Vimamsaka sutta* declares that the Buddha and his buddhahood may be put to acid tests. In this sutta, a detailed procedure to scrutinize such claims is laid down.<sup>86</sup> The existence of these suttas in the Nikāya texts itself demonstrates that the Buddha and early Buddhists established the fact that any theory, including dhamma, should be taken as falsifiable in principle, before one has tested it for oneself.

Interestingly, a careful study of the Nikāya texts will also tell us that dhamma is definitively presented as falsifiable by the Buddha and early Buddhists. The definition of dhamma by the following six characteristics consistently appears throughout the Nikāya texts. These six characteristics are:

- 1) well-taught or well spoken by the Buddha (*svākkhato*)
- 2) can be seen in this life itself (*sandiṭṭhiko*)
- 3) timeless (*akāliko*)
- 4) inviting investigation (or falsifiable) (*ehi-passiko*)
- 5) leading onward (*opanayiko*)
- 6) to be verified by the wise by and for him/her-self (*paccattam veditabbo viññuhi'ti*)<sup>87</sup>

Four out of six of the above characteristics illustrate distinctive aspects of the early Buddhists' attitude towards their own alleged claim of truth. For example, according to the fourth characteristic, dhamma invites inspection and examination. The term "*ehi-passiko*" definitively characterizes dhamma's falsifiability. One should not accept dhamma blindly. Dhamma invites one to come and test it for oneself by means of direct personal knowledge. This also implies that it is always open for anyone to come and test it. It is transparent.

According to the sixth characteristic, an inspection of dhamma is to be done individually, by and for oneself. Even when inspection is

done and the truth is verified by others (even by the Buddha), one still should not readily accept it, because it is not one's direct knowledge. Dhamma should be tested and inspected by oneself, for oneself. For verification of dhamma or facts, an individual cannot depend on anyone else. Final verification is ultimately by means of personal and direct experience.<sup>98</sup>

The second characteristic, "*sanditthiko*," claims that dhamma can be seen in this life, which indicates that it deals with reality here and now. Early Buddhism has sometimes in the past and present been labelled as an amoral, asocial, transcendental, contemplative, or other-world oriented teaching; that such a notion is a distortion is demonstrated by reference to this characteristic of dhamma. Here it should be noted that realization of dhamma includes the realization of Nibbāna and it is to be experienced in this life.<sup>99</sup>

The fifth, "*opanayiko*" (leading onward) signifies that the more one inspects dhamma, the more one accepts it, and the more one is moved towards the final verification of dhamma. Inspection, verification and acceptance occur in a gradual, step-by-step process. It is noteworthy that this fifth characteristic is consistent with the Nikaya's "teaching method" of a gradual instruction (*anupubbi-kathā*), which I mentioned earlier. On the other hand, the Nikaya texts call their "learning methods" "*anupubba-sikkhā*" (gradual training), "*anupubba-kiriya*" (gradual doing) and "*anupubba-paṭipadā*" (gradual course).<sup>100</sup> It is interesting that along with these critical characteristics of dhamma, it is characterized as "*akāliko*" (timeless). "*Akāliko*" signifies that dhamma is always timely, relevant to a person and society at all times, verifiable in the past, present, and future. In other words, examination and verification of dhamma is replicable by any individual regardless of his/her historical, cultural, religious and other backgrounds.

The early Buddhists' approach to dhamma seems distinctively empirical. It invites all comers to verify and test it for themselves as they seek their own religious truth.<sup>101</sup>

### 3.3. Early Buddhist Double Positions

In this way, the early Buddhists' attitude towards dhamma is twofold: On the one hand, they proclaimed dhamma to be a universal law of nature (*dhammatā*), and, on the other hand, they discouraged unquestioning belief in it and presented it as falsifiable. These two positions appear to oppose each other, but are not necessarily contradictory. My perception is that early Buddhists intentionally adopted these two different approaches, so that the empirical approach to dhamma could be thoroughly maintained. This approach may be likened to the basic po-

sition of "general and healthy scepticism" in science.<sup>102</sup> In modern science, rigorous experimental testing, not to confirm theories but to refute them, is essential.<sup>103</sup> This position may be closer to the early Buddhists' position: early Buddhists proclaimed dhamma as a fact verified by the supremely awakened Buddha (*sammāsambuddha*), and yet, conversely, invited others to treat it as falsifiable, by personally and individually experimenting with it. As in science, the difference between the Buddha or the first scientist who presented the theory and the followers is that the followers' experiment is much easier and faster, because the first one had already developed all the necessary tools for them.

#### 4. The Theory (i.e., Dhamma)

In the following, I will discuss the method that the Buddha adopted in arriving at dhamma as the final theory of truth, by focusing on the principle of *paṭīccasamuppāda*.<sup>104</sup> It is extremely important to note that the theory of *paṭīccasamuppāda* is neither a baseless theory and hypothesis nor the result of revelatory intuition and contemplation, but was obtained through observation of phenomena that have happened (*paṭicca-samuppanna dhamma*).<sup>105</sup> The theory of *paṭīccasamuppāda* is, technically, formulated based upon "dependently co-arisen" phenomena. Kalupahana explains as follows:

The Buddha's explanation of the nature of existence is summarized in one word, *paṭīccasamuppāda* (Skt. *pratītyasamutpada*), meaning "dependent arising," a theory that he formulated on the basis of the experience of dependently arisen phenomena (*paṭicca-samuppanna dhamma*). The meaning of the former is best elucidated by clarifying the implications of the latter...

The theory of *paṭīccasamuppāda*, which "has remained valid so far,"<sup>106</sup> is the theory with reference to the past. In the term "*paṭicca-samuppanna dhamma*," therefore, the past participle tense is used.

According to the Nikaya texts, an enlightened person thoroughly clarifies and completes two forms of knowledge: "retrospective knowledge" (*anvaye ñāṇam*) and "knowledge of dhamma" (*dhamme ñāṇam*).<sup>107</sup> "Retrospective knowledge" (*anvaye ñāṇam*) indicates knowledge obtained through direct observation of the phenomena of past events. The method that the Buddha utilized in finding dhamma's validity seems to be an adaptation of "retrospective knowledge" (*anvaye ñāṇam*). This aspect is noteworthy, for in the field of science, investigation always starts with the direct observation of the phenomena of past events. And

it is also interesting that knowledge of phenomena that *have happened* have the potential to become knowledge of phenomena that is happening in the present and will happen in the future. As A. J. Ayer says, one can predict the present and the future only by referring to the past and only when the reference is largely accurate.<sup>108</sup>

"Knowledge of dhamma" (*dharmā nāṇam*), another type of knowledge that the Buddha (or an enlightened person) acquired in full, is knowledge of the way things are (*dhamma*), which is specifically designated as "knowledge of *paṭiccasamuppāda*." Dhamma as the theory of *paṭiccasamuppāda* is knowledge drawn from past phenomena that have taken place. It is formulated as also being applicable to present and future. Kalupahana explains as follows:

After explaining all experienced phenomena (*dhamma*) — and these include conditioned events as well as related ideas or concepts (the latter being designated by the term *dhamma* in its restricted sense), — as "dependently arisen" (*paṭiccasamuppanna*), the Buddha formulated a general principle that became the central conception in Buddhism, namely, "dependent arising" (*paṭiccasamuppāda*). In his own words, the principle of dependent arising is an extension of the experience of dependence into the obvious past and the future.<sup>109</sup>

Therefore, the theory of *paṭiccasamuppāda* based upon the "dependently co-arisen phenomena" (*paṭicca-samuppanna dhamma*) becomes the theory of "dependently co-arising." The theory of *paṭiccasamuppāda* is shown by the general formula as follows:

When this is present, that is present;  
 From the arising of this, that arises;  
 When this is absent, that is absent;  
 On the cessation of this, that ceases.<sup>110</sup>

The early Buddhists' claim is that the Buddha discovered and thoroughly clarified the knowledge of *paṭiccasamuppāda* and presented it to the world as knowledge necessary to solve any problem, although he applied it only to solve the problem of human unhappiness. When this knowledge is established, it should be possible to formulate a highly accurate knowledge of the past, present and future, which could be called a universal law.<sup>111</sup> The early Buddhist position is that the universality of the problem of human suffering and the solution of the problem of human suffering is based on the principle of *paṭiccasamuppāda*. In this context, early Buddhism would directly refute a current common assumption that natural and physical science can predict future phenomena, but human science cannot do so, because human beings are totally

unpredictable. I stated earlier that "the Nikāya texts are not revelatory texts," but it does not mean that they do not reveal any new knowledge that was previously unavailable to us. If the above Nikāya statement is cast in the language of science, we can say that the Buddha predicted future human phenomena through the careful examination of past human phenomena.

In the process of examining the nature of human suffering, the principle of *paṭiccasamuppāda* is applied to the realm of ethics.<sup>112</sup> Some examples of the Buddha's statements relevant to the above concern in Nikāyas texts are as follows:

It is impossible, monks, it cannot come to pass, that the fruit of an action ill done by body, speech and mind should be pleasant, dear, delightful. But that it should be quite otherwise is possible.

It is impossible, monks, it cannot come to pass, that the fruit of an action well done by body, speech and mind should be unpleasant, hateful, distasteful. But that it should be otherwise is quite possible.<sup>113</sup>

According to the first part of the statement of each passage, it is impossible that a negative (or positive) action of the body, speech, and thought generates a positive (or negative) result, since the major cause that brings a positive (or negative) result is not there. But, according to the latter part of each statement, it is possible that a negative action generates a negative result, or a positive action generates a positive result. The major cause (*hetu*) by itself is not enough to bring the necessary effect. Other supportive conditions (*paccaya*) must be present. This means it is also possible that one may not receive the negative (or positive) effect of one's negative (or positive) action depending on whether other supportive conditions are present.

Elsewhere the Buddha explains the latter part of the above according to the same causal moral principle, utilizing a metaphor from a simple knowledge of natural science: A little cup of water becomes salty due to a grain of salt, but it is possible that the river Ganges may not become salty due to a grain of salt because of great mass of water in the river.<sup>114</sup> By the metaphor of the water and the grain of salt, the Buddha points out how someone who engages in a verbal, physical or mental negative action may not experience the negative effect of the action. The salt here indicates the primary cause and condition, and the quantity of water the supportive conditions. The intensity of the negative or positive effect of negative or positive action is varied depending on supportive conditions related to the situation. But, the principle of causal conditionality (*paṭiccasamuppāda*) adopted to the first part of the above statement clearly stipulates that it is impossible that the water in the



cup or the great mass of water in the river Ganges will become sweet due to the grain of salt.

The principle of *paṭiccasamuppāda* stipulates that when and only when all the necessary set of causes and conditions come together, there will necessarily be the same effect. The Nikaya categorically defines the principle as the four characteristics: (1) "*tathatā*" (objectivity); (2) "*avitathatā*" (necessity); (3) "*anaññathatā*" (invariability); and (4) "*idappaccayatā*" (conditionality).<sup>115</sup> The principle of *paṭiccasamuppāda* is not as simple and plain as one may think. According to the texts, Ānanda, the chief attendant of the Buddha, understanding the principle of *paṭiccasamuppāda* perhaps only partially, said to the Buddha, "to me it seems as clear as clear can be!"<sup>116</sup> The Buddha corrected him by telling him the depth and complexity of the theory as follows:

Say not so, Ānanda, say not so! Deep is this doctrine of events as arising from causes, and it looks deep too. It is through not understanding this doctrine, through not penetrating it, that this generation has become a tangled skein, a matted ball of thread, like to munja-grass and rushes, unable to overpass the doom of the Waste, the Woeful Way, the Downfall, the Constant Round [of Re-existence].<sup>117</sup>

As we discussed earlier, early Buddhists adopted some distinctive methods in establishing the truth claim of dhamma: (1) The theory starts with direct observation of phenomena; (2) the theory is based on the retrospective recollection of already experienced phenomena; and (3) the theory concerns both present and future causal conditionality. In their adoption of the methods, early Buddhists are apparently asserting two claims regarding the nature of dhamma: (1) dhamma is universally true and (2) dhamma is empirical. One may conclude that the early Buddhists claim for the justification of the universal validity of dhamma is not based upon a religious or tautological justification.

### 5. Experimentation and Verification

The theory of *paṭiccasamuppāda* is the theory of the causal conditionality of "this" and "that," which can be known and verified only by direct observation and which, therefore, is empirical by nature. When one personally and directly experiences the causal relationship of "this" and "that," one can make use of this knowledge to eliminate the undesirable effects of things or to generate desired effects. Hence, dhamma or *paṭiccasamuppāda* is known only by the wise (*viññu*), because the wise by utilizing the knowledge of causal relationship, make positive changes in their lives.

Several questions can be raised regarding the meaning of verification of dhamma. How can a person who is not enlightened empirically verify Nibbāna, the very final stage of cessation of *taṇhā* (self-centeredness) and thereby cessation of *dukkha* (suffering)? Or more directly, is Nibbāna falsifiable? Indeed, unless one takes the necessary steps for final verification, one can neither empirically experiment nor fully verify it. However, it does not mean that Nibbāna is unfalsifiable. Verification of Nibbāna may not be easy, but the issue of ease or difficulty of falsifiability is different from the issue of its possibility. As I have already mentioned, experience and verification of dhamma is a gradual progression. The theory of *paṭiccasamuppāda* stipulates that reduction (or promotion) of self-centeredness (*taṇhā*) and reduction (or promotion) of suffering (*dukkha*) occur progressively and simultaneously. When *taṇhā* (self-centeredness) is reduced (or increased) to a certain degree, *dukkha* (suffering) is also reduced (or increased) in the same proportion. A person can empirically experience and verify a gradual reduction of self-centeredness (*taṇhā*) and thereby a gradual reduction (or promotion) of suffering (*dukkha*) depending on his/her different level of mental development. The more agreement he/she finds between the experience and the theory, the more confidence in the hypothesis (theory) increases as does enthusiasm to continue further investigation.

According to early Buddhism, both *taṇhā* (self-centeredness) and *dukkha* (suffering) are one's mental activities. A person becomes aware of these mental activities by obtaining proper tools for observing them. One of the major tools to cultivate direct observation of the mind is the development of the mental faculty of insight/wisdom (*paññā*) through mindfulness (*satī*).<sup>118</sup> Another tool is the development of the mental faculty of calmness (*samādhi*). The cultivation of calmness (*samādhi*) and insight/wisdom (*paññā*) is integrally linked with the cultivation of ethical conduct (*sīla*). Thus, ethical conduct (*sīla*), concentration (*samādhi*) and insight (*paññā*) are regarded as the three fields of training which develop together. By cultivating these three, regardless of one's religious affiliation, one can perceive in oneself the reduction of *taṇhā* (self-centeredness) and thereby the reduction of *dukkha* (suffering).

The early Buddhist position is that no one can experience or verify dhamma for others. The actual experience and its confirmation cannot be shared with others, but the method and other information about the experience can be. Public experience and public verification would be contradictions for early Buddhists.<sup>119</sup>

According to the text, however, it is possible that another can recognize that a person has perfectly cultivated morality (*sīlavā*) or a person has perfectly cultivated wisdom (*paññavā*), through an association "after a long time, not casually, by close attention, not by inattention,

by a wise person, not by one weak in wisdom.<sup>120</sup> If so, it must also be possible that through a long, careful and close association, a wise person can recognize the other who has gained personal understanding.

Modern Western hermeneutics attempts to establish a so called "objective" and "scientific" interpretation of the literary texts. The underlying assumption is that information in natural science is "objective," as opposed to information in the humanities. Such an assumption generates several interesting questions. In natural science, a scientist's experiment or verification proceeds by means of repetition and objective measurements. These measurements enable a scientist to quantify the results of the experiment and supports verification by imparting statistical credibility. Quantification leads modern society to hold several illusions about scientific theories. First, although the public at large thinks that scientific data is absolutely accurate, scientists know otherwise. All numbers obtained in an experiment have only a relative degree of precision. Numbers used in science are a human expression of phenomena, but not the phenomena themselves. Therefore, scientific data is not absolutely "accurate," "factual" or "objective." Second, due to the current advancement of the mass media, scientific information is publicized and shared, and thus regarded as "the property not of individuals but of the entire human race."<sup>121</sup> Therefore, it is unconsciously believed that verification or the experiment itself is public and can be shared. Scientists rely on the "verification" of others' replications of experiments so that each scientist does not have to repeat each experiment, but can build on the work of others to test new propositions. A scientist is allowed to accept other scientists' experiments, measurements, theories, laws, or applications without he/she him/herself repeating the same actual scientific practices, once he/she can take them for granted. Thus, he/she does not have to start from first principles and justify the use of each concept introduced.<sup>122</sup>

In the fields of science, the number of research objects are incomparably enormous. Each branch of science has grown so fast, and become so complex, "that even experts had to rely on libraries, assistants and *aides m  moires* even in their own fields."<sup>123</sup> Scientists have perforce to omit individual experiments and verifications; not only is life too short to do a personal verification for each theory on the innumerable objects or subject matters in the physical world, but it is also impossible due to the technical difficulties of experiments and verification. In science, sharing information is sometimes tantamount to sharing experiments and verification. Scientists seek to move on to new hypotheses, adding, changing and revising old theories.

In the case of Buddhism, on the other hand, as I will discuss next, the world or universe is defined by eighteen components. The Buddha

and many others fulfilled their final goal by realizing these eighteen elements. Therefore, for Buddhists, there are no more than eighteen fields to study. Thus, unlike scientists, Buddhists seek to verify the entire dhamma.

No one can determine the intensity or the degree of self-centeredness (*taṇhā*) and suffering (*dukkha*) by objective measurement yet. Therefore, it is often believed that experience gained through Buddhist meditation is personal and private, while experience gained through modern science is public. From here, it may also be believed that the meanings of "verification" in Buddhism and in science are different. But, from the early Buddhists' point of view, these assumptions are one-sided. Even if quantification of the intensities of mental activities becomes possible, numbers themselves are only conventional and symbolic and are not activities themselves. This is why early Buddhists enjoin replication of individual participation in each level of experience of dhamma. Narratives of Nikāya texts tell us that dhamma was enjoyed not only by adults, but also by children.<sup>124</sup> Early Buddhists did not advocate the treatment of dhamma as religious and spiritual dogma which should be accepted without verification. It is reasonable to conclude that early Buddhism requires radical empiricism.

### 6. Objects of Research

A major difference between early Buddhism and science is the number of their research objects. During the past few decades, due to new discoveries and consequent revision of old information, data in the fields of science have proliferated. Science will continuously keep searching for answers, and therefore keep revising and correcting old information. In science, the number of questions to be answered has no limits, because the universe being researched is infinite. It is interesting that, according to Geoffrey Redmond, some scientists undoubtedly believe that science eventually will become capable of explaining everything, while others undoubtedly do not.<sup>125</sup>

In Buddhism, on the other hand, the number of questions to be answered is limited by condensing the entire universe to only eighteen fields of study. By this approach all the questions that must be answered to understand the world or universe were completely answered by the Buddha and his disciples 2600 years ago. Buddhism observes that the world is constituted by eighteen kinds of objects. The following is the definition of the universe, the whole world or what we call "everything." Once one knows how they operate together, one is regarded as a person who understands the universe, the whole world, or everything, called "*sabbāññū*"<sup>126</sup> meaning one who knows everything or "*lokavidu*"<sup>127</sup> meaning one who knows the whole world.

## Universe / Whole World / Everything

eye	+	visual object	+	visual consciousness
ear	+	auditory object	+	auditory consciousness
nose	+	olfactory object	+	olfactory consciousness
tongue	+	gustatory object	+	gustatory consciousness
skin	+	tangible objects	+	tactile consciousness
mind	+	mental objects (concepts)+		mental consciousness <sup>128</sup>

In Buddhism, unlike science, each sensory object, such as "form," for example, represents all the forms that eyes perceive. In other words, Buddhism does not attempt to examine each particular form one by one as in science. It does not attempt to examine the "form" of one molecule or the "form" of the planet Saturn. "Form" encompasses all forms as visual objects. Buddhism proposes examining how the sensory organs and sensory objects operate together to generate the sensory consciousnesses that form the sensory world, which we call the whole universe, and how this process relates to suffering.<sup>129</sup> Thus, it is possible to complete a full examination of the interaction of these eighteen spheres that make up the whole universe in a limited amount of time. Early Buddhist research, from ethics to cosmology, is solely concerned with investigating the normal or abnormal interaction of these eighteen fields which finally become elements of mind. The Buddha and others verified that *dukkha* is an abnormal interaction of these eighteen factors. *Dukkha* can be completely eliminated by fully understanding them. For Buddhists, it is unnecessary to move on to new hypotheses or to explore new fields.

## 7. Conclusion

Buddhism is conventionally categorized as "religion," but early Buddhists would probably not accept such a characterization. Also, early Buddhism (and perhaps Buddhism in general) is sometimes categorized as "atheistic" or "non-theistic."<sup>30</sup> But such a notion is irrelevant to early Buddhism (and also perhaps Buddhism in general), just as it is irrelevant to natural sciences: No one would ask whether chemistry, for example, is "theistic" or "atheistic." If Buddhism is categorized under the rubric of religion, what is needed is a definition of religion which is not solely based on its theistic forms.

The early Buddhists' approach to their own alleged truth also seems to directly challenge modern scholars' current Western hermeneutics. Originating with a pivotal concern of a Christian theologian, F. D. E. Schleiermacher (1768–1834), modern Western hermeneutics has grown

into a prominent movement that involves the entire arena of modern intellectual disciplines. Today, among modern intellectual disciplines, "the problems of hermeneutics are more unavoidable in the scholarly study of religion than in many other academic disciplines."<sup>31</sup> Scholars of modern Western hermeneutics regard the study of religion as an "interpretation of an interpretation."<sup>32</sup> This may be correct if it refers to a belief system of a theological religion whose system relies on the faith of certain communities with certain interpretations. In such a religious system, hermeneutics, in the sense of the theories and principles of interpretations, plays a crucially important role. However, the above notion of religion is derived from Western religions and does not seem immediately applicable to the system of early Buddhism.

In this essay, I have attempted to show that in the search for truth, early Buddhism adopts a thorough empiricism, based upon direct observation, retrospective knowledge of past experiences, experiment, verification or realization, and replication, and that these methods are similar to those of scientific research. Dhamma is always presented as not only falsifiable but to be individually and personally tested and examined before acceptance.

Some, perhaps some Buddhists, might hold that to see Buddhism as a scientific search would devalue and diminish it. They might claim that Buddhism is deeper than science or that Buddhism teaches more than science does. But Buddhism is not diminished by being likened to science in the methods it adopts. The Buddha himself declared that he did not communicate all the knowledge that he acquired.<sup>33</sup> He clearly limited himself to teaching only the knowledge that leads to ending suffering,<sup>34</sup> which is the normalization of the interaction of eighteen components of the universe. It is not pertinent to assert that the value of religion is higher than that of science. While admitting that both religion and science have yielded numerous benefits, one must acknowledge the disastrous effects of both through the course of history. In the name of religion, the followers of religious institutions and ostensibly religious thought (dogma), have destroyed and killed people, justifying their atrocities by invoking specious and sanctimonious principles. Scientific discoveries and technologies have also been responsible for similar results, for example, by governments producing and using nuclear bombs and other weapons.

The question is: How can knowledge, whether it be so called religious and theological doctrines allegedly claimed as truth, or so called scientific knowledge, be utilized for the benefit of human and other beings? Knowledge can be misused by human beings whenever they are driven by self-centeredness (*tanha*), which is a result of abnormal interactions of the eighteen components of universe. By the misuse of



knowledge, harm to many beings can result. Science and religion need to continuously examine themselves in the application of knowledge in the real world. This is why early Buddhists warned against a mishandling of dhamma in the parable of the snake. And this is why early Buddhists consistently enjoined the adoption of a thorough personal examination and verification of dhamma.

According to contemporary science, it is no longer possible to make a distinction between the body and the mind, the physical world and the mental world. A separation between science and ethics then also becomes eventually impossible. But, in the meantime, the scientist and ethicist can attempt to see the unity of science and ethics. Indeed, modern scientific technologies are urging them to do so.

We already see a positive sign of it in science: A contemporary physicist, Michio Kaku, made a simple proclamation that "science and technology should not be used to harm anyone."<sup>135</sup> This is a healthy statement that a modern scientist can make, stepping forward towards a formation of wholesome science where ethics ("ought") and science ("is") are embodied together. Perhaps, the notion of "health" in the field of medical science also further promotes the possibility of considering a unity of knowledge of scientific methods for ethical decision making: Medical professionals try to use the knowledge given by medical scientists to change human behavior in order to protect them from illnesses, prevent and cure illnesses and to provide physical health.

Early Buddhists would claim that their moral system is not a certain "religious" (in this case "Buddhist") moral system. They would disagree to call it "Buddhist" ethics. They would see the moral system based upon the principle of "*paṭiccasamuppāda*" (dependent co-arising or causal conditionality) as a "universal moral system" which is based upon thoroughly and individually empirical, falsifiable, and replicable methods and approaches, but not upon a religious and theological dogma and belief.

When knowledge and human behavior are harmoniously combined, ethics and science will be unified. Some 2600 years ago, early Buddhists esteemed the Buddha not only as the ultimate Surgeon General (*sallakatto anuttaro*),<sup>136</sup> but also as the one who modeled behavior after knowledge (*vijjā-carana-sampanno*).<sup>137</sup> Today, it is noteworthy that early Buddhists called their own search or quest "*ariyapariyesanā*"<sup>138</sup> (noble investigation / research). For them, buddha-dhamma is ethics based upon scientific understanding, of which the sole purpose is the enhancement of the quality of life.

## Abbreviations

A	<i>Anguttara Nikāya</i>
D	<i>Dīgha Nikāya</i>
Dh	<i>Dhammapada</i>
Dialogue	<i>Dialogues of the Buddha</i>
Gradual	<i>The Book of the Gradual Sayings</i>
Kindred	<i>The Book of the Kindred Sayings</i>
M	<i>Majjhima Nikāya</i>
Middle	<i>The Middle Length Sayings</i>
S	<i>Samyutta Nikāya</i>
Sn	<i>Suttanipāṭa</i>

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## Notes

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- <sup>2</sup> *Encyclopaedia of Religion and Ethics*, 1951 ed., s.v. "ethics" by J. H. Muirhead.
- <sup>3</sup> See also *The Encyclopedia of Philosophy*, Vol. 3. 1967 ed., s.v., "History of Ethics," by Raziel Abelson, "Problems of Ethics," by Kai Nielsen.
- <sup>4</sup> Cf. Alasdair MacIntyre, *A Short History of Ethics* (New York: The Macmillan Company, 1966); William K. Frankena, *Ethics* (New Jersey: Prentice-Hall, Inc., 1973); Fritiof Capra, *The Tao of Physics* (Colorado: Bantam Books, 1977).
- <sup>5</sup> Frankena, *Ethics*, pp. 5–11.
- <sup>6</sup> I use the term "early Buddhists" in the sense of those who lived at the very early stage of Buddhism in India and utilized Dhamma, depicted in the Pali Nikāya texts as available today, as their fundamental source of knowledge.
- <sup>7</sup> E.g., David Kalupahana, *A History of Buddhist Philosophy: Continuities and Discontinuities* (Honolulu: University of Hawaii Press), 1992; Kalupahana, *Buddhist Philosophy: A Historical Analysis* (Honolulu: The University of Hawaii Press), 1976; Kalupahana, *Causality: The Central Philosophy of Buddhism* (Honolulu: The University of Hawaii Press), 1975; K. N. Jayatilleke, *Early Buddhist Theory of Knowledge*, (London: George Allen & Unwin Ltd.), 1963.
- <sup>8</sup> E.g., Frank J. Hoffman, *Rationality and Mind in Early Buddhism* (Delhi: Motilal Banarsidass), 1987; Hoffman, "Buddhist Belief 'In'," *Religious Studies* 21, (1985): 381–387; J. E. White, "Is Buddhist Karmic Theory False?" *Religious Studies* 19, No. 2 (June 1983): 223–228; Paul J. Griffiths, "Notes towards a critique of Buddhist karmic theory," *Religious Studies* 18, No. 3 (September 1982): 277–291; Henry Cruise, "Early Buddhism: Some recent misconceptions," *Philosophy East and West* 33, No. 2 (April 1983): 149–166; Hoffman, "The Buddhist Empiricism Thesis," *Religious Studies* 18, No. 3 (1982): 151–158.
- <sup>9</sup> *Key Ideas in Human Thought*, Kenneth McLeish, ed., (N. Y.: Facts On File, Lnc.), 1993, s.v., "science."
- <sup>10</sup> *The Hutchinson Dictionary of Ideas*, ed., Owen Adikibi, (Santa Barbara: ABC-Clío, 1994), s.v., "science."
- <sup>11</sup> *The Encyclopedia of Philosophy*, Vol. 7. 1967 ed., s.v., "Scientific Method" by Peter Caws.

- <sup>12</sup> *Key Ideas in Human Thought*, ed., Kenneth Maleish, (N. Y.; Facts On File, Inc., 1993), p. 657.
- <sup>13</sup> Kuhn, *The Structure of Scientific Revolutions*, p. 209.
- <sup>14</sup> *Key Ideas in Human Thought*, ed., Kenneth Mcleish, (N. Y.; Facts On File, Inc., 1993), s.v., "science."
- <sup>15</sup> *The Hutchinson Dictionary of Ideas*, ed., Owen Adikibi, (Santa Barbara: ABC-Clio, 1994), s.v., "science."
- <sup>16</sup> *The Book of the Discipline*, Vol. V (*Cullavagga*), pp. 193–194.
- <sup>17</sup> E.g., S. I. 71–74; *Kindred*, I. pp. 99–100 : S. I. 75; *Kindred*, I. p. 102, etc.
- <sup>18</sup> Traditionally, it is said that "me" refers to Ānanda, the Buddha's closest attending disciple who served him for the last 25 years of the Buddha's missionary life. He is said to have listened to and memorized the Buddha's teachings more fully than any other disciples. Ānanda, because of his distinctive memory, is said to have been assigned the task of redacting the Nikaya texts.
- <sup>19</sup> In the later Mahāyāna literature, however, the same stock phrase is rather used in the sense of the direct teaching of the Buddha himself.
- <sup>20</sup> Peter Gregory, "Chinese Buddhist hermeneutics: The Case of Huayen," *Journal of the American Academy of Religion* 51, No. 2 (June 1983): 232.
- <sup>21</sup> They are as follows: Something is the truth, the law, the teaching of the Master, when it is: (i) "from the mouth of the Exalted One himself heard by me, from his own mouth it is received by me." (ii) "In such and such a dwelling-place there is a company of the disciples with their elders and leaders. From the mouth of that company heard by me, face to face is received by me." (iii) "In such and such a dwelling-place there are dwelling many elders of the Order, deeply read, holding the faith as handed down by tradition, versed in the truths, versed in the regulations of the Order, versed in the summaries of the doctrines and the law. From the mouth of those elders heard by me, from their mouth has been received by me." (iv) "In such and such a dwelling-place, there lives a disciple, deeply read, holding the faith as handed down by tradition, versed in the truths, versed in the regulations of the Order, versed in the summaries of the doctrines and the law. From the mouth of that leader has been heard by me, from his [sic] mouth has been received by me." When a teaching is received in the presence of one of these four, a person might represent it as authoritative and authentic by saying, "This is Dhamma, this is the law, this is the teaching of the Master." D. II. 123–124: *Dialogue*, II. pp. 133–136.
- <sup>22</sup> E. g., A. I. 157; *Gradual*, I. p. 141.
- <sup>23</sup> M. II. 238–243; *Middle*, III, pp. 24–29.



<sup>24</sup> A. II. 51; *Gradual*, II. pp. 60–61.

<sup>25</sup> Gregory, "Chinese Buddhist hermeneutics: The Case of Hua-yen," *Journal of the American Academy of Religion* 51, No. 2 (June 1983): 232.

<sup>26</sup> *Ibid.*

<sup>27</sup> See Shoyo Taniguchi, "Methodology of Buddhist Biomedical Ethics," in *Religious Methods and Resources in Bioethics*, ed., Paul F. Camenisch, (Dordrecht, Boston and London: Kluwer Academic Publishers, 1994), pp. 37–42.

<sup>28</sup> By "belief" I mean baseless belief or blind belief. I do not indicate the notion of "*saddhā*" or "confidence" in early Buddhism here.

<sup>29</sup> A. I. 187; *Gradual*. I. pp. 170–173.

<sup>30</sup> Following the definition of the *Encyclopedia of Philosophy*, I use the term "empiricism" in the sense of "the theory that experience rather than reason is the source of knowledge, and in this sense it is opposed to rationalism." See *The Encyclopedia of Philosophy*, 1967 ed., s.v. "Empiricism" by D. W. Hamlyn.

<sup>31</sup> K. N. Jayatilleke, *Early Buddhist Theory of Knowledge* (Delhi: Motilal Banarsidass, 1980), p. 272.

<sup>32</sup> *Ibid.*, p. 328.

<sup>33</sup> S. II. 105; *Kindred*, II. p. 74.

<sup>34</sup> *Ibid.* As I will discuss later, due to the nature of dhamma, this discovery should be differentiated from so called "revelation" used in the theology.

<sup>35</sup> S. II. 25; *Kindred*, II. p. 21.

<sup>36</sup> *Encyclopedia of Religion*, 1987 ed., s.v. "Buddhist Literature: Exegesis and Hermeneutics," by L. Gomez.

<sup>37</sup> Frank J. Hoffman, *Rationality and Mind in Early Buddhism*, p. 6.

<sup>38</sup> *Ibid.*, p. 6.

<sup>39</sup> Nathan Katz, *Buddhist Images of Human Perfection* (Delhi: Motilal Banarsidass, 1982), pp. 122–145.

<sup>40</sup> Nakamura, *Genshi Bukkyō no Seiritsu* (Formation of Early Buddhism), (Tokyo: Shun Jū Sha, 1992), pp. 201–202. This is also the case in Jainism.

<sup>41</sup> Robert Thurman, "Buddhist Hermeneutics," *Journal of the American Academy of Religion* 46, No. 1 (March 1978): 20.

<sup>42</sup> M. I. 130–142; *Middle*, I. pp. 167–182.

<sup>43</sup> *Ibid.*

<sup>44</sup> Mitsuyoshi Saigusa, *Shoki Bukkyō no Shisō* (Principal Thoughts of Early Buddhism), (Tokyo: Institute of Oriental Philosophy, 1978), p. 187.

<sup>45</sup> David Kalupahana, *Causality: The Central Philosophy of Buddhism* (Honolulu: The University of Hawaii Press, 1975), p. 178.

- <sup>46</sup> D. I. 178–189; *Dialogue*, I. pp. 244–256; M. I. 426–432; *Middle*, II. pp. 97–101.
- <sup>47</sup> Kalupahana, *Causality: The Central Philosophy of Buddhism*, pp. 177–183. The present essay does not discuss extra-sensory knowledge or trans-empirical knowledge, that goes beyond the realm of empiricism.
- <sup>48</sup> Jayatilke, *Early Buddhist Theory of Knowledge*, p. 475.
- <sup>49</sup> Kalupahana, *Causality: The Central Philosophy of Buddhism*, p. 180.
- <sup>50</sup> *Encyclopaedia of Religion and Ethics*, 1951 ed., s.v., “Science” by J. Arthur Thomson.
- <sup>51</sup> S. V. 353–354; *Kindred*, V. pp. 308–309.
- <sup>52</sup> Cf. Kalupahana, *Causality: The Central Philosophy of Buddhism*, Chizen Akanuma, *Genshi Bukkyō no Kenkyū* (Study of Early Buddhism), (Kyoto: Hōzō Kan, 1981), pp. 29–34.
- <sup>53</sup> Hajime Nakamura & Mitsuyoshi Saigusa, *Bauddha*, (Tokyo: Shōgakukan, 1987), p. 149.
- <sup>54</sup> A. I. 156–157; *Gradual*, I. p. 140.
- <sup>55</sup> S. V. 421; *Kindred*, V. p. 357; D. II. 61; *Dialogue*, II. pp. 57–58; D. II. 308; *Dialogue*, II. p. 340; D. III. 216; *Dialogue*, III. pp. 208–209; D. III. 275; *Dialogue*, III. p. 253; S. III. 26; *Kindred*, III. p. 25; S. III. 158; *Kindred*, III. p. 25; *It* 50, etc.
- <sup>56</sup> S. V. 75; *Kindred*, I. p. 102.
- <sup>57</sup> *Dh.* 129, 130.
- <sup>58</sup> S. V. 437; *Kindred*, V. p. 370.
- <sup>59</sup> Gunapala Dharmasiri, *Fundamentals of Buddhist Ethics*, (Antioch: Golden Leaves Publishing Company, 1989), p. 25.
- <sup>60</sup> *Ibid.*, p. 26.
- <sup>61</sup> *Ibid.*
- <sup>62</sup> E.g., *Dh.* 129, 130.
- <sup>63</sup> *Theragatha*, 12; *Sn.* 212, 782, 790, 797, 803; *It.* 79.
- <sup>64</sup> Hoffman, *Rationality and Mind in Early Buddhism*, p. 33.
- <sup>65</sup> *Ibid.*, pp. 33–43.
- <sup>66</sup> E.g., S. V. 420; *Kindred*, V. p. 357.
- <sup>67</sup> Hoffman, *Rationality and Mind in Early Buddhism*, p. 33.
- <sup>68</sup> *Ibid.*
- <sup>69</sup> *Ibid.*
- <sup>70</sup> *Ibid.*, p. 42–43.
- <sup>71</sup> See Taniguchi, “Methodology of Buddhist Biomedical Ethics,” pp. 38–42.
- <sup>72</sup> E.g., Vinayapitaka, *Mahāvagga*, I. 6, 14; *The Book of the Discipline* Vol. IV. p. 23, 24, 26., 27, 32, etc., Vol. II. 156, 192; D. I. 110; *Dialogue*, I. p. 135; D. II. 41; *Dialogue*, II. p. 34; M. I. 379; *Middle*, II. p. 45; J. I. 8; *Mil.* 228.
- <sup>73</sup> M. III. 258–215. *Middle*, III. pp. 254–262.

<sup>74</sup> Magdalene and Wilhelm Geiger, *Pali Dhamma: vornehmlich in der kanonischen Literatur*, (Abhandlungen der Bayerischen Akademie der Wissenschaften; Philosophisch — philologische und historische Klasse; Munchen: Verlag der Bayerischen Akademie der Wissenschaften, 1920) Band 1,3. quoted in John Ross Carter, "Dhamma as a Religious Concept: A Brief Investigation of its History in the Western Academic Tradition and Its Centrality within the Sinhalese Theravada Tradition," *Journal of the American Academy of Religion* 44, No. 1 (March, 1976): 661–665.

<sup>75</sup> See Carter, "Dhamma as a Religious Concept," 661–665.

<sup>76</sup> Ibid., 666.

<sup>77</sup> Ibid. 661–674.

<sup>78</sup> Hoffman, *Rationality and Mind in Early Buddhism*, p. 98.

<sup>79</sup> Ibid.

<sup>80</sup> E.g., *M. I.* 171: *Middle*, I. p. 215.

<sup>81</sup> "This Norm [Dhamma] then, wherein I am supremely enlightened — what if I were to live under It, paying honour and respect?" *S. I.* 139: *Kindred*, I. p. 175; *A. II.* 20; *Gradual*, II. pp. 20–21.

<sup>82</sup> *Sn.* 228.

<sup>83</sup> *M. I.* 190–191; *Middle*, I. pp. 236–237.

<sup>84</sup> *S. II.* 24; *Kindred*, II. p. 21; *D. III.* 279; *Dialogue*, III. pp. 256–257.

<sup>85</sup> "Aham pi susam bhikkhave pubbe va sambodha anabhisambuddho bodhisatto" *M. I.* 163; *Middle*, I. p. 207.

<sup>86</sup> *D. I.* 1–46; *Dialogue*, I. pp. 1–55.

<sup>87</sup> Whenever the term "theory" is used in this paper, it should be taken to connote the casting of the experience (dhamma) in adequate linguistic terms.

<sup>88</sup> It is known that the final conclusion that the Buddha arrived is the Middle Path. The falsified theories were the two extreme paths, which are, addiction to self-mortification and indulgence in sensual pleasures. *S. V.* 420; *Kindred*, V. p. 357; *The Book of the Discipline*, Vol. IV, p. 15.

<sup>89</sup> *The Book of the Disciplines*, Vol. IV (*Mahāvagga*) . p. 17; *S. V.* 423; *Kindred*, V. p. 359.

<sup>90</sup> *The Book of the Disciplines*, Vol. IV (*Mahāvagga*) . p. 17; *S. V.* 423; *Kindred*, V. p. 359.

<sup>91</sup> Hoffman, *Rationality and Mind in Early Buddhism*, pp. 97–98.

<sup>92</sup> Karl Barth, *Church Dogmatics*, eds. G. W. Bromiley and T. F. Torrance. Trs. T. H. L. Parker, W. B. Johnson, Harold Knight and J. L. M. Harire (Edinburgh: T & T Clark 1964), Vol. II, p. 279.

<sup>93</sup> "vusitaṃ brahmacariyaṃ, kataṃ karaṇiyaṃ nāparaṃ itthattayati" *M. I.* 249; *Middle*, I. p. 303.

- <sup>94</sup> E.g., A. III. 450–451; *Gradual*, III. Pp. 313–314; M. I. 491; *Middle*, II. p. 170.
- <sup>95</sup> M. II. 164ff; *Middle*, II. p. 354ff.
- <sup>96</sup> M. I. 318ff; *Middle*, I. p. 379 ff.
- <sup>97</sup> D. II. 217; D. III. 5; D. III. 227; *Thus Have I Heard*, p. 299, p. 372; p. 491; S. I. 9; S. IV. 41; S. IV. 272; V. 343; *Kindred*, I. p. 16; *Kindred*, IV. p. 21; *Kindred*, IV. p. 187; *Kindred*, V. p. 297; A. I. 156; A. II. 198; *Gradual*, I. p. 140; *Gradual*, II. p. 209.
- <sup>98</sup> *Dhammapada* 160 and 165 also emphasize the importance of one's own direct experience.
- <sup>99</sup> A. I. 157; *Gradual*, I. p. 141.
- <sup>100</sup> M. I. 479–481; *Middle*, II. pp. 154–156; M. III. 1–7; *Middle*, III. pp. 52–57. According to George Bond, a gradual path to enlightenment is the later Theravada commentators' invention as the "hermeneutic strategy" to make "immeasurable," "profound," and "extraordinary" teachings of the Buddha understandable to "ordinary human beings, with only mundane reason and knowledge." See *The Word of the Buddha*, (Colombo: M. D. Gunasena & Co. Ltd, 1982), p. 32 and "The Gradual Path as a Hermeneutical Approach to the Dhamma," in *Buddhist Hermeneutics*, ed. by Donald S. Lopez, Jr. (Honolulu: The University of Hawaii Press, 1988), p. 33. However, a gradual path seems clearly the Nikāyas'. Many suttas of the Nikāya texts are written based upon "anupubbi-kathā" (a gradual instruction), "anupubba-sikkhā" (a gradual training), "anupubba-kiriya" (a gradual doing) and "anupubba-paṭipadā" (a gradual course).
- <sup>101</sup> It should be noted, however, that in the historical process, both the Buddha and dhamma gradually became objects of religious belief. The Buddha, the interpreter of dhamma in early Buddhism, seems to be transformed into the truth giver in the later Mahāyāna Buddhism and dhamma, a theory of conventional and phenomenal reality in early Buddhism, is transformed into absolute reality or truth itself in the later Mahāyāna Buddhism.
- <sup>102</sup> *Key Ideas in Human Thought*, ed., Kenneth Mcleish, 1993 ed., s.v., "science."
- <sup>103</sup> Ibid.; *The Hutchinson Dictionary of Ideas*, 1994 ed., s.v., "science."
- <sup>104</sup> "Yo paṭiccasamuppādam passati so dhammam passati." M. I. 190–191; *Middle*, I. pp. 236–237.
- <sup>105</sup> S. II. 26; *Kindred* II. p. 22.
- <sup>106</sup> Kalupahana, *A History of Buddhist Philosophy*, p. 55.
- <sup>107</sup> S. II. 59; *Kindred*, II. p. 42.
- <sup>108</sup> Alfred Jules Ayer, *Language, Truth and Logic*, (New York: Dover Publications, 1952), pp. 97–98.

- <sup>109</sup> David J. Kalupahana, *A History of Buddhist Philosophy*, pp. 53–54.
- <sup>110</sup> *M. III.* 63; *Middle*, III. p. 107; *S. II.* 69; *Kindred*, II. p. 49.
- <sup>111</sup> For the Buddha, however, such knowledge itself as knowledge was not his primary concern. He consistently stated that, deeply knowing many things (*abhiññaya anakkhata*), he did not speak. Cf. *S. V.* 438; *Kindred*, V. p. 370. His knowledge was utilized only for a very specific purpose: Suffering (*dukkha*), its arising, its ceasing, and the practice that leads to the ceasing.
- <sup>112</sup> For a basic causal ethical principle, see Taniguchi, "Methodology of Buddhist Biomedical Ethics," pp. 35–36.
- <sup>113</sup> *A. I.* 28; *Gradual*, I. p. 26.
- <sup>114</sup> *A. I.* 250; *Gradual*, I. p. 228.
- <sup>115</sup> *S. II.* 25–26; *Kindred* II. pp. 21–22. See Kalupahana's *Causality: The Central Philosophy of Buddhism*, pp. 91–93.
- <sup>116</sup> *D. II.* 55; *Dialogue*, II. pp. 50–51; *S. II.* 92; *Kindred*, II. p. 64.
- <sup>117</sup> *Ibid.*
- <sup>118</sup> See Taniguchi, "Methodology of Buddhist Biomedical Ethics," pp. 44–45.
- <sup>119</sup> Henry Cruise insightfully says as follows, "...knowledge is a private thing for Early Buddhism. Even belief in the Four Noble Truths does not count as knowledge unless one has investigated them personally, verified them for oneself. For Early Buddhism, 'public knowledge' would be a contradiction in terms." See "Early Buddhism: Some recent misconceptions," *Philosophy East and West* 33, No. 2 (April 1983): 150. I think Cruise here uses the term "knowledge" in the sense of "experience" and "verification," instead of "information." I disagree with Hoffman's criticism against Cruise's argument on this issue. See Hoffman, "Buddhist Belief 'In'," 383ff.
- <sup>120</sup> *A. II.* 187–188; *Gradual*, II. pp. 196–198.
- <sup>121</sup> *Key Ideas in Human Thought*, Kenneth Maleish, ed., p. 661.
- <sup>122</sup> Thomas S. Kuhn, *The Structure of Scientific Revolutions* (Chicago: The University of Chicago Press, 1970), p. 10, pp. 19–20.
- <sup>123</sup> *Key Ideas in Human Thought*, p. 661.
- <sup>124</sup> E. g., Sopāka, a seven year old boy, *Theragāthā* 480–486; Sunīta, a child road-sweeper, *Theragāthā* 620–631; Rahula, the Buddha's son, *M. II.* 414–420; *Middle*, II. pp. 87–90.
- <sup>125</sup> Geoffrey P. Redmond, "Science and Buddhism: A Critical Review," Presentation at the Taiwan Conference, (August, 1994), p. 5.
- <sup>126</sup> *M. I.* 482; *Middle*, II. p. 160; *M. II.* 31; *Middle*, II. p. 228; *M. II.* 126; *Middle*, II. p. 309; *A. I.* 220; *Gradual*, I. p. 200. I do not discuss the doctrinal issue of the Buddhist notion of omniscience, here.
- <sup>127</sup> *D. III.* 76; *Dialogue*, III. p. 74; *S. I.* 62; *Kindred*, I. p. 87; *S. V.* 197; *Kindred*, V. p. 172; *S. V.* 343; *Kindred*, V. p. 297; *A. II.* 48; *Gradual*, II. p. 56.

- <sup>128</sup> S. IV. 52; *Kindred*, IV. p. 28. Another sutta defines "the all" (*sabba*) by the first 12 objects of the 18 objects. See S. IV. 14; *Kindred*, IV, p. 8. The Buddha included all phenomena in the above 12 or 18 objects. The Buddha is called as the "all-knower" (*sabbāññu*) and the "knower of the universe" (*lokavidu*). See D. III. 76; S. I. 62; S. V. 197; S. V. 343; A. II. 48.
- <sup>129</sup> M. I. 112; *Middle*, I. p. 145.
- <sup>130</sup> N. Ross Reat uses the term "atheist" to label himself a "Buddhist." Cf. "Pluralism, Deconstructionism, and World Theology," Presentation at AAR Congress at Chicago, 1994. Alfred Bloom once suggested me to use the term "non-theistic" instead of "atheistic" to depict the nature of Buddhism to avoid a potentially negative connotation of the term in the West, such as "amoral" or "areligious."
- <sup>131</sup> *Encyclopedia of Religion*, 1987 ed., s.v. "Hermeneutics," by V. Harvey.
- <sup>132</sup> *Ibid.*
- <sup>133</sup> "*abhiññāya anakkhataṃ*" S. V. 438; *Kindred*, V. p. 370.
- <sup>134</sup> S. V. 437; *Kindred*, V. p. 370.
- <sup>135</sup> Michio Kaku, "The Harmony Between Modern Science and Religion: The New Unification in Physics," key-note speech at the Buddhist Churches of America Ministers Association and National Council Meeting Banquet in Palo Alto, California, February 25, 1995.
- <sup>136</sup> *Sn.* 560.
- <sup>137</sup> D. I. 49; *Dialogue*, I. p. 67 ; *Sn* 352.
- <sup>138</sup> M. I. 161–163. *Middle*, I. pp. 205–207