EARLY INDIAN LOGIC

AND THE QUESTION

OF GREEK INFLUENCE

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# Table of Contents

**Tables of contents**

There are two tables of contents in this work: the table of contents above contains chapter headings only. This facilitates an overview of the whole document. The following table of contents is a complete analytical table of contents showing all headings. It provides the details of all subsections within the work.

# Analytical Table of Contents

# Abstract

The main arguments for Greek influence in Indian logic are that the Indian and Greek systems of logic display more similarities than can be reasonably explained as the result of coincidence; that Indian logic, unlike Greek logic, shows no signs of progressing through stages of development; that Greek logic pre-dates Indian logic; that the Greeks were in India at the right time to influence Indian logicians; and that the Greeks are known to have influenced Indians in areas other than logic, e.g. art and astronomy.

I show that the arguments for Greek influence in Indian logic are not compelling. Moreover, I present a case that Indian logic most likely developed without Greek influence. The main argument against Greek influence in Indian logic is that there are developmental stages in Indian logic, and these demonstrate that logic in India most probably evolved from the ancient tradition of debate in a manner completely independent of any Greek influence.

My account of early Indian logic draws on a wide variety of sources. These range from the very earliest surviving records that describe the days of the Buddha (fifth century BC) down to the works of Nāgārjuna (second century AD). These sources include ancient works on debate, as well as religious, philosophical and medical works. The logically significant material scattered through these works has been separated from all other extraneous material and arranged both chronologically and by topic. My thesis therefore presents the essential features of early Indian logic without the complications normally associated with research in this area. The stages in the development of early Indian logic show that there is no need to invoke Greek influence in order to account for the existence of well-developed logic in India during the Hellenistic period.

# Acknowledgements

# Chapter one: Introduction

## Nature and scope of the investigation

There are those who claim that ancient India had no logic at all, but such claims are no longer considered defensible. The arguments that Indian logic came from Greece are far more compelling. The strongest case for this is made by McEvilley in his recent book *The Shape of Ancient Thought* (2002). This work builds on similar ideas he put forward in three articles published during the early 1980's. McEvilley is certainly not the only advocate of this view, but his book is the most recent and the most comprehensive – containing over 700 pages of densely packed text that resulted from thirty years of research on the topic. McEvilley argues for a massive transfer of ideas and methods of thinking in two directions: firstly, from India into Greece during the pre-Socratic period, and secondly, from Greece back into India during the Hellenistic period. Only the second of these two is investigated in this thesis. That is, McEvilley argues that during the Hellenistic period, Greek ideas found their way into Indian logic, philosophy, art, medicine and astronomy.

The main arguments put forward by McEvilley for Greek influence in Indian logic are that Indian and Greek systems of logic display more similarities than can be reasonably explained as the result of coincidence; Indian logic, unlike Greek logic, shows no signs of progressing through stages of development; Greek logic pre-dates Indian logic; the Greeks were in India at the right time to influence Indian logicians; and the Greeks are known to have influenced Indians in areas other than logic, e.g. art and astronomy. McEvilley concludes that the probability of Greek influence in Indian logic is so high that it must be accepted as a fact.

The aim of this thesis is to show that McEvilley's arguments do not establish that the Greeks did in fact influence Indian logic. The main argument used against McEvilley is that there is evidence of developmental stages in Indian logic that explain its evolution from the tradition of debate in a manner independent of any Greek influence. This fact removes the need to invoke Greek influence in order to explain the existence of well-developed logic in India during the Hellenistic period. This shows not only that McEvilley's arguments for Greek influence are not proven, but also that Indian logic most likely developed entirely without Greek influence.

There were two types of logic in ancient India: the first focused on establishing matters of fact using structured proofs governed by rules, and the second focused on refuting matters of fact using conditionals with an opponent's position as the antecedent and an unacceptable

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position as the consequent. The most well-known representatives of these two types of logic are the *Nyāya Sūtra* and Nāgārjuna, respectively. The stages in the development of these two types of logic are presented here in chronological order, covering a period from the days of the Buddha in the fifth century BC down to Nāgārjuna in the second century AD. This account serves two purposes: firstly, it provides a description of the development of early Indian logic, and secondly, it shows that there is no need to invoke Greek influence in order to account for well-developed logic in India during the Hellenistic period.

The final chapter of the thesis takes the evidence for Greek influence in Indian astronomy as an example of the type of evidence that should be found in Indian logic if it had been influenced by the Greeks as claimed. The fact that there is no such evidence, as well as the fact that there are developmental stages within Indian logic, adds further weight to the position that the case for Greek influence in Indian logic remains unproven.

## 1.1    Methodology

Indian logic has been studied in the West for only a relatively short time. One of the earliest pioneers in the study of Indian logic in the West was Sir William Jones. He announced in a speech entitled *Philosophy of the Asiaticks*, delivered to the Asiatic Society, Calcutta, on the 20th of February, 1794, that Aristotle based his logic on Indian logic.

> Here I cannot refrain from introducing a singular tradition, which prevailed, according to the well-informed author of the *Dabistān*, in the *Panjāb* and in several *Persian* provinces, that, "among other *Indian* curiosities, which Callisthenes transmitted to his uncle, was a *technical system of logick*, which the *Brāhmens* had communicated to the inquisitive *Greek*," and which the *Mohammedan* writer supposes to have been the groundwork of the famous *Aristotelean* method ... [1]

The "inquisitive Greek" is Callisthenes, Aristotle's nephew, who visited India with Alexander the Great in the 4th century BC. Sir William was apparently quoting from the *Dabistan-i-Mazahib* (School of Manners) by Zulfaqar Mubed (c.1612-c.1670 AD), although Zulfaqar Mubed does not say exactly what Sir William claimed.[2]

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[1] Teignmouth 1807, **3**, 237-238.

[2] Zulfaqar Mubed 1843, 210. Zulfaqar Mubed describes the sixteen terms on reasoning (*tarka*) and says that these had been related to him by the Imám Arastú, who had taken them from an old work on logic. Zulfaqar Mubed then says: "The same doctrine was taught in Greece: in confirmation of this, the Persians say, that the science of logic which was diffused among them was, with other sciences, translated into the language of Yonia and Rumi, by order of King Secander, the worshipper of science, in the time of his conquest, and sent to Rumi."

In 1824, some thirty years after Sir William's announcement, Colebrooke "discovered" the Indian syllogism.[1] Colebrooke was both an orientalist and a mathematician. In a recent article, Ganeri describes the effect of Colebrooke's work:

> This essay became the standard reference for the next fifty years, and Colebrooke, through his influence in the Royal Society and the Royal Asiatic Society, and his contacts with such logicians as Boole, Hamilton, and De Morgan, was able to generate a great deal of interest in his discovery of the Indian syllogism, not only among Orientalists, but also within the English philosophical community.[2]

The syllogism that Colebrooke described was none other than the five-membered proof which is not a syllogism at all. Colebrooke and others like him interpreted Indian logic in terms of the current Western understanding of logic. The five-membered proof was therefore described as an Aristotelian syllogism, complete with its major, minor and middle terms. Other scholars rightly pointed out that the Indian proof does not conform to the requirements of a syllogism, but then they wrongly concluded on that basis that Indian logic was at fault. Ritter, for instance, said in 1846:

> One point alone appears certain, and that is, that they [the Indians] can lay but slight claims to accuracy of exposition. This is proved clearly enough by the form of their syllogism, which is made to consist of five instead of three parts.[3]

The tendency to describe Indian logic in Aristotelian terms was done not only to make it conform to Western ideas of logic, but also because support for traditional Indian disciplines had political ramifications during the days when Europeans controlled India. Some scholars were openly hostile towards Indian logic. Blakey, for instance, said in 1851:

> It is absurd to conceive that a logic can be of any value from a people who have not a single sound philosophical principle, nor any intellectual power whatever to work out a problem connected with human nature, in a manner that is at all rational or intelligent. Reasoning, at least in the higher forms of it among such semi-barbarous nations, must be at its lowest ebb; nor does there seem to be any intellectual stamina, in such races of men, to impart to it more vigour and rationality.[4]

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[1] Colebrooke 1824.

[2] Ganeri 1996, 4; and Ganeri 2001b, 5.

[3] Ritter 1838-46, **4**, 365.

[4] Blakey 1851, 380.

Mary Boole, by contrast, rallied to the defence of traditional Indian disciplines. She explained that her husband George and his colleagues had a high regard for Eastern learning:

> I do as George Boole and De Morgan did: I bow my head in reverent thankfulness to that mysterious East, whence come to us wafts of some transcendent power the nature of which we ourselves can hardly state in words.[1]

She also suggested that her husband and his colleagues had been influenced by Indian ideas:

> Think what must have been the effect of the intense Hinduizing of three such men as Babbage, De Morgan, and George Boole on the mathematical atmosphere of 1830-1865.[2]

The extent to which Babbage, Boole and De Morgan may have been influenced by Indian logic is unclear, but they were certainly well aware of it. De Morgan, who was born in India, said in 1860 that:

> The two races which have founded the mathematics, those of the Sanscrit and Greek languages, have been the two which have independently formed systems of logic.[3]

De Morgan was quite right in saying that Greek and Indian logic formed independently, although Europeans continued to describe Indian logic in terms of the Aristotelian syllogism. This gave Indian logic a Greek appearance and totally ignored its unique features. Müller was aware of this problem as early as 1853. He said that if he had described Indian logic using Aristotelian terminology then:

> All that is peculiar to Indian philosophy would have been eliminated, and the remainder would have looked like a clumsy imitation of Aristotle. ... Even such terms as conclusion or syllogism are inconvenient here, because they have with us an historical colouring, and throw a false light on the subject.[4]

The tendency to describe the Indian five-part proof in terms of Aristotelian logic still continues in modern times. Kitagawa noted the problem in 1960:

> ... it has been customary among scholars to interpret Indian logic using the terminology of Aristotelian logic and here lies a problem. If we want to learn something really new from a foreign system of thought, we must first try to understand it as it is. To interpret Indian logic using the terminology of Aristotelian logic, according to my opinion, is not to represent Indian logic as it is, but merely to review Aristotelian logic as applied to Indian logic.[5]

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[1] Boole 1901, 961.

[2] Boole 1901, 958.

[3] De Morgan 1966, 184 note 1.

[4] Müller 1853, 68.

[5] Kitagawa 1960, 390.

The main problem with explaining the Indian five-part proof in terms of the Aristotelian syllogism is that the Indian proof simply does not meet the requirements of a syllogism. When it is modified to make it resemble a syllogism, the result is not an accurate representation of Indian logic. Also, when it is assessed against the requirements of a syllogism, the five-part proof appears deficient. Further, all that is unique to Indian logic is discarded in the process and nothing new is learnt.

Many of the requirements unique to Indian logic are completely absent in modern descriptions simply because they have no counterparts in the Aristotelian model. An example of this is the fundamental rules for a proof. For instance, one rule states that the reason in a proof must serve a purpose, since a reason that serves no purpose proves nothing. The purpose of a reason is to remove doubt about the proposition, since a reason that removes no doubt serves no purpose. Thus, a basic requirement for the proposition in a proof is that it must be in doubt, because if there is no doubt regarding the proposition then there is no doubt to be removed by the reason. All that is required for the proposition to be in doubt is that it must not exclude the possibility of its being doubted. This does not mean that the proposition must be doubted by everybody at all times, only that it could be doubted by somebody at some time. A proposition like 'sound is impermanent' is therefore considered legitimate, whereas a proposition like 'sound is audible' is not, since this proposition excludes the possibility of its being doubted. The reason for this is that anyone who knows what sound is has no doubt that it is audible.

With the advent of modern logic during the late 19th and early 20th centuries, especially with the work of Frege (1848-1925) and Russell (1872-1970), the syllogism was abandoned as the model of logical excellence. Europeans then "discovered" that Indian logic should be understood in terms of the new mathematical logic. One of the earliest advocates of this position was Schayer. He argued in 1932 that it is a mistake to interpret the five-membered proof in terms of an Aristotelian syllogism:

> In summary, under no circumstances can we force the Indian syllogistic onto the Procrustean bed of the authentic Aristotelian syllogistic. ... Indology has to rid itself from the false suggestion that the Aristotelian or the traditional syllogistic provide a suitable basis for the interpretation of the problems of Nyāya philosophy.[1]

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[1] Schayer 1932, 95-96.

Schayer was a student of the great Polish logician Łukasiewicz and was no doubt inspired by the progress Łukasiewicz had made studying Greek logic from the standpoint of modern logic.[1] Schayer aimed to do the same with Indian logic. According to Schayer, knowledge of symbolic logic is absolutely essential to understanding Indian logic:

> For more than 50 years now there has been a strict scientific logic which really deserves its name; it is the symbolic (mathematical) logic which was anticipated by Leibniz, prepared for by Boole and Schröder, and founded by Frege and Russell. Without knowledge of the elements of this logic, historical research into Indian logic is unthinkable ... [2]

However, knowledge of modern mathematical logic is definitely not essential in order to understand Indian logic. Indian logic can be understood perfectly well when it is explained in its own terms. Of course, knowledge of mathematical logic is required in order to understand a description of Indian logic expressed in terms of mathematical logic, just as knowledge of English is required in order to understand a description of Indian logic written in English. But knowledge of mathematical logic is certainly not essential in order to understand Indian logic, just as knowledge of English is not essential to understand Indian logic. After all, the ancient Indian logicians were able to understand their own systems of logic without knowledge of modern mathematical logic.

Modern authors who present Indian logic in terms of Greek syllogisms or modern mathematical logic, presumably do so because they see advantages in expressing an unfamiliar system of proofs using the more familiar Greek paradigm, or in expressing the imprecise natural language formulations of Indian logic using a precise symbolic language. However, these benefits come at a price. The cost of using these explanatory models is that a misleading impression is easily created in the mind of the reader. In the case of using syllogisms, Indian proofs take on a Greek appearance when in fact Indian proofs are quite different from Greek syllogisms. In the case of using mathematical logic, Indian logic appears to be either a term logic or a propositional logic depending on what is taken as the values for variables, when in fact Indian logicians made no such distinctions. Modern interpreters can unwittingly colour their explanations of Indian logic in the eyes of their readers simply by using a particular explanatory model.

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[1] Łukasiewicz 1951.

[2] Schayer 1933b, 102-103.

This thesis therefore describes Indian logic in its own terms. This preserves the original style of the logic and avoids the pitfalls of colouring the presentation with characteristics that have no place in the Indian systems. Since the primary sources for this thesis are preserved in Sanskrit, Pāli, Chinese and Tibetan, there is the need to translate the logical terminology into English. Wherever possible, logical terms are translated using words that do not have recognised meanings in Western systems of logic. Thus, rather than use words like *major premiss* and *middle term*, words such as *example* and *application* are used. Another reason not to use Greek terminology when translating Indian logical terms concerns the question of Greek influence in Indian logic. The use of separate terminology when describing the Greek and Indian systems ensures that a clear distinction is maintained between these two.

One of the main arguments for Greek influence is that Indian logic did not pass through stages of development. The advocates of this position argue that the sudden appearance of logic in India, complete with all the subtleties that took centuries to develop amongst the Greeks, can be accounted for only by invoking Greek influence. A major part of this thesis is therefore devoted to describing the stages in the development of early Indian logic. Many modern studies ignore these early stages and focus on the later, more well-developed forms of Indian logic. Even when the early works are discussed, the logical material in them is often described, not as it actually appears in the original work, but according to interpretations that date from later times.

The methodology employed here is to describe the early forms of Indian logic exactly as they are found in the original works. This approach is essential, given the aims of the exercise. If the logical material in the early Indian works were described according to later Indian commentators then this would create the impression that Indian logic began its history in a well-developed form and did not pass through any stages of development. Since this thesis aims to show that Indian logic did pass through developmental stages, it is essential that the logical material in the early works is described exactly as it appears in the original documents.

This methodology does not mean that an assortment of extracts are simply translated and presented in a selected sequence so as to form an account of early Indian logic. Such an approach would be fraught with difficulties. This is because logic was not treated in isolation in ancient Indian works. Logical material is found in works on debate, as well as scattered through religious, philosophical and medical works. Information on logic is therefore mixed with material from various other disciplines. Any collection of translations would inevitably

include a lot of irrelevant and distracting material. Moreover, even those passages that are exclusively logical would not be easily understood from a translation. This is because the style of composition used in ancient India is extremely compact. The original works are therefore not at all self-explanatory.

The problems arising from of a compact writing style were addressed in India by producing explanatory commentaries. However, translations of passages from traditional commentaries would not be very helpful, firstly because these commentaries typically involve later interpretations, and secondly because commentaries are also constrained by the need to be faithful to the wording of the original documents. Any translation would therefore require not only an explanation of the logic involved but also an explanation showing how this logic can be understood from the often cryptic wording of the original passage. This justification would add an unnecessary layer of complexity to an already complex subject and increase the bulk of the thesis without providing much additional information on the logic.

The approach taken, therefore, is to explain early Indian logic without the limitations that would be imposed by attempting to preserve the idiosyncrasies of the source language or the compact writing style of the original documents. This preserves the style of early Indian logic, untainted by later Indian interpretations, and without the influence of Western explanatory models.

The logical material has been gathered from a wide variety of sources, ranging from the very earliest surviving records that describe the days of the Buddha (fifth century BC) down to the works of Nāgārjuna (second century AD). These sources also vary in terms of their subject matter, language and country of origin. The logically significant material scattered through these works has been separated from all other extraneous material and arranged both chronologically and by topic. This provides the reader with a simple introduction to ancient Indian logic and explains the differences between the Indian and Greek systems of logic.

## Autobiographical note

I began learning the Tibetan language in Nepal in 1976 and worked as a translator in the Dalai Lama's cultural centre, New Delhi, for seven years (1978-1985). During this time I studied Indian logic with Tibetan monks (who even today continue to study the ancient traditions of India). This traditional training in Indian logic was supplemented with studies (also at the Dalai Lama's cultural centre) in the philosophies, religions, history and literature of ancient India. Following this, I studied Western philosophy and modern mathematical logic

at the University of Canterbury, Christchurch, for five years (1986-1990) prior to beginning the research for this thesis in 1999.

My knowledge of Tibetan gives me first-hand access to Tibetan translations of Indian works. In some cases, Indian works survive only in Tibetan translation, the Sanskrit originals having been lost over the centuries. Even when a Sanskrit original is extant, the Tibetan translation is sometimes used to confirm or even help correct the Sanskrit edition where this has become corrupt through being copied by hand countless times over many centuries. The Tibetan translations of Indian works have become readily available only in the last 20 or 30 years. Before the existence of the Tibetan translations was known, it was thought that many of the great Indian works had been lost forever. Nowadays, with a greater number of original works or their translations coming to light, the understanding of ancient Indian logic is growing in the West.

The Indian tradition of composing explanatory commentaries was continued in Tibet and access to these Tibetan commentaries is invaluable in understanding Indian logic. The study of Indian logic is becoming increasingly popular in the West and modern commentaries on Indian logic are being published in Western languages. These are in effect a continuation of the Eastern tradition of composing explanatory commentaries on ancient texts and this thesis itself continues that tradition.

## 1.2    Summary of chapters

### 1.2.1    The earliest records (chapter two)

The earliest recorded system of debate and its associated logical material is found in the early Buddhist works and, to a lesser extent, in the early *Upaniṣads*.

**Early Buddhist works**

The early Buddhists works contain information on debate, lists of topics debated, a classification scheme for statements, and a fourfold scheme of predication nowadays called the tetralemma (*catuṣkoṭi*). A tetralemma consists of four statements where the subject is, is not, both is and is not, or neither is nor is not some predicate. Statements formed in these ways may be either true or false. If any one of the statements is true then the other three are false. Sometimes all four forms of a statement are said to be wrong, not because all four are false, but because true and false do not apply to some statements.

There are four types of statement: unambiguous, vague, ambiguous, and misleading statements. True and false do not apply to misleading statements. These four types of statement correspond to four types of question, i.e. those requiring a categorical, discriminating, counter-question, or no reply, respectively. Each type of question must be answered in the appropriate manner. It is not acceptable to be simply evasive about questions formed from misleading statements. Such questions must be recognised for what they are and then set aside for that reason.

There is no evidence of Greek influence in these ideas, although the tetralemma bears some resemblance to the ideas of the early Greek sceptics, especially those of Pyrrho. Greek sources record the fact that Pyrrho visited India with Alexander's army in 326-325 BC. The similarities between Pyrrho's ideas and the Indian tetralemma are unlikely to be the result of Pyrrho's influence on Indians. This is because the tetralemma has a long history of use in India that stretches back at least to the time of the Buddha, i.e. before Alexander's visit. McEvilley argues that Pyrrho's ideas are from earlier Greek philosophers, although he does admit that Pyrrho could have adopted some Indian ideas that agreed with his own views.

**Upaniṣads**

The early *Upaniṣads* contain information on debate that pre-dates the Buddha and there is evidence to suggest that the early Buddhists simply adopted this same tradition of debate. This shows that debate in India pre-dates the arrival of the Greeks and the indications are that it began even before Greek philosophy began. There is nothing to suggest that this tradition of debate, or its associated logic principles, were influenced by the Greeks. The main point here is that Greek influence can be ruled out on chronological grounds. The next chapter takes up examples of logic that date from a time after Alexander's historic visit, i.e. when Greek influence cannot be ruled out simply on chronological grounds.

## 1.2.2   Early works on debate (chapter three)

The literary sources used in this examination are four Buddhist works: the *Kathāvatthu* (Points of Controversy), the *Vijñānakāya* (Consciousness Group), the *Yamaka* (Pairs), and the *Milindapañha* (Milinda's Questions). These works cover the period from after Alexander's visit in the fourth century BC down to the first century BC. Greeks were present in India during these times and some Geeks became Buddhists, thus the opportunity for Greeks to influence Buddhist authors certainly existed during this period.

**Kathāvatthu**

The *Kathāvatthu* presents a series of arguments with a strict adherence to a dialectical method. The logical rules are not formulated, but the systematic procedure that is adhered to throughout the work suggests the existence of a rule-governed system. These debates are organised into two types: primary and secondary. Each primary debate consists of eight sections, arranged in four pairs. The first pair of debates are whether A is B, or A is not B. Each of these involves the same five-part argument. These five parts are: the way forward, the way back, the refutation, the application and the conclusion. This makes ten parts in the first pair of debates. Each of the remaining three pairs of sections consists of the same ten parts, the only difference being that the qualifications *everywhere*, *always*, and *in everything* are added. The pattern of argument used in the secondary debates is similar to that found in the primary debates.

**Vijñānakāya**

The same pattern of argument is also found in another work from this period, the *Vijñānakāya*. The *Vijñānakāya*, like the *Kathāvatthu*, uses a pattern of argument that involves five parts. The first of these five consists of two propositions that are either both true or both false. The second part argues that the acceptance of the first proposition implies the acceptance of the second. The third part says that it is wrong to accept one proposition but not the other. The fourth part argues that the denial of the second proposition implies the denial of the first, and the fifth part says the original position of accepting one proposition but not the other, is wrong. This form of argument was no doubt the accepted form of argument in the period when the *Kathāvatthu* and the *Vijñānakāya* were originally composed. There is no sign of anything resembling Greek logic in the *Kathāvatthu* or the *Vijñānakāya*. They display a style of argument that is typical of ancient India: it is long and cumbersome with frequent repetition.

**Ten-part arguments**

Ancient Indian logicians presented their arguments using ten components. There is an example of this in the *Kathāvatthu*. Another example of a ten-membered argument is described by the Jaina logician Bhadrabāhu, traditionally fourth century BC, but possibly first century BC. Bhadrabāhu's ten parts are: proposition, limitation of proposition, reason, limitation of reason, counter position, exclusion of counter position, example, doubt, exclusion of doubt and conclusion. The style of argument involving ten components is indicative of logic at a very early stage of its development in India.

Vātsyāyana (c.450-500 AD) also describes how some ancient Indian logicians formed arguments with ten parts. These ten are: inquiry, doubt, belief in the possibility of a solution, purpose, dispelling doubt, proposition, reason, instance, application and conclusion. The first five of these ten are psychological states associated with an argument. The last five are the actual statements used to construct an argument. In this system, all ten components are considered parts of the proof. In the work described in chapter four (see below) the same ten parts are found, except that they are separated into two sets of five.

**Yamaka**

Propositions played a major role in ancient Indian logic, but terms were considered more important. One work devoted to an analysis of terms is the *Yamaka*. The *Yamaka* clarifies the meanings of terms by taking pairs of terms and comparing one term with another using a regular procedure. The logical principles involved in this procedure are not formulated. There is no evidence of any Greek influence to be found in the *Yamaka*.

**Milindapañha**

The *Milindapañha* is a work in which Greeks play a prominent role. It is written in the form of a dialogue between King Milinda and a Buddhist monk named Nāgasena. King Milinda is none other than the Indo-Greek king Menander (c.160 BC). Some claim that Nāgasena is also a Greek. The *Milindapañha* does not contain any logical material and so the question of whether it has been influenced by Greek logic does not arise, although the work certainly shows that the Greeks were in India and interacted with the Buddhists.

## 1.2.3   The medical tradition (chapter four)

One of the earliest formulations of logical principles is preserved in the *Caraka Saṃhitā* (Caraka's Compendium), the oldest surviving work in the traditional Indian medical system (*Āyurveda*). It was written around the first or second century AD. The *Caraka Saṃhitā* contains a list of 44 technical terms used in logic and debate. Caraka's discussion of these terms describes debate in general, the structure of a proof, assertions, epistemology, types of statement, as well as faults, fallacies and points at which a debate is lost.

According to the *Caraka Saṃhitā*, a proof consists of five parts: a proposition, reason, example, application and conclusion. There is a separate psychological state associated with each part of a proof: doubt with the proposition, purpose with the reason, scepticism with the example, inquiry with the application, and resolution with the conclusion. These two sets of five terms correspond to the ten-part proof that Vātsyāyana described. The difference is that

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Caraka does not consider the five psychological states to be parts of the proof. Caraka describes another four epistemic terms: perception, inference, tradition, and analogy. These are the traditional four means of valid cognition (*pramāṇa*). Caraka describes the term rejoinder (*uttara*) as a contrary statement that denies similarity when similarity has been asserted, or vice versa. This term is probably the forerunner of two similar terms, refutation (*dūṣaṇa*) and futile rejoinder (*jāti*), each of which is described in the following two chapters.

Vidyābhūṣaṇa argues that the five-part proof was influenced by Aristotle's syllogism, but there is no evidence to support this claim. It is true that the terms from an Aristotelian syllogism can be used to form an Indian proof in a relatively straightforward way, and this process can also be reversed to form a syllogism from the elements in a proof. But this does not prove that the five-part proof was based on the Greek syllogism. The relevant members of a proof do not meet the criteria for a syllogism as defined by Aristotle. Caraka's proof and Aristotle's syllogism are in fact completely unrelated, and their respective requirements do not apply to one another. The proof described in the *Caraka Saṃhitā* is related to the early Indian systems of forming arguments with ten components. Caraka's five members of a proof (proposition, reason, example, application and conclusion), plus the five psychological states associated with a proof (doubt, purpose, scepticism, inquiry and resolution), correspond to the ten components that the ancient Indian logicians used. The five-membered proof is not unique to Caraka, as can be seen in the following chapters.

## 1.2.4   A lost Buddhist text (chapter five)

The *Upāyahṛdaya* (Essential Methods) was written around the first or second century AD. It is one of the earliest formulations of logical principles found in Buddhist literature. The work is preserved in Chinese translation and has come to notice only in the last hundred years. It is based on a list of terms as is the *Caraka Saṃhitā*. In fact, many of the same terms found in Caraka's list appear in the *Upāyahṛdaya*. There is nothing to directly link the two works, neither work quotes from or refers to the other in any way, but the similarity in terminology and the style of logic indicates that both authors are describing a common system. This same system is also found in the *Nyāya Sūtra* (Logic Aphorisms), described in the next chapter. The *Upāyahṛdaya* therefore provides an important link in the development in Indian logic between the *Caraka Saṃhitā* and the *Nyāya Sūtra*. The *Upāyahṛdaya* was written at a time in Indian history when the possibility for Greek influence certainly existed, but there is no evidence of any Greek influence to be found in the *Upāyahṛdaya*. The work

presents a slightly more developed form of the same system that Caraka describes – a system that has its origins in the Indian tradition of debate, not in anything introduced from Greece.

The *Upāyahṛdaya* discusses ten terms: instance (or example), theory, commendable speech, defective speech, inference, appropriate statements, fallacious reasons, adoption of a fallacious reason, points of defeat and refutations. The first two terms are described in the very same ways as they are in the *Caraka Saṃhitā*. The next two, commendable and defective speech, are practically the same as in Caraka's explanation. Both the *Caraka Saṃhitā* and the *Upāyahṛdaya* divide inference into three, but the *Upāyahṛdaya* classifies inference based on the way in which the evidence is related to the conclusion, whereas Caraka classifies inference based on time. Caraka makes no mention of appropriate speech. Fallacious reasons are divided into eight, all eight of which are also found in the *Caraka Saṃhitā*, although Caraka describes only three of them as fallacious reasons, or fallacies (*ahetu*) as he calls them. The adoption of a fallacious reason is not mentioned by Caraka. There is general agreement on the points of defeat. Caraka lists fifteen points of defeat, seven of which appear amongst the twenty points of defeat described in the *Upāyahṛdaya*.

The five-part proof is not discussed in the *Upāyahṛdaya*, although the author is certainly well aware of proofs consisting of these five parts since he discusses one such proof in the fourth chapter of the *Upāyahṛdaya*. This chapter is devoted to a discussion of twenty refutations (*dūṣaṇa*). Caraka's description of rejoinders (*uttara*) is very similar to these refutations. Caraka does not describe any types of rejoinder, but two of Caraka's terms appear as the names of refutations in the *Upāyahṛdaya*. The discussion on these refutations provides valuable information on the conditions that the author of the *Upāyahṛdaya* considers necessary for a proof to successfully establish its conclusion. The first three refutations argue against the view that a proposition is established on the basis that the example and the subject share the property specified in the reason. The next six refutations argue that the reason does not establish the proposition in one particular proof, i.e. 'the self is permanent, because of being imperceptible by the senses, like ether'. The remaining refutations describe other faults related to the subject in the same proof.

The system of logic described in the *Upāyahṛdaya* is a more well-developed version of the one that appears in the *Caraka Saṃhitā*. One significant difference between these two works is that the *Upāyahṛdaya* discusses twenty refutations which are conspicuously absent in the *Caraka Saṃhitā*. These are much discussed in later Indian works.

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There is no Greek influence in the *Upāyahṛdaya*. It simply follows the same system of logic and debate that is found in the *Caraka Saṃhitā*. The *Upāyahṛdaya* was written by a Buddhist whereas Caraka follows the Sāṃkhya system, but their respective treatments of logic are clearly part of the same system. This same system of logic and debate is also found in the next two works.

## 1.2.5   Ancient Indian philosophy (chapter six)

**Background**

The *Vaiśeṣika Sūtra* (Category Aphorisms) and the *Nyāya Sūtra* (Logic Aphorisms) share a common system of metaphysics and their respective schools of thought later merged into one. They date from around the first or second century AD, with the *Vaiśeṣika Sūtra* probably being the older of the two. The *Vaiśeṣika Sūtra* contains only a small amount of material on logic. This work has been included here because of its description of inference. The *Nyāya Sūtra* deals extensively with logic and debate. It is based on a list of technical terms that resembles the list found in the *Caraka Saṃhitā*. The five-part proof is traditionally associated with the *Nyāya Sūtra*, although its origins actually lie in the ancient system of debate that used ten-step arguments.

McEvilley argues that there was Greek influence in the development of the five-part proof. His main argument supporting this claim is that the five-part proof appears in the *Nyāya Sūtra* complete and without any evidence of prior developmental stages. The analysis carried out in this chapter shows that the five-part proof evolved out of an earlier system of debate without outside influence. First the description of inference in the *Vaiśeṣika Sūtra* is compared with similar descriptions in the *Upāyahṛdaya* and in the *Caraka Saṃhitā*. Next the logical material in the *Nyāya Sūtra* is compared with similar material in the *Vaiśeṣika Sūtra*, the *Upāyahṛdaya* and the *Caraka Saṃhitā*. All the terms that have counterparts in earlier works are noted in the order in which they occur in the *Nyāya Sūtra*. There are nearly 90 terms described in the *Nyāya Sūtra* and over half of these have counterparts in earlier Indian works. This shows that the general system of logic described in the *Nyāya Sūtra*, and the five-membered proof in particular, are not new to the *Nyāya Sūtra* but came from an earlier Indian tradition. This demolishes McEvilley's main argument that Greek influence is required in order to explain the advent of the five-membered proof in the *Nyāya Sūtra*.

**Vaiśeṣika Sūtra**

The *Vaiśeṣika Sūtra* describes six categories: substance, attribute, action, universal, particularity and inherence. These same six categories are also found in the *Caraka Saṃhitā*. The *Vaiśeṣika Sūtra* does not discuss the five-membered proof, nor does it describe a list of logical terms. The logical significance of this work lies in its description of inference. The author mentions only two means of valid cognition, perception and inference, whereas both the *Caraka Saṃhitā* and the *Upāyahṛdaya* accept four means of valid cognition. Its definition of perception is the same as that found in the *Caraka Saṃhitā*.

The *Caraka Saṃhitā* classifies inference into three types based on time and the *Upāyahṛdaya* also classified inference into three types, but the *Upāyahṛdaya* bases its classification on the way in which the evidence is related to the conclusion. The *Vaiśeṣika Sūtra*, by contrast, first classifies inference into two and then makes an in-depth analysis of the relations between objects. The significance of relationship is that it provides the justification for inference. That is, inference occurs provided the reason is related to the conclusion. If this relationship fails to hold then the reason is incorrect and no inference occurs. This description of inference has more in common with the *Upāyahṛdaya* than with the *Caraka Saṃhitā*. There is nothing in this discussion to suggest any Greek influence.

**Nyāya Sūtra**

The *Vaiśeṣika Sūtra* presents its discussion on inference within a system of metaphysics that advocates real relationships between real objects. The same system of metaphysics is also followed in the *Nyāya Sūtra*. The *Nyāya Sūtra* discusses logic and debate under sixteen terms. These are: means of valid cognition, objects of valid cognition, doubt, purpose, example, theory, members of a proof, reasoning, decision, debate, disputation, wrangle, fallacious reason, equivocation, futile rejoinder and points of defeat. When the discussion on these sixteen terms is compared with discussions on similar terms in other Indian works, it is clear that there are Indian precedents for the logical material found in the *Nyāya Sūtra*.

The first of the sixteen terms in the *Nyāya Sūtra*, *the means of valid cognition*, is divided into four: perception, inference, analogy and testimony. The same four are also found in both the *Caraka Saṃhitā* and the *Upāyahṛdaya*, whereas the *Vaiśeṣika Sūtra* accepts only two: perception and inference. The *Nyāya Sūtra* divides inference into three. This division is interpreted in two ways: firstly, as a division based on time as in the *Caraka Saṃhitā*, and secondly, as a division based on the way in which the evidence is related to the conclusion, as

in the *Upāyahṛdaya* and the *Vaiśeṣika Sūtra*. The second interpretation is also similar to the division of inference found in the ancient Sāṃhkya system as it is described in the *Ṣaṣṭitantra* (Science of Sixty Topics) by Vṛṣagaṇa (c.100-300 AD), and also in the Jaina work called the *Anuyogadvāra* (Means of Examination) by Āryarakṣita (c.100 AD). (The names for these three types of inference appear to have originated in the ancient Mīmāṃsā school. They can be found in the *Mīmāṃsā Sūtra* (c. second century BC) which is attributed to Jaimini.)

The second term discussed in the *Nyāya Sūtra* is *object of valid cognition*. This term is not found in the other works discussed above, although some of the material discussed in this section of the *Nyāya Sūtra* may have Buddhist origins. The *Nyāya Sūtra* describes the same five-part proof (under the seventh term, *member*) as Caraka describes. It also discusses the same five psychological states associated with the five-part proof. These are: term three *doubt*, term four *purpose*, term five *example*, term eight *reasoning* and term nine *decision*. The association between these five and the five members of a proof is not made clear. The *Nyāya Sūtra* divides the sixth term, *theory*, into four – the same four that are found in both the *Upāyahṛdaya* and the *Caraka Saṃhitā*.

The next three, *debate*, *disputation* and *wrangle* (terms ten, eleven and twelve) are practically the same as those in the *Caraka Saṃhitā*, except that Caraka classifies the latter two terms (disputation and wrangle) as subdivisions of the first (debate), whereas the *Nyāya Sūtra* describes all three as independent terms. The *Vaiśeṣika Sūtra*, the *Upāyahṛdaya* and the *Caraka Saṃhitā* all describe various types of incorrect reason. There are many points in common between their respective descriptions and the description of *fallacious reason* (the thirteenth term) in the *Nyāya Sūtra*. The *Nyāya Sūtra* discusses three types of *equivocation* (term fourteen) and argues against an opponent who claims that the third type of equivocation is included in the first type. The *Caraka Saṃhitā* and the *Upāyahṛdaya* both divide equivocation into two types, and Kajiyama claims that the opponent referred to in the *Nyāya Sūtra* is the author of the *Upāyahṛdaya*. The *Vaiśeṣika Sūtra* does not discuss equivocation.

The fifteenth term in the *Nyāya Sūtra* is *futile rejoinder*. Almost half of the twenty-four futile rejoinders listed in the *Nyāya Sūtra* are also found in the *Upāyahṛdaya* as refutations. The refutations in the *Upāyahṛdaya* appear to have been renamed futile rejoinders in the *Nyāya Sūtra*. These two terms probably have their origins in what Caraka calls a rejoinder. Caraka describes rejoinder as a statement that denies similarity when similarity has been

asserted, or vice versa. The *Nyāya Sūtra* describes futile rejoinder in a similar way, i.e. as an objection by means of similarity and dissimilarity.

The sixteenth term in the *Nyāya Sūtra* is *point of defeat*. Approximately twenty points of defeat are listed in the *Upāyahṛdaya*. Half of these also appear in the *Nyāya Sūtra* as points of defeat. The *Caraka Saṃhitā* lists fifteen points of defeat. Two thirds of the points of defeat listed in the *Nyāya Sūtra* are also found in the *Caraka Saṃhitā*. There are no discussions on futile rejoinders or points of defeat in the *Vaiśeṣika Sūtra*.

There are over 70 terms described in the *Nyāya Sūtra* as subdivisions of the sixteen main terms. About half of these are also found in the *Caraka Saṃhitā*, often with similar descriptions although not always classified in exactly the same ways. The logical material in the *Caraka Saṃhitā* and the *Upāyahṛdaya* establishes that there were prior stages in the development of the logical material found in the *Nyāya Sūtra*. There is no evidence that the *Nyāya Sūtra* used either the *Caraka Saṃhitā* or the *Upāyahṛdaya* as its source, but the similarities between these works make it clear that they all follow the very same tradition of logic and debate. They all use very similar terminology and generally describe it in similar ways. Many of the futile rejoinders discussed in the *Nyāya Sūtra* are replies to objections raised in the *Upāyahṛdaya*. Given this fact and the degree of organisation in each work, the probable chronological order of these three works is first the *Caraka Saṃhitā*, followed by the *Upāyahṛdaya* and then the *Nyāya Sūtra* last.

**Greek influence**

There is nothing in the *Nyāya Sūtra* that provides any evidence of Greek influence. In fact, the relationship it has with earlier Indian works indicates that its ideas on logic arose from the Indian tradition of debate. This undermines the need to invoke Greek influence in order to explain the logical material in the *Nyāya Sūtra*. McEvilley accepts that the five-part proof did not come from the Aristotelian syllogism as claimed by Vidyābhūṣaṇa, but he still insists that it came from the Greeks. He argues that the five-part proof came from the Epicurean system of logic. McEvilley's main reasons for this are that the five-part proof as described in the *Nyāya Sūtra* is without precedent in the Indian tradition and the only known source in the world at that time was the Epicurean system. Further, he says that Epicurean teachers were active in Afghanistan and quite possibly in northwest India also. This argument is countered by two points: firstly there is no mention of a five-part proof in any extant Greek work, and secondly, there are Indian sources for the five-part proof that pre-date the *Nyāya*

*Sūtra*. These sources support the view that the five-part proof evolved from the ten-part proof. The ten-part proof is itself a product of the tradition of debate in ancient India.

## 1.2.6 Buddhist dialectics (chapter seven)

**Nāgārjuna**

The term *Buddhist dialectics* refers to the second of the two types of logic in ancient India. The first type of logic, described in the *Nyāya Sūtra*, focused on establishing matters of fact using structured proofs governed by rules. The second type of logic focused on refuting matters of fact using a system of dialectics that employs consequences (*prasaṅga*). The most well-known representative of the second type of logic is Nāgārjuna. McEvilley claims that the advent of Nāgārjuna's system of dialectics was due to Greek influence. His reasons for this are the same as those he used to argue for Greek influence in the first type of logic, i.e. there is no evidence of developmental stages for Buddhist dialectics within Indian literature, there are Greek precedents for Buddhist dialectics and the Greeks were in India at the right time to influence Buddhist logicians. This chapter describes Nāgārjuna's system of dialectics and shows that it had developmental stages within the Indian logical tradition. This removes the need to invoke Greek influence in order to account for the advent of Buddhist dialectics.

**Vaidalya Prakaraṇa**

McEvilley claims that Nāgārjuna is unaware of the five-membered proof and that if he had known about it he could not have avoided a dialectical confrontation with it. However, Nāgārjuna did exactly this in his *Vaidalya Prakaraṇa* (Commentary on the Pulverization). McEvilley makes no mention of this work. In the *Vaidalya Prakaraṇa*, Nāgārjuna refutes each of the sixteen terms described in the *Nyāya Sūtra*. In particular, he spends seventeen *sūtras* arguing against the five-membered proof. First he argues against the five members jointly, then against each member individually, and finally he rebuts a defence of the five members. This shows that, contrary to what McEvilley claims, Nāgārjuna is very well aware of the five-membered proof.

**Dialectics**

Nāgārjuna's method of refuting the five members of a proof, and the other terms in the *Nyāya Sūtra*, involves forming conditionals with the opponent's position as the antecedent and with an unacceptable position as the consequent. Nāgārjuna uses these conditionals to argue that if a position is accepted then one of a limited number of consequents must also be accepted. He then argues that each consequent is unacceptable to his opponent and thus the

original position must be abandoned. The characteristics of this style of argument are that it involves refutation only and employs consequences. There are precedents for each of these characteristics in the Indian logical tradition.

Regarding the first characteristic, there are precedents for the style of argument that involves refutation only. Both the *Nyāya Sūtra* and the *Caraka Saṃhitā* describe the term wrangle (*vitaṇḍā*) as debate where each party endeavours to refute an opponent's position without attempting to establish their own. The debates in both the *Kathāvatthu* and the *Vijñānakāya* are also negative in the sense that they attempt to refute an opponent without attempting to establish an alternate position. Further, the so-called hair-splitters who lived in the days of the Buddha devised arguments so that no matter what position an opponent took, they had reasons to refute it.

Regarding the second characteristic, the Indian precedents for using consequences (*prasaṅga*) are the futile rejoinders (*jāti*) in the *Nyāya Sūtra*, the refutations (*dūṣaṇa*) in the *Upāyahṛdaya*, and the rejoinders (*uttara*) in the *Caraka Saṃhitā*. The works that contain precedents for the style of argument involving consequences and refutation only show that these two aspects of Nāgārjuna's system of dialectics had developmental stages in the Indian logical tradition and this counters the need to invoke Greek influence in order to account for Nāgārjuna's use of them. Even ignoring these precedents, it is an extremely weak argument to claim that Indians could not possibly have come up with a negative style of argument using consequences, and this form of argument must therefore have been introduced by the Greeks.

### Mūla Madhyamaka Kārika

McEvilley's claims regarding the origins of Buddhist dialectics focus on Nāgārjuna's famous *Mūla Madhyamaka Kārika* (Fundamental Verses on the Middle Way). McEvilley argues that Nāgārjuna's system of dialectics has Greek origins since it appears in his *Mūla Madhyamaka Kārika* without prior developmental stages. Also, the philosophical view that Nāgārjuna argues against in this work has Greek origins since it appears in the Sarvāstavādin *Abhidharma* works without prior developmental stages. Further, the controversy between Nāgārjuna and the Sarvāstavādin *Abhidharma* view reflect a similar controversy in the Greek tradition. However, Indian precedents exist for both Nāgārjuna's dialectics and for the view he opposes, and thus there is no need to invoke Greek influence in order to account for these.

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**Abhidharma**

Nāgārjuna's main opponents in the *Mūla Madhyamaka Kārika* are Buddhists who follow a body of literature called the *Abhidharma* (higher knowledge). The *Abhidharma* works originally evolved from lists of terms that date from the days of the Buddha, i.e. before the Greeks first arrived in India. These lists were intended to provide definitive summaries of the Buddha's teachings. Explanatory material was added to form various expositions and these works formed the *Abhidharma* sections of the various versions of the Buddhist Canon. Two complete *Abhidharma* collections are extant: one that belongs to the Sarvāstivādin school of northwest India, and another that belongs to the Theravādin school of south-east Asia. These two schools owe their origins to the missions Aśoka sent to their respective areas in the middle of the third century BC. Aśoka's missions took with them a common core of ideas that is now found in both *Abhidharma* traditions. One common idea is that elements of existence (*dharmas*) possess an essential nature (Sanskrit: *svabhāva*, Pāli: *sabhāva*). This is the view that Nāgārjuna argues against in his *Mūla Madhyamaka Kārika*.

According to McEvilley, it is the Sarvāstivādins who claim that elements of existence possess an essential nature and they do so because of Greek influence. The view of an essential nature certainly exists in the Sarvāstivādin tradition since it is described in such works as the *Vijñānakāya* (Consciousness Group), the *Mahāvibhāṣā* (Great Commentary), the *Abhidharmahṛdaya* (Essence of Higher Knowledge) and the *Abhidharmakośa* (Treasury of Higher Knowledge). However, the same view also appears in the Theravādin tradition. Evidence for this is found in the *Paṭisambhidāmagga* (Path of Discrimination), the *Buddhavaṃsa* (Lineage of the Buddhas), the *Peṭakopadesa* (Instructions to Students of the Piṭakas), as well as in a number of Theravādin commentaries. Since this view is common to both the Sarvāstivāda and the Theravāda schools, it is most likely part of a common core of ideas that existed amongst Indian Buddhists before the independent development of these two schools. This shows that Nāgārjuna was not reacting to a Greek idea in the Sarvāstivādin *Abhidharma*, but was in fact arguing against an Indian theory held by the followers of various *Abhidharma* traditions.

**Tetralemma**

McEvilley also claims that the dialectical method that Nāgārjuna uses to refute the views of the *Abhidharma* tradition came from the Greeks since it appears in the *Mūla Madhyamaka Kārika* without prior developmental stages. A distinctive feature of this method is the fourfold scheme of predication (*catuṣkoṭi*), nowadays called the tetralemma. McEvilley

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points out that a similar fourfold scheme was taught by Pyrrho of Elis (c.365-c.275 BC). However, the tetralemma was used in India as early as the days of the Buddha (discussed in chapter two). McEvilley concedes that there may be an Indian version of the tetralemma, but claims that Nāgārjuna's interpretation of it as a negation was due to Greek influence. The problem with this claim is that the tetralemma is not a negation, nor was it redefined into a negation in the Mādhyamika school as McEvilley claims. Nāgārjuna uses the tetralemma both positively and negatively. The tetralemma is in fact a fourfold scheme of predication, and it has a history of use in India dating back to the days before the Greeks first arrived in India.

### Eleatics

McEvilley also claims that Nāgārjuna's arguments are similar to those of the Eleatics, suggesting thereby that Nāgārjuna's arguments against motion, for instance, have a Greek origin. Whatever similarities this form of argument may have with Zeno's arguments, it is not without precedent in the Indian tradition. Bhattacharya describes how Nāgārjuna's arguments are based on grammatical concepts that date back to Patañjali (c.2nd century BC), if not to Pāṇini himself (c.350 BC), and Hayes agrees. Warder notes that similar arguments are found in the *Paṭisambhidāmagga*. The date of the *Paṭisambhidāmagga* is probably 349 BC, i.e. before Alexander's visit in 326-325 BC. The combination of this evidence completely demolishes McEvilley's claim that the array of Greek dialectical forms turns up in India, mature, complete, and without evidence of developmental stages, in the school of Buddhist thought called Mādhyamika.

## 1.2.7   Greek works in India (chapter eight)

### Astronomy

The final chapter considers the argument that the Greeks are known to have influenced Indian astronomy and thus they must have influenced Indian logic as well. This is supported by the fact that there was a massive amount of trade between Alexandria and India for centuries. The constant and frequent voyages between Indian ports and the Red Sea ports serving Alexandria made it possible for Greek works on astronomy to be taken to India and thus Greek works on logic may have been taken to India also. However, this argument does not prove that Greeks definitely influenced Indian logic. It shows only that they could have done so and that claims of Greek influence in Indian logic should therefore be taken seriously.

McEvilley claims that Greek works on logic must have found their way into India through the sea trade that existed between India and Alexandria during the first two or three

centuries AD. These trade links have been documented in Greek records and confirmed by archaeological discoveries in India. Greek works on astronomy were apparently taken to India in this way and, according to McEvilley, Greek works on logic most probably were also. However, there is no evidence to support this claim.

In the case of Indian astronomy, there is good evidence for Greek influence. This can be seen in the acknowledgements by Indian authors, and in the references to westerners and to astronomical works with Greek-sounding titles. Also, there is some correspondence between the concepts and techniques used in Greek and Indian systems of astronomy. However, if Indian logic had been influenced in the same way then there should be similar types of evidence to support this. But there is no such evidence.

This thesis does not prove that there is absolutely no Greek influence in Indian logic. What it proves is that the claim that logic appeared in Indian literature complete and without developmental stages, is false. It does this by setting out all the stages in the development of Indian logic in chronological order from the very earliest records up to the time of the *Nyāya Sūtra* and Nāgārjuna. This shows that McEvilley's argument that only Greek influence can account for logic in India is not convincing. Thus the case for Greek influence in Indian logic remains unproven. Further, the existence of developmental stages dating back to the days before the Greeks first arrived in India makes it highly likely that Indian logic developed completely independent of any Greek influence.

## 1.3    Technical notes

These notes explain the conventions used in the thesis. The presentation should be self-explanatory for most readers since it does not assume any knowledge of Indian logic, nor knowledge of any of the languages, philosophies, religions, history or literature of India. All significant terms are described on the first occurrence of their use and their Sanskrit or Pāli equivalents provided where appropriate. Indian language titles are also translated into English on the occasion of their first use. All the sources are identified and referenced in footnotes, and full bibliographic details are listed in the bibliography at the end of the work.

### Bibliography

The bibliography is in two sections: traditional sources and modern sources. The traditional sources are listed alphabetically by title. Many of these titles remain in the

language in which the work is most commonly known. A translation of the title follows in brackets. English language translations are listed under each title in chronological order.

The modern sources are listed alphabetically by author in the normal manner. English translations of traditional sources also appear in the list of modern sources. Where more than one publication year is given for a source, the underlined year indicates the edition used in references.

## Quotations

Quotations from traditional sources are referenced in footnotes giving details of the original source and the source of the English translation used. The most recent English translations are normally used. Some quotations are presented in a paraphrased form where the original quotation is too long to quote in full.

## Square brackets in translations

Square brackets enclose material added by the translator even when round brackets have been used in the edition from which the quotation was taken.

# Chapter two: The earliest records

## Introduction

This chapter examines the origins of Indian logic. The literary sources for this examination are the works found in the various versions of the Buddhist Canon. These works describe the events of the Buddha's life which were originally preserved in an oral tradition and then later set down in writing. Although these traditional accounts were not written during the Buddha's lifetime, they are nevertheless, the oldest records available that describe the philosophical thinking engaged in by the Buddha and his contemporaries. These works contain information about debate, lists of topics debated, a classification scheme for statements, and a fourfold scheme of predication nowadays called the tetralemma (*catuṣkoṭi*). There is no Greek influence in this material, although the early Greek sceptics had ideas that appear to be similar to the Indian tetralemma.

## 2.1    Early Indian logic

### 2.1.1   Background

**Buddha**

The Buddha's dates are the subject of some uncertainty,[1] but many believe he died around 486 BC. Some claim the date is earlier while others claim it is later. If 486 BC is the correct date then the Buddha would have been a contemporary of Pythagoras of Samos (c.570-c.497 BC) and of Heraclitus of Ephesus (c.540-c.480 BC). This date also means that the Buddha would have died 16 years before Socrates (470-399 BC) was born and 58 years before Plato (428-348 BC) was born. Aristotle (384-322 BC) and Pyrrho of Elis (365-275 BC) would have been born a century or more after the Buddha. Many Greeks came to north-western parts of ancient India when Alexander the Great (356-323 BC) visited in 326-325 BC, but this would have been some 160 years after the Buddha. Those who argue for a later date still place the Buddha's death well before Alexander's visit. Whatever the correct date may be, the Buddha probably lived before the Greeks came to India and before many of the famous Greek logicians were born.

The traditional accounts of the Buddha's life were originally preserved in an oral tradition and then set down in writing some centuries after Alexander's visit. This leaves open

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[1] For a review of the Buddha's dates see Bechert 1991-97.

the possibility that Greek ideas may have been incorporated into the oral tradition and then included in these early Buddhist works appearing as purely Indian ideas dating from a time well before the Greeks came to India.

There are various versions of the Buddhist Canon preserved in a number of Asian languages. Some of the works in these collections describe the way logic was understood in ancient India before Alexander's historic visit. A distinctive feature of this logic is the fourfold scheme of predication or tetralemma. The tetralemma is used to express the ways in which the predicate applies to the subject in a statement. It is commonly found in these early Buddhist works and it was subsequently used by Buddhist philosophers in their analyses of philosophical issues. The origin of the tetralemma is the subject of dispute. The tetralemma also exists in the Greek philosophical tradition and it is argued that its appearance in the Indian philosophical tradition was due to Greek influence. Alternatively, it may have an Indian origin, either amongst the early Buddhists or amongst the Buddha's contemporaries, possibly Sañjaya.

## Sañjaya

Sañjaya Belaṭṭhiputta (Saṃjayin Vairaṭīputra)[1] is mentioned in a number of early Buddhist works as one of the six famous teachers of ancient India. These works suggest that Sañjaya was an older contemporary of the Buddha. The *Kosala Saṃyutta* (Connected Discourses with the Kosalan)[2] describes Sañjaya and five other theorizers (*titthakarā*)[3] as being the founders of well-established schools when the Buddha was still young and new to the life of a teacher. Another work, the *Sutta Nipāta* (Collection of Suttas),[4] lists Sañjaya as one of the six famous teachers, all of whom are described as being very old at a time when the Buddha was both young in years and new to his life as a teacher. In the *Catuṣpariṣatsūtra* (Foundation of the Buddhist Order),[5] it mentions that Sañjaya had recently died when the Buddha was still relatively new to his life as a teacher. In the *Mahāsakuludāyi Sutta* (Greater Discourse to Sakuludāyin),[6] the wanderer Sakuludāyin explains to the Buddha how the

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[1] See Vogel 1970, 25 note 29.

[2] Sutta 3 of *Saṃyutta Nikāya*, trans. Rhys Davids 1917-30, **1**, 93-127; Bodhi 2000, **1**, 164-194.

[3] See Rhys Davids 1917-30, **1**, 93 note 3.

[4] *Sutta Nipāta* (3.6), trans. Hare 1945, 75-84; Norman 1992, 55-61.

[5] Trans. Kloppenborg 1973, 91.

[6] Sutta 77 of *Majjhima Nikāya*, trans. Horner 1954-59, **2**, 203-222; Bodhi 1995, 629-647.

followers of Sañjaya and the other five teachers were often in dispute with their leaders. The issues over which they disagreed are not mentioned.

## Fourfold scheme of denial

No works from Sañjaya's school survive today. What little is known about his ideas is learnt from early Buddhist works. Sañjaya is renowned for his refusal to accept any position on an issue. There are examples of this in an early Buddhist work entitled the *Fruits of the Homeless Life*. MacQueen lists seven versions of this work.[1] In the Pāli version, entitled the *Sāmaññaphala Sutta*,[2] a king asks Sañjaya whether there is another world (life after death), whether there are any results experienced from good and bad deeds (*karma*), and whether a Tathāgata continues to exist after death. "Tathāgata" is probably a pre-Buddhist term and is sometimes translated as "saint" (literally, one who has thus gone). In reply to these questions:

> Sañjaya Belaṭṭhiputta said: "If you ask me: 'Is there another world?' if I thought so, I would say so. But I don't think so. [1] I don't say it is so, and [2] I don't say otherwise. [3] I don't say it is not, and [4] I don't not say it is not.

What is significant here is that Sañjaya replies to the question using a fourfold scheme of denial. The same passage continues:

> If you ask: 'Isn't there another world?' ... 'Both?' ... 'Neither?' ... 'Is there fruit and result of good and bad deeds?' 'Isn't there?' ... 'Both?' ... 'Neither?' ... 'Does the Tathāgata exist after death?' 'Does he not?' ... 'Both?' ... 'Neither?' ... I don't not say it is not."[3]

After asking the first question (Is there another world?) in the positive, there is a second question in the negative: 'Isn't there another world?' to which Sañjaya replies with the same fourfold scheme of denial (indicated by the ellipse) as he used to answer the first question. Since Sañjaya has refused to accept either that there is or that there is not another world, two more questions are asked: 'Is there both another world and not another world?' and 'Is there neither another world nor not another world?' Sañjaya also replies to these two questions with the same fourfold scheme of denial. The same pattern of four questions is used again to ask Sañjaya whether he accepts that there are results from good and bad deeds and whether he accepts the continued existence of the Tathāgata after death. Sañjaya replies to these questions with the same fourfold scheme of denial that he used to answer the former questions.

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[1] MacQueen 1988, 12-18.

[2] Sutta 2 of *Dīgha Nikāya*, trans. Rhys Davids, Rhys Davids 1899-1921, **1**, 65-95; Walshe 1987, 91-109.

[3] *Dīgha Nikāya* (i 58-59), trans. Walshe 1987, 97.

The Sanskrit title of the *Fruits of the Homeless Life* is the *Śrāmaṇyaphala Sūtra*. There are four versions of this work extant in Chinese translation. In one version, entitled the *Sha Men Kuo Ching*,[1] the same passage occurs in a slightly different form:

> Great King, if asked: "Is there present and visible resultant fruit and reward for the śramaṇa's life?" I would reply to the matter as follows: "[1] As for this matter, it is factual; [2] this matter is otherwise. [3] This matter is not otherwise and [4] not not otherwise."

> Great King, if asked: "Is there no present and visible resultant fruit and reward for the śramaṇa's life?" I would reply to the matter as follows: "[1] As for this matter, it is factual; [2] this matter is otherwise. [3] This matter is not otherwise and [4] not not otherwise."

> Great King, if asked: "Does there both exist and not exist present and visible resultant fruit and reward for the śramaṇa's life?" I would reply to the matter as follows: "[1] As for this matter, it is factual; [2] this matter is otherwise. [3] This matter is not otherwise and [4] not not otherwise."

> Great King, if asked: "Does there neither exist and not exist present and visible resultant fruit and reward for the śramaṇa's life?" I would reply to the matter as follows: "[1] As for this matter, it is factual; [2] this matter is otherwise. [3] This matter is not otherwise and [4] not not otherwise."[2]

In this passage, Sañjaya asks about the rewards for the *śramaṇa's* life in four different ways and answers each form of the question in four ways. In the Pāli version of this passage, Sañjaya uses a fourfold scheme of denial in reply to each of the four questions, i.e. (1) I don't say it is so, and (2) I don't say otherwise. (3) I don't say it is not, and (4) I don't not say it is not. In the Chinese version quoted above, Sañjaya uses a similar fourfold scheme to reply, but each alternative is accepted rather than denied, i.e. (1) As for this matter, it is factual; (2) this matter is otherwise. (3) This matter is not otherwise and (4) not not otherwise. MacQueen argues that the Pāli version of the work has "preserved the most ancient state of the text."[3]

The fourfold pattern used to form the four questions is also used to form sets of four statements. For instance, regarding the continued existence of the Tathāgata after death, the set of four statements is:

1. The Tathāgata does exist after death
2. The Tathāgata does not exist after death
3. The Tathāgata both does and does not exist after death
4. The Tathāgata neither does nor does not exist after death

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[1] Sūtra 27 of the Chinese *Dīgha Āgama*, trans. MacQueen 1988, 30-50.

[2] Trans. MacQueen 1988, 43.

[3] MacQueen 1988, 195.

Using 'A' to stand for the predicate, the forms of these four statements are:

1. The subject is A
2. The subject is not A
3. The subject is both A and not A
4. The subject is neither A nor not A

The predicate in these four statements is (1) affirmed, (2) denied, (3) both affirmed and denied, and (4) neither affirmed nor denied of the subject. The subject in each of these four statements remains the same. This fourfold scheme of predication is the famous *catuṣkoṭi*, nowadays called variously the tetralemma, the quadrilemma, the fourfold negation and the four-cornered negation. It consists of four statements which taken together exhaust the ways in which the predicate applies to the subject.

**Fivefold scheme of denial**

There is another scheme of denial which can be interpreted as a fivefold scheme, but this scheme has not produced a corresponding fivefold scheme of predication. An example of the fivefold scheme of denial appears in the *Sandaka Sutta* (To Sandaka).[1] Here the Buddha explains how a certain person is dull and confused:

> Because he is dull and confused, when he is asked such and such a question, he engages in verbal wriggling, in eel-wriggling: [1] 'I don't say it is like this. [2] And I don't say it is like that. [3] And I don't say it is otherwise. [4] And I don't say it is not so. [5] And I don't say it is not not so.'[2]

This person replies with five statements of denial whereas Sañjaya uses only four. It is unclear exactly who this unnamed person is, since he is simply referred to as dull and confused. He is also charged with engaging in eel-wriggling (*amarā-vikkhepa*) or prevarication, and this charge suggests a convenient term, the "eel-wriggler", with which to refer to this unnamed person.

The so-called eel-wriggler's five statements of denial are interpreted two ways.[3] The first interpretation dismisses the first statement as a general statement of denial corresponding to Sañjaya's initial 'I don't think so',[4] and then takes the remaining four statements as corresponding to Sañjaya's fourfold scheme of denial.

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[1] Sutta 76 of *Majjhima Nikāya*, trans. Horner 1954-59, **2**, 192-203; Bodhi 1995, 618-628.

[2] *Majjhima Nikāya* (i 520-521), trans. Bodhi 1995, 625.

[3] Jayatilleke 1963, 135-138.

[4] Quoted above from the *Dīgha Nikāya* (i 58-59), trans. Walshe 1987, 97.

The second interpretation takes the first four statements as corresponding to Sañjaya's fourfold scheme of denial and then adds the remaining statement to make a fivefold scheme. Although these five statements can be interpreted as involving a fivefold scheme of denial, there is no corresponding fivefold scheme of predication to be found in the early Buddhist works.

The unnamed eel-wriggler that the Buddha refers to here is probably not Sañjaya. The Buddha was no doubt familiar with Sañjaya's views, since the *Mahāsaccaka Sutta* (Great Discourse to Saccaka)[1] mentions that the Buddha debated with Sañjaya and the other famous teachers of his time. Also, Sāriputta and Moggallāna,[2] two of the Buddha's most distinguished followers, were originally followers of a teacher called Sañjaya. The *Mahāvagga* (The Great Book)[3] describes how both Sāriputta and Moggallāna joined the Buddhist order early in the Buddha's career as a teacher and brought with them some 250 of Sañjaya's followers. The Sañjaya mentioned in the *Mahāvagga* is probably the same as Sañjaya Belaṭṭhiputta, one of the six famous teachers of the Buddha's time. A similar statement is also found in the *Catusparisatsūtra* (On the Foundation of the Buddhist Order).[4]

The fact that Sañjaya's two leading followers became the two main disciples of the Buddha and brought with them 250 of Sañjaya's followers suggests that some of Sañjaya's ideas could have found their way into the Buddhist tradition. The practice of using the tetralemma is an example of one such idea. Thus, the tetralemma may have originated with Sañjaya, but equally it may have originated with the Buddhists or it may have been in common use during the Buddha's lifetime. It is used by Buddhists to describe Sañjaya's views, but since there is only the Buddhist description of Sañjaya's views available, it is unclear whether the tetralemma originated with Sañjaya's or whether it originated elsewhere and was simply used by the Buddhists to describe Sañjaya's views.

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[1] Sutta 36 of *Majjhima Nikāya*, trans. Horner 1954-59, **1**, 291-305; Bodhi 1995, 332-343.

[2] Śāriputra (Upatiṣya) and Maudgalyāyana (Kolita).

[3] Part of the *Vinaya-Piṭaka* (i 23-24), trans. Rhys Davids, Oldenberg 1881-85, **1**, 144-151; Horner 1938-66, **4**, 52-57; Warren 1973, 87-91.

[4] Trans. Kloppenborg 1973, 6-98, see especially 96. Cf. the *Pravrajyāvastu* of the Tibetan *Mūlasarvāstivāda Vinaya*, trans. Vogel 1970, 20-35, plus the Chinese *Mūlasarvāstivāda Vinaya*, 39-45.

## Other fourfold schemes

There are other fourfold schemes found in early Buddhist works that are not the typical tetralemma. For instance, the Buddha describes four types of things in the *Book of the Fours*, one of the books of the *Aṅguttara Nikāya* (Collection of Expanding Groups):

> Monks, these four persons are found existing in the world. What four? [1] He who is bent on his own profit, not another's; [2] he who is bent on another's profit, not his own; [3] he who is bent on the profit of both; [4] he who is bent on the profit of neither.[1]

And:

> Monks, there are these four rain-clouds. What four? [1] The thunderer not the rainer. [2] The rainer not the thunderer. [4] The neither thunderer nor rainer. [3] The both thunderer and rainer. These are the four.[2]

And again:

> Monks, there are these four snakes. What four? [1] The venomous but not fierce, [2] the fierce but not venomous, [3] the one that is both, [4] the one that is neither.[3]

This scheme of predication is one where the same subject has (1) some characteristic, (2) another characteristic, (3) both of these characteristics, and (4) neither characteristic. Using 'A' and 'B' to stand for two different predicates, the logical form of this scheme is:

1. The subject is A
2. The subject is B
3. The subject is both A and B
4. The subject is neither A nor B

The pattern in these four statements is one where (1) A is affirmed, (2) B is affirmed, (3) both A and B are affirmed, and (4) neither A nor B are affirmed of the same subject. In the fourfold scheme of predication nowadays called the tetralemma there is only one predicate not two, and it is (1) affirmed, (2) denied, (3) both affirmed and denied, and (4) neither affirmed nor denied of the same subject.

Another fourfold scheme involves two subjects. For instance, in the *Book of the Fours*:

> Monks, there are these four pools of water. What four? [1] The shallow which looks deep, [2] the deep which looks shallow, [3] the shallow that looks shallow, and [4] the deep which looks deep. These are the four.[4]

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[1] *Aṅguttara Nikāya* (ii 96), trans. Woodward, Hare 1932-36, **2**, 105. Cf. Thera, Bodhi 1999, 104.

[2] *Aṅguttara Nikāya* (ii 101), trans. Woodward, Hare 1932-36, **2**, 109.

[3] *Aṅguttara Nikāya* (ii 110), trans. Woodward, Hare 1932-36, **2**, 115.

[4] *Aṅguttara Nikāya* (ii 104), trans. Woodward, Hare 1932-36, **2**, 112.

Numbers 1 and 3 have 'shallow pool' for their subjects, and numbers 2 and 4 have 'deep pool' for their subjects. There are two predicates, 'looks deep' (symbolised by 'A') and 'looks shallow' (symbolised by 'B'). The pattern here is:

1. Subject one is A
2. Subject two is B
3. Subject one is B
4. Subject two is A

This fourfold scheme is also not the scheme nowadays called the tetralemma.

The *Book of the Fours* contains many such groups of fours which are simply a common method of enumerating alternatives. In fact, given their frequency, they appear to be the standard way in which the early Buddhists enumerated alternatives.

## Not a multi-valued logic

The tetralemma does not imply a multi-valued logic with the values true, false, both true and false, and neither true nor false. The early Buddhist works use only two-valued logic. As Jayatilleke points out, this is clear in the *Anguttara Nikāya*. The Buddha says (paraphrased):

> 'I know what has been seen, heard, and so forth in the world,' and
> If I were to say: 'I do not know these things,' then that would be false, and
> If I were to say: 'I both know and do not know these things,' then that would be false, and
> If I were to say: 'I neither know nor do not know these things,' then that would be false.[1]

That is, the Buddha is saying here that since the first statement is true, it follows that each of the three remaining statements is false. There is no suggestion here that since the first statement is true, the second statement (not knowing) would be false, the third statement (both knowing and not knowing) would be both true and false, and the fourth statement (neither knowing nor not knowing) would be neither true nor false. Rather, it establishes that only two truth values are accepted and if one of the four statements is true, then each of the other three statements is false. This conclusion is also supported by the advice the Buddha gives (in verse) in the *Anguttara Nikāya* on how to answer questions:

> Hard to overcome, to vanquish hard, profound,
> Invincible is such a one, and skilled
> To see the meaning, be it true or false;
> Wise to reject the false, he grasps the true.[2]

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[1] *Anguttara Nikāya* (ii 24), trans. Woodward, Hare 1932-36, **2**, 35-51 (see p. 27). Note that a negative is missing from the original text and from Woodward's translation, see Jayatilleke 1963, 346 note 1.

[2] *Anguttara Nikāya* (ii 46), trans. Woodward, Hare 1932-36, **2**, 54.

Although only two truth values (true and false) are found in the early Buddhist works, there are some statements to which true and false do not apply. Examples of such statements are found in the lists of the 62 wrong views and the ten undeclared points.

## 2.1.2   The 62 wrong views and the ten undeclared points

The list of 62 wrong views indicates what some the Buddha's followers considered to be the main topics of philosophical dispute. This list suggests that there was an understanding of logical principles during the Buddha's lifetime, that the tetralemma was commonly used in philosophical debate, and that Sañjaya was only one of a number of so-called eel-wrigglers. The ten undeclared points are a sub-set of the 62 wrong views. The Buddha explained that true and false do not apply to these ten statements and this same reasoning can be applied to the 62 wrong views.

### The first 12 wrong views

The Buddha describes 62 wrong views in the *Brahmajāla Sutta* (The Supreme Net).[1] Wrong views 1-8 are about the self (soul)[2] and the world (universe). 1-4 regard the self and the world as eternal, and 5-8 regard them as partly eternal and partly not eternal. The last in each group of four (i.e. wrong views 4 and 8) are said to be held by those who are addicted to logic and reasoning: "Here a certain ascetic or Brahmin is a logician, a reasoner. Hammering it out by reason, following his own line of thought, he argues"[3] for his views. This indicates that logic was a discipline employed by some ascetics or Brahmins during the Buddha's time.

Wrong views 9-12 are about the world. They are held by those who claim that the world is (1) finite, (2) infinite, (3) both finite and infinite, and (4) neither finite nor infinite. These four wrong views are presented according to the pattern followed in a tetralemma. That is, some say the world is finite, others say it is infinite. Some claim that the world is both since it is "finite up-and-down, and infinite across".[4] The fourth view is held by those who are addicted to logic and reasoning. These logicians find reasons to fault the view that the world is finite, as well as reasons to fault the view that the world is infinite. They then argue that the world cannot be both finite and infinite since that view attracts the combined faults that each

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[1] Sutta 1 of *Dīgha Nikāya*, trans. Rhys Davids, Rhys Davids 1899-1921, **1**, 1-55; Walshe 1987, 67-90.

[2] Pāli, *attā*; Sanskrit, *ātman*.

[3] *Dīgha Nikāya* (i 16, i 21), trans. Walshe 1987, 74, 78.

[4] *Dīgha Nikāya* (i 23), trans. Walshe 1987, 79.

view has individually. Thus they conclude that the world is neither finite nor infinite. Here again there is evidence for the discipline of logic existing in ancient India.

## The eel-wrigglers

Wrong views 13-16 are held by the so-called eel-wrigglers, those who prevaricate refusing to accept any position. The Buddha says:

> There are, monks, some ascetics and Brahmins who are Eel-Wrigglers [*amarā-vikheppikā*]. When asked about this or that matter, they resort to evasive statements, and they wriggle like eels on four grounds.[1]

The "four grounds" refers to the four wrong views 13-16. The first three wrong views (13-15) are views about whether something (this or that matter) is good or bad. In each of these three cases the eel-wriggler concerned gives a fivefold scheme of denial:

> When asked about this or that matter, he resorts to evasive statements and wriggles like an eel: [1] "I don't say this, [2] I don't say that. [3] I don't say it is otherwise. [4] I don't say it is not. [5] I don't not say it is not."[2]

The five evasive statements found here are the same as those given by the unnamed eel-wriggler in the *Sandaka Sutta* who is probably not Sañjaya. But the reason for making such statements is not simply because these eel-wrigglers are dull and confused, as was the case in the *Sandaka Sutta*. Rather, the reasons are three: in the first case (wrong view 13) the eel-wrigglers fear they may tell a lie; in the second case (wrong view 14) they fear becoming attached to their views; and in the third case (wrong view 15) they fear being defeated in debate by "practiced debaters, like archers who can split hairs, who go around destroying others' views".[3] In these three cases the eel-wrigglers fear that either lying, attachment, or defeat in debate will disturb their peace of mind and be a hindrance to attaining tranquillity.

The fourth wrong view (16) is the view about the following topics: another world (life after death), beings born spontaneously (without a cause), and the continued existence of the Tathāgata after death. This eel-wriggler is simply dull and stupid, and:

> Because of his dullness and stupidity, when he is questioned he resorts to evasive statements and wriggles like an eel: "If you ask me whether there is another world – if I thought so, I would say there is another world. [1] But I don't say so. [2] And I don't say otherwise. [3] And I don't say it is not, and [4] I don't not say it is not."

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[1] *Dīgha Nikāya* (i 24), trans. Walshe 1987, 80.

[2] *Dīgha Nikāya* (i 25), trans. Walshe 1987, 80.

[3] *Dīgha Nikāya* (i 26), trans. Walshe 1987, 80.

The four evasive statements made by this eel-wriggler closely match the fourfold scheme of denial used by Sañjaya in the *Sāmaññaphala Sutta*.[1] The same passage continues:

> "Is there no other world?..." "Is there both another world and no other world?..." "Is there neither another world nor no other world?..." "Are there spontaneously-born beings?..." "Are there not...? " "Both...?" "Neither...?" "Does the Tathāgata exist after death? Does he not exist after death? Does he both exist and not exist after death? Does he neither exist nor not exist after death?..." "If I thought so I would say so...I don't say it is not. "[2]

The topics found here are slightly different from those mentioned by Sañjaya in the *Sāmaññaphala Sutta*. The topic 'beings born spontaneously' listed here is not mentioned by Sañjaya in the *Sāmaññaphala Sutta*. Also the topic 'results of good and bad actions' which Sañjaya mentions does not appear here.[3] Nevertheless, the use of the same fourfold scheme of denial and the similarity of topics suggests that the fourth eel-wriggler is probably Sañjaya.

The differences between this fourth eel-wriggler and the former three are that the fourth eel-wriggler makes four evasive statements about specific topics (life after death, etc.) because he is dull and stupid. The former three eel-wrigglers, by contrast, make five evasive statements about non-specific topics because they fear that any endorsement would hinder their chances of attaining tranquillity. If the fourth eel-wriggler is in fact Sañjaya then the former three are probably not followers of Sañjaya. Thus there is good reason to believe that Sañjaya was not the only so-called eel-wriggler and that there were in fact a number of schools in ancient India which, like Sañjaya, refused to take a position on any issue.

**The remaining wrong views**

Wrong views 17 and 18 regard the self and the world as having arisen by chance (without a cause). The remaining 44 views all concern the self (or soul). The first 32 wrong views (19-50) are arranged in groups of four according to the pattern used in a tetralemma.

Wrong views 19-34 are held by those who claim that the self after death is conscious and (i) is, (ii) is not, (iii) both is and is not, or (iv) neither is nor is not material (19-22), finite (23-26), of uniform perception (27-30), or wholly happy (31-34). Wrong views 35-42 are held by those who claim that the self after death is unconscious and (i) is, (ii) is not, (iii) both is and is not, or (iv) neither is nor is not material (35-38), or finite (39-42). Wrong views 43-50

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[1] Quoted above from the *Dīgha Nikāya* (i 58-59), trans. Walshe 1987, 97.

[2] *Dīgha Nikāya* (i 27), trans. Walshe 1987, 81.

[3] That is, it is missing from the Walshe translation, although it is included in the Rhys Davids translation.

are held by those who claim that the self after death is neither conscious nor unconscious and (i) is, (ii) is not, (iii) both is and is not, or (iv) neither is nor is not material (43-46), or finite (47-50). These three groups of views consider the self to be (1) conscious, (2) unconscious, and (3) neither conscious nor unconscious after death. The fourth alternative, the view that the self is both conscious and unconscious after death, is not discussed.[1] These eight tetralemmata presented here show that the tetralemma was a common device used in philosophical discussion in ancient India.

Wrong views 51-57 are held by those who claim that the self ceases to exist after death, and wrong views 58-62 are held by those who claim that the self attains liberation (*nibbāna*).

All 62 wrong views were held by the Buddha's contemporaries. The Buddha is in effect saying that the views on a particular subject are four. There are those who think this, and those who think that. There are those who claim it is both, and those who claim it is neither. There are only these four alternatives and all four are wrong. This suggests a contradiction, which naturally led to the Buddha being asked for his opinion on the same topics.

**Ten undeclared points**

The so-called indeterminate (*avyākatāni*) or undeclared points appear in a list of ten statements. The Buddha refused to accept any of these undeclared points as true or false. These ten are:

1. The world is eternal
2. The world is not eternal
3. The world is finite
4. The world is infinite
5. The self (soul) is the same as the body
6. The self (soul) is different from the body
7. The Tathāgata does exist after death
8. The Tathāgata does not exist after death
9. The Tathāgata both does and does not exist after death
10. The Tathāgata neither does nor does not exist after death

This list of ten statements appears in a number of early Buddhist works.[2] Other versions of this list exist and they expand some points by including the 'both' and 'neither' alternatives where they are not found in the list of ten points.

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[1] Potter ed. 1965-99, **7**, 571 note 54, notes where these views are found in the *Upaniṣads*.

[2] See for instance *Udāna* (6.4), trans. Woodward 1935, 81-83; *Aṅguttara Nikāya* (ii 41), trans. Woodward, Hare 1932-36, **2**, 47-48.

Most of the 62 wong views are about the self (soul) and the world (universe), and these same topics also appear in the list of ten undeclared points. In both lists, the views are generally classified into four, which corresponds to the pattern used in a tetralemma.

On the one hand, the Buddha claims that all four views on some topic are wrong, and on the other hand, when he is asked for his own views on the same issue, he refuses to answer. The reason why the Buddha said that all four views are wrong is not because the correct view should be expressed in a statement with a fifth logical form. Rather, he claims that all four views are wrong because the statements expressing those views are misleading statements. When the Buddha was questioned on these same topics he refused to answer, claiming that it is a mistake to answer misleading questions. The Buddha makes this clear in his description of the four types of question.

## 2.1.3   Four types of question

There are four different ways to answer questions.[1] These are listed in the *Sangīti Sutta* (Chanting Together):[2]

> Four ways of answering questions: the question
> [1] to be answered directly [*ekaṃsa-vyākaraṇiyo pañho*],
> [2] requiring an explanation [*vibhajja-vyākaraṇiyo pañho*],
> [3] requiring a counter-question [*paṭipucchā-vyākaraṇiyo pañho*],
> [4] to be set aside [*ṭhāpanīyo pañha*].[3]

Each way of answering a question is associated with a corresponding type of question. Thus there are four types of question, each type to be answered in its own way. The Buddha mentions these four types of question in the *Aṅguttara Nikāya*:

> Monks, there are these four ways of answering a question. What four? There is [1] the question which requires a categorical reply; [3] that which requires a counter-question; [4] that which requires to be waived; and there is [2] the question which requires a discriminating reply. These are the four.[4]

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[1] See Bharadwaja 1984, 304 ff.; repr. Bharadwaja 1990, 47 ff.

[2] Sutta 33 of *Dīgha Nikāya*, trans. Rhys Davids, Rhys Davids 1899-1921, 3, 201-249; Walshe 1987, 479-510.

[3] *Dīgha Nikāya* (iii 229), trans. Walshe 1987, 492. See also Solomon 1976-78, 1, 31.

[4] *Aṅguttara Nikāya* (ii 46), trans. Woodward, Hare 1932-36, 2, 53-54.

Each type of question must be answered in its own way, and it is considered a mistake to answer a question in any other way. The Buddha makes this clear in the *Aṅguttara Nikāya*:

> Now, monks, if this person, on being asked a question, [1] does not give a categorical reply to a question requiring it: [2] does not give a discriminating reply to a question requiring it: [3] does not reply by a counter-question to a question requiring it, and [4] does not waive a question which should be waived, – then, monks, such a person is incompetent to discuss.[1]

The four types of question expressed as statements produce four types of statement. The four types of statement are not specifically mentioned in the early Buddhist works. Each of the four types of answer corresponds to one of the four types of question, and each of the four types of question corresponds to one of the four types of statement:

| | Answer: | Question requiring: | Statement which is: |
|---|---|---|---|
| 1. | Directly | categorical reply | straightforward, unambiguous |
| 2. | With an explanation | discriminating reply | vague |
| 3. | With a counter-question | counter-question reply | ambiguous |
| 4. | No reply (set aside) | to be waived | misleading |

Reading across the top line of these three lists, a competent debater must answer directly with 'yes' or 'no' to a question requiring a categorical reply. Such questions correspond to straightforward, unambiguous statements. The second type of question requires a qualified reply or explanation, and the third type must be clarified with a counter-question. The statements in these two cases are vague and ambiguous, respectively. In the fourth case (bottom row) a competent debater must not answer the question. Such questions correspond to misleading statements.

If someone should answer a question in an inappropriate manner then that person is not competent to discuss or debate. That is, those involved in philosophical discussion must first correctly identify the type of question being asked and then respond to it in the appropriate manner. It is a mistake to answer a question of one type with a reply for another type. In particular, it is a mistake to answer the fourth type of question with any of the first three types of reply. Such questions must not be answered.

A categorical determination, i.e. true or false, can be made about straightforward, unambiguous statements. Vague and ambiguous statements are not clearly true or false as they stand. Misleading statements cannot be determined as true or false. It is misleading to

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[1] *Aṅguttara Nikāya* (i 197), trans. Woodward, Hare 1932-36, **1**, 178-179.

say that they are true and it is also misleading to say that they are false. The reason that true and false do not apply to misleading statements is because such statements do not have legitimate subjects. The statements in the list of ten undeclared points are misleading because their subjects are illegitimate. Questions formed from misleading statements must not be answered but must be waived or set aside. Therefore, when the Buddha was questioned on the ten undeclared points he did not declare them to be true or false.

## Statements require a legitimate subject

The Buddha explains in a number of places the reasons why it is a mistake to answer questions that should be set aside. The *Cūḷamālunkya Sutta* (Shorter Discourse to Mālunkyāputta)[1] describes how Mālunkyāputta asks the Buddha to declare his position on the ten undeclared points. The Buddha explains to Mālunkyāputta that it is a mistake to want to determine such things as whether the world is eternal when there are more pressing matters at hand. It is like a man shot with a poisonous arrow wanting to know what type of wood and feathers had been used to make the arrow when the most pressing need is to remove the arrow. This parable suggests that the important thing here is to rectify the problem regarding these misleading questions rather than analyse irrelevant details, but it does not explain what the problem is with these questions.

The misleading questions that the Buddha refused to answer are listed in the ten undeclared points. These questions have three subjects, i.e. the world, the soul, and the Tathāgata. These three are also the subjects of most of the 62 wrong views. The subjects in the ten undeclared points are:

1. The world (universe), undeclared points 1-4
2. The self (soul), undeclared points 5-6
3. The (soul of the) Tathāgata, undeclared points 7-10

The subjects in the 62 wrong views are:

1. The world (universe), wrong views 9-12
2. The self (soul), wrong views 19-62
3. Both the self and the world, wrong views 1-8 and 17-18
4. Neither the self nor the world, wrong views 13-16 (held by the eel-wrigglers)

The world is the subject of undeclared points 1-4 and wrong views 9-12. The self is the subject of undeclared points 5-6 and wrong views 19-62. In addition, the self and the world together form the subject of wrong views 1-8 and 17-18. Thus the self and the world,

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[1] Sutta 63 of *Majjhima Nikāya*, trans. Horner 1954-59, **2**, 97-101; Bodhi 1995, 533-536.

individually and jointly, are the subjects of all the undeclared points except the last four (7-10) and all the wrong views except 13-16.

When the world or the self are used as the subject of a statement then that statement is said to be misleading, and when a question is formed from such a statement then that question must be set aside. The reason for this is that a statement (or question) must have a legitimate subject, and the subjects in these cases (the world or the self) do not qualify as legitimate subjects. The subject of a statement is the subject as it is understood by the person claiming the statement is true or false. Those who claim that these statements are true or false conceive of the self and the world incorrectly and thus the statements are considered to be misleading.

**The world and self misconceived**

The Buddha explains how the world is misconceived in the minds of most people in the *Kaccāyanagotta Sutta*, part of the *Nidāna Saṃyutta* (Connected Discourses on Causation):[1]

> This world, Kaccāna, for the most part depends upon a duality–upon the notion of existence and the notion of non-existence. But for one who sees the origin of the world as it really is with correct wisdom, there is no notion of non-existence in regard to the world. And for one who sees the cessation of the world as it really is with correct wisdom, there is no notion of existence in regard to the world.[2]

The notions of existent and non-existent mentioned here are sometimes referred to using the terms eternalism and annihilationism. Both are extreme views about the world and neither of them is correct. "For the most part" means "for most people". The Buddha is saying here that most people conceive of the world in one of these two incorrect ways. Thus, the Buddha considers most people to have an incorrect conception of the subject in questions like 'Is the world finite?' and 'Is the world infinite?' If the Buddha replies affirming either of these two questions he will affirm in the mind of the person asking the question, a view of the world that he (the Buddha) does not hold. It is much the same when the self is the subject.

In the *Abyākata Saṃyutta* (Connected Discourses on the Undeclared)[3] the wanderer Vacchagotta asked the Buddha two questions, 'Is there a self?' and, 'Is there no self?' The Buddha did not answer either question but remained silent.

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[1] The first chapter of *Nidānavagga* (Book of Causation) in the *Saṃyutta Nikāya*, trans. Rhys Davids 1917-30, 2, 1-94; and Bodhi 2000, 1, 533-620.

[2] *Saṃyutta Nikāya* (ii 17), trans. Bodhi 2000, 1, 544. See also Rhys Davids 1917-30, 2, 11-12; and Kalupahana 1986, 10-11.

[3] Sutta 44 of *Saṃyutta Nikāya*, trans. Rhys Davids 1917-30, 4, 265-283; Bodhi 2000, 2, 1380-1395.

When asked by Ānanda why he had not answered Vacchagotta, the Buddha said:

> "If, Ānanda, when I was asked by the wanderer Vacchagotta, 'Is there a self?' I had answered, 'There is a self,' this would have been siding with those ascetics and brahmins who are eternalists. And if, when I was asked by him, 'Is there no self?' I had answered, 'There is no self,' this would have been siding with those ascetics and brahmins who are annihilationists."
>
> "If, Ānanda, when I was asked by the wanderer Vacchagotta, 'Is there a self?' I had answered, 'There is a self,' would this have been consistent on my part with the arising of the knowledge that 'all phenomena are nonself [selfless]?'"
>
> "No, venerable sir."
>
> "And if, when I was asked by him, 'Is there no self?' I had answered, 'There is no self,' the wanderer Vacchagotta, already confused, would have fallen into even greater confusion, thinking, 'It seems that the self I formerly had does not exist now'."[1]

Here the Buddha explains that the questions 'Is there a self?' and 'Is there no self?" are both questions to be waived, and it is therefore a mistake to answer them. That is, it is a mistake for the Buddha to affirm that there is a self because that would be understood by Vacchagotta as supporting the extreme view of an eternal self, and also contradicts the Buddha's view that all phenomena are selfless.[2] It is also a mistake for the Buddha to deny that there is a self because that would be understood by Vacchagotta as supporting the extreme view of nihilism and imply that the self comes to an end. These questions are misleading because if the Buddha were to make an affirmative reply to either question his reply would be understood by Vacchagotta as supporting a position on the subject that the Buddha does not in fact support.

## True and false do not apply to misleading statements

The misconceived notions of the world and of the self do not qualify as legitimate subjects for questions or statements. Questions about the world and the self asked by those who harbour misconceptions about these subjects are misleading questions and should be set aside. When the world or the self are the subjects of statements then those statements are misleading statements to which true and false do not apply. In the *Poṭṭhapāda Sutta* (About Poṭṭhapāda)[3] the Buddha explains to Poṭṭhapāda that he does not accept any of the ten undeclared points as true or false.

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[1] *Saṃyutta Nikāya* (iv 400-401), trans. Bodhi 2000, **2**, 1394.

[2] The Buddha says here that not only do persons lack a self (Pāli, *attā*; Sanskrit, *ātman*) or soul, but in fact all phenomena lack a self, i.e. lack self-existence.

[3] Sutta 9 of *Dīgha Nikāya*, trans. Rhys Davids, Rhys Davids 1899-1921, **1**, 244-264; Walshe 1987, 159-170.

Poṭṭhapāda asks the Buddha:

'Well, Lord, if this question of self and perceptions is difficult for one like me – tell me: Is the world eternal? Is only this true and the opposite false?'
'Poṭṭhapāda, I have not declared that the world is eternal and that the opposite view is false.'
'Well, Lord, is the world not eternal?'
'I have not declared that the world is not eternal and that the opposite view is false.'[1]

Here the Buddha is saying that he does not accept that each statement is true and its opposite false, and for the opposite statement he says the same. That is, true and false do not apply to these statements. It is therefore wrong to claim that any of these statements is true, and those who do so hold wrong views.

## The eel-wrigglers

In the list of wrong views there are just four that have neither the self nor the world as the subject, i.e. wrong views 13-16. These four views are held by the so-called eel-wrigglers. The first three wrong views (13-15) mention only that the eel-wrigglers concerned make evasive statements about whether something is good or bad. The subjects are not specified. The Buddha says only that when asked about this or that matter, they resort to evasive statements. The subjects of these three wrong views are probably perfectly legitimate subjects about which the eel-wrigglers should be able to make a categorical determination. Since they hold the view that no position can be maintained on these subjects, their views are deemed to be wrong. This leaves only wrong view 16.

The last remaining wrong view (16) is held by an eel-wriggler (possibly Sañjaya) who makes evasive statements about the following topics: another world (life after death), beings born spontaneously (without a cause), and the continued existence of the Tathāgata after death. These topics involve the concept of a self or soul surviving death. This eel-wriggler claims that no position can be maintained on these topics, and in particular, claims that no position can be maintained on whether or not the Tathāgata exists after death. The Tathāgata is also the subject of the last four undeclared points (7-10), points that the Buddha also refused to either affirm or deny. The Buddha explains that his reason for refusing to either affirm or deny any of the four forms of the question on the continued existence of the Tathāgata after death is because the predicate of the question does not apply to the subject of

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[1] *Dīgha Nikāya* (i 188), trans. Walshe 1987, 164.

the question. The Buddha mentions this in the *Abyākata Saṃyutta*.[1] Here the Buddha tells a king that the predicate 'exists after death' does not apply to the subject 'Tathāgata:'

'The Tathāgata exists after death' does not apply;
'The Tathāgata does not exist after death' does not apply;
'The Tathāgata both exists and does not exist after death' does not apply;
'The Tathāgata neither exists nor does not exist after death' does not apply.[2]

There is no explanation why the predicate does not apply to the subject. But in the *Aggivacchagotta Sutta* (To Vacchagotta on Fire)[3] the Buddha provides more detail. Here Vaccha questions the Buddha (Gotama):

"When a bhikkhu's mind is liberated thus, Master Gotama, where does he reappear [after death]?"
"The term 'reappears' does not apply, Vaccha."
"Then he does not reappear, Master Gotama?"
"The term 'does not reappear' does not apply, Vaccha."
"Then he both reappears and does not reappear, Master Gotama?"
"The term 'both reappears and does not reappear' does not apply, Vaccha."
"Then he neither reappears nor does not reappear, Master Gotama?"
"The term 'neither reappears nor does not reappear' does not apply, Vaccha."[4]

All of this leaves Vaccha confused, so the Buddha questions Vaccha:

"If someone were to ask you, Vaccha: 'When that fire before you was extinguished, to which direction did it go: to the east, the west, the north, or the south?' – being asked thus, what would you answer?"
"That does not apply, Master Gotama. The fire burned in dependence on its fuel of grass and sticks. When that is used up, if it does not get any more fuel, being without fuel, it is reckoned as extinguished."
"So too, Vaccha, the Tathāgata has abandoned that material form by which one describing the Tathāgata might describe him; he has cut it off at the root, made it like a palm stump, done away with it so that it is no longer subject to future arising ... "[5]

Vacchagotta conceives of 'Tathāgata', the subject in these questions, as a self or soul. He thinks of the question 'Does the Tathāgata reappear?' as 'Does this soul reappear?' Any reply that the Buddha gives will be understood by Vacchagotta to be about the subject as he (Vacchagotta) understands it. Rather than answer the questions put to him, the Buddha instead

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[1] Sutta 44 of *Saṃyutta Nikāya*, trans. Rhys Davids 1917-30, **4**, 265-283; Bodhi 2000, **2**, 1380-1395.

[2] *Saṃyutta Nikāya* (iv 379), trans. Bodhi 2000, **2**, 1383.

[3] Sutta 72 of *Majjhima Nikāya*, trans. Horner 1954-59, **2**, 162-167; Bodhi 1995, 590-594.

[4] *Majjhima Nikāya* (i 486), trans. Bodhi 1995, 592.

[5] *Majjhima Nikāya* (i 487), trans. Bodhi 1995, 593.

attempts to explain to Vacchagotta that 'reappear', the predicate in these questions, does not in fact apply to the subject as Vacchagotta thinks of it (i.e. as a soul). The Buddha is in effect saying to Vacchagotta, 'This soul that you think of as the Tathāgata does not exist. This non-existent soul does not reappear in the next life, nor does it end with this life. Reappearing does not apply to a non-existent soul.' If the Buddha were to say 'The Tathāgata does reappear' or 'The Tathāgata does not reappear', Vacchagotta would be misled into thinking that the soul reappears in the next life, or the soul ceases with this life. Both these answers would be understood by Vacchagotta as confirming the existence of the soul. Since the affirmation or denial of such questions misleads those who misconceive the subject, such questions should be set aside. This is not mere ambiguity where both meanings are correctly understood. Those questions can be clarified with a counter-question. These are questions where the subject is understood in only one (incorrect) way.

The statement, 'the Tathāgata does reappear' is also misleading in the sense that if this statement is said to be true then it is understood by most people to mean that the soul continues to existence after death, and if this statement is said to be false then it is understood by most people to mean that the soul ceases to exist at death. True and false do not apply to this statement because the subject (as understood by most people) does not exist. When the predicate 'reappear' does not apply to the subject (the soul of the) 'Tathāgata' then it is a mistake to claim that the statement is true, and it is also a mistake to claim that the statement is false. Thus this statement, just like the question 'Does the Tathāgata reappear?' is misleading.

The so-called eel-wriggler (in wrong view 16) refuses to affirm any position on the question of the continued existence of the Tathāgata after death, just as the Buddha does. But unlike the Buddha, the eel-wriggler is unaware that these questions are misleading. The eel-wriggler simply refuses to maintain any position on these questions out of dullness and stupidity. According to the Buddha, it is a mistake to be simply evasive about misleading questions. These questions must be recognised as ones where the predicate does not apply to the subject and then set aside for that reason. Thus, this eel-wriggler's view to be simply evasive on the question of the continued existence of the Tathāgata after death is considered to be a wrong view.

## 2.1.4 Early Buddhist logic

The conclusions that can be drawn form this discussion on early Buddhist logic are that philosophical speculation and debate were common in the days of the Buddha. The lists of 62 wrong views and the ten undeclared points show that much of this speculation was about this world, i.e. the universe, and the next world, i.e. the soul's continued existence after death. The explanation found in the early Buddhist works suggests the logical principles that were accepted by the early Buddhists. These principles are that statements can have at most, four logical forms. These are where a subject is, is not, both is and is not, or neither is nor is not some predicate. Statements can be true or false. If any one of the statements amongst the four logical forms is true then the other three statements are false. Sometimes all four statements are said to be wrong, not because all four are false, but because true and false do not apply to some statements. There are four types of statement: unambiguous, vague, ambiguous, and misleading statements. True and false do not apply to misleading statements. The four types of statement correspond to four types of question, those requiring a categorical, discriminating, counter-question, and no reply. Each type of question must be answered in the appropriate manner. Misleading questions must be recognised for what they are and set aside. It is unacceptable to be evasive about misleading questions and wriggle like an eel.

There is very little information about what logical principles may have been used in debate. The early Buddhist works often refer to logicians and debate. These debates were probably conducted according to some rules. The existence of such rules is suggested in the *Aṅguttara Nikāya* when Buddha describes the person who is competent to debate:

> If this person on being asked a question [1] does not abide by conclusions, whether right or wrong, [2] does not abide by an assumption, [3] does not abide by recognised arguments, [4] does not abide by usual procedure, – in such case, monks, this person is incompetent to discuss. But if he does all these, he is competent to discuss.[1]

The word "discuss" here refers to philosophical discussion or debate. The four things that must be abided by when debating suggest that some rules applied in a debate, but there is no further explanation as to what these four actually involve.

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[1] *Aṅguttara Nikāya* (i 197), trans. Woodward, Hare 1932-36, **1**, 179. The same *sutta* continues with more conditions that are required in order to be competent to discuss.

## 2.1.5 The Buddha's attitude to reasoning

### Warning against debate

The Buddha lived at a time when philosophical discussion was popular and debate seems to have developed into a kind of sport. Some debaters apparently enjoyed destroying the views of others and debated for no reason other than to defeat an opponent. The Buddha describes such debaters in the *Mahāsīhanāda Sutta* (Great Lion's Roar):[1]

> Kassapa, there are some ascetics and Brahmins who are wise, skilled, practised in disputation, splitters of hairs, acute, who walk cleverly along the paths of views.[2]

The "splitters of hairs" (*vālavedhirūpā*) found here suggests another term, the "hair-splitters", with which to refer to such debaters. This term "hair-splitter" probably does not mean to make overly subtle distinctions, as it would in English. The term should be understood as meaning a debater with great skill, one who is like an archer able to hit a mark as small as a single hair. The same passage is also found in the *Brahmajāla Sutta*:

> There are ascetics and Brahmins who are wise, skilful, practiced debaters, like archers who can split hairs, who go around destroying others' views with their wisdom.[3]

This passage is also found in both the *Cūḷahatthipadopama Sutta* (Shorter Discourse on the Simile of the Elephant's Footprint)[4] and in the *Dhammacetiya Sutta* (Monuments to the Dhamma):[5]

> Sir, I have seen here certain learned nobles who were clever, knowledgeable about the doctrines of others, as sharp as hair-splitting marksmen; they wander about, as it were, demolishing the views of others with their sharp wits.

This passage continues explaining their tactics used in debate:

> If he is asked like this, he will answer like this, and so we will refute his doctrines in this way; and if he is asked like that, he will answer like that, and so we will refute his doctrine in that way.[6]

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[1] Sutta 8 of *Dīgha Nikāya*, trans. Rhys Davids, Rhys Davids 1899-1921, **1**, 223-240 (*Kassapa Sīhanāda Sutta*); Walshe 1987, 151-157.

[2] *Dīgha Nikāya* (i 162), trans. Walshe 1987, 151-152.

[3] *Dīgha Nikāya* (i 26), trans. Walshe 1987, 80.

[4] Sutta 27 of *Majjhima Nikāya*, trans. Horner 1954-59, **1**, 220-230; Bodhi 1995, 269-277.

[5] Sutta 89 of *Majjhima Nikāya*, trans. Horner 1954-59, **2**, 301-307; Bodhi 1995, 728-733. (See *Majjhima Nikāya* i 122-123.)

[6] *Majjhima Nikāya* (i 176), trans. Bodhi 1995, 269-270.

The tactics of the so-called hair-splitters are to devise arguments so that no matter what position an opponent takes they have a reason to disprove it. They seem not to be followers of any particular school of thought, but are simply skilful at refuting the views of others. Their aim is simply victory over an opponent rather than the establishment of truth. The Buddha warned against this style of debate in the *Sutta Nipāta*:[1]

> Desirous of debate, plunging into the assembly, they reciprocally regard one another as fools. Dependent upon other [teachers], they cause a dispute, desirous of praise, saying [they are] experts.
>
> Engaged in discussion in the middle of an assembly, wishing for praise, he becomes apprehensive, but [his argument] having been refuted, he becomes dejected. He is angry because of the censure [he receives]; he seeks weak points [in others].
>
> If the examiners of the questions say that the one's argument is inferior [and] refuted, the one whose argument is inferior laments [and] grieves. He wails, 'He has overcome me.'
>
> These disputes have arisen among [other] ascetics. Among them there is the elation [of victory] and the depression [of defeat]. Seeing this too, one should abstain from dispute, for there is no other aim but praise and profit.
>
> Or if, on the other hand, he is praised there, having made a [good] speech about the dispute in the middle of the assembly, he laughs on that account and is elated, having attained the goal as was his intention.
>
> That elation will be the cause of distress for him, but [nevertheless] he speaks proudly and conceitedly. Seeing this too one should not dispute, for the experts say that purity is not [gained] thereby.[2]

These "examiners of questions" are probably an examining body or an individual whose task it is to decide who has won the debate. This results in praise for the victor and dejection for those defeated. The Buddha advised his followers to avoid debating in this way because the purpose is simply to gain praise by seeking to belittle others.

## Warning against accepting a view for the wrong reasons

The Buddha also warned against accepting some view for the wrong reasons, including reasoning. In the *Aṅguttara Nikāya* the Buddha advised the Kālāmas:

> Do not, Kālāmas, arrive at conclusions [1] owing to hearsay, owing to tradition, owing to rumour, owing to distinction in canonical works, [2] on account of speculation, on account of methodical reasoning, [3] owing to a study of appearances, after contemplation and acquiescing to an opinion, because of plausibility, nor by thinking "the ascetic is our revered teacher."[3]

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[1] *Sutta Nipāta* (4.8), trans. Hare 1945, 123-124; Norman 1992, 96-97.

[2] *Sutta Nipāta* (825-830), trans. Norman 1992, 96.

[3] *Aṅguttara Nikāya* (i 188), trans. Hayes 1988, 49.

There are three groups of reasons mentioned here. The Buddha first warns against being misled by those who merely repeat hearsay, tradition, rumour or canonical works. Such people do not have first-hand knowledge about what they proclaim, but simply repeat what others have told them. The Buddha explains this in the *Subha Sutta* (To Subha):[1]

> And the ancient brahmin seers, the creators of the hymns, the composers of the hymns ... even these ancient brahmin seers did not say thus: 'We declare the result of these five things having realised it ourselves with direct knowledge.'[2]

A similar passage occurs in the *Tevijja Sutta* (Threefold Knowledge).[3] The Buddha's advice is to not rely on what others repeat, but rather to rely on one's own direct knowledge. In the second group of reasons the Buddha warns against being misled by those who argue for some theory since their reasoning can be wrong. He explains to Sandaka in the *Sandaka Sutta*[4] that some teach their views (*dhamma*) by reasoning, but this can be unreliable:

> Again, Sandaka, here a certain teacher is a reasoner, an inquirer. He teaches a Dhamma hammered out by reasoning, following a line of inquiry as it occurs to him. But when a teacher is a reasoner, an inquirer, some is well reasoned and some is wrongly reasoned, some is true and some is otherwise.[5]

The Buddha's advice here is not to reject all reasoning, but rather not to rely on the reasoning of others.

The last group of wrong reasons to accept some view includes mere assumption and opinion, or simply out of respect for some teacher. All these reasons are unreliable. In the *Mahātaṇhāsankhya Sutta* (Greater Discourse on the Destruction of Craving),[6] the Buddha specifically mentions respect for some teacher:

> "Bhikkhus, knowing and seeing in this way, would you speak thus:
> 'The Teacher is respected by us. We speak as we do out of respect for the teacher'?"
> "No, venerable sir."
> "Knowing and seeing in this way, would you speak thus:
> 'The Recluse says this, and so do [other] recluses, but we do not speak thus'?"
> "No, venerable sir."
> "Knowing and seeing in this way, would you acknowledge another teacher?"

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[1] Sutta 99 of *Majjhima Nikāya*, trans. Horner 1954-59, 2, 386-398; Bodhi 1995, 808-818.

[2] *Majjhima Nikāya* (ii 200), trans. Bodhi 1995, 811.

[3] Sutta 13 of *Dīgha Nikāya*, trans. Rhys Davids, Rhys Davids 1899-1921, 1, 300-320; Walshe 1987, 187-195. (See *Dīgha Nikāya* i 238-239.)

[4] Sutta 76 of *Majjhima Nikāya*, trans. Horner 1954-59, 2, 192-203; Bodhi 1995, 618-628.

[5] *Majjhima Nikāya* (i 520), trans. Bodhi 1995, 624-625.

[6] Sutta 38 of *Majjhima Nikāya*, trans. Horner 1954-59, 1, 311-324; Bodhi 1995, 349-361.

"No, venerable sir."

"Knowing and seeing in this way, would you return to the observances, tumultuous debates, and auspicious signs of ordinary recluses and brahmins, taking them as the core [of the holy life]?"

"No, venerable sir."

"Do you speak only of what you have known, seen, and understood for yourselves?"

"Yes, venerable sir."[1]

The Buddha's advice here is to rely on one's own understanding and not to accept things simply out of respect for some teacher.

### The Buddha on reasoning

The Buddha's attitude to reasoning is suggested by his advice here. He does not completely reject logical reasoning, but he does warn against debating in the assemblies trying to belittle others just to gain praise. He places great emphasis on developing one's own understanding rather than relying on tradition, respect for some teacher, or the reasoning of others. Developing one's own understanding would involve reasoning, amongst other things, and the logical principles involved in this reasoning are presumably similar to those described above.

## 2.2 Origin of early Indian logic

### 2.2.1 Reasoning in India before the Buddha

There are no works dating from the Buddha's time which contain formulations of logical principles. Ancient Indians during the time of the Buddha were no doubt familiar with disciplines governed by rules. The world's earliest extant grammar, Pāṇini's *Aṣṭādhyāyī* (Eight Chapters), abstracts and formulates rules for the Sanskrit language with a degree of sophistication that is far in advance of any other culture in this early time. Pāṇini is believed to have lived around the time of the Buddha or perhaps shortly after,[2] but his work shows a degree of development that suggests that grammar was not a new discipline in Pāṇini's day. If the rules formulated for grammar are any guide as to how ancient Indians may have formulated rules for logic, then there may well have been works containing formulations of logical principles. But if there were such works, nothing of them survives today.

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[1] *Majjhima Nikāya* (i 265), trans. Bodhi 1995, 357-358.

[2] Agrawala 1951.

Philosophical speculation and debate existed in India long before the time of the Buddha. Evidence for this can be found in the *Upaniṣads*. The oldest of these works belongs to the eighth and seventh centuries BC,[1] i.e. they are pre-Buddhist. The *Upaniṣads* follow the tradition of the *Vedas*, an ancient body of literature compiled between 2000 and 1000 BC. Discussion or debate (*vākovākya*) is one of the academic disciplines listed in the *Chāndogya Upaniṣad*.[2] Accounts in the *Bṛhadāraṇyaka Upaniṣad* describe debates that took place at King Janaka's court. On one occasion King Janaka offered a thousand cows with gold attached to their horns as a prize to be decided by debate. Yājñavalkya claimed this prize. On another occasion Yājñavalkya went to King Janaka and declared he had come for animals and for subtle questions, i.e. to debate. Yājñavalkya then proceeded to instruct the king.[3]

Some debates found in the *Bṛhadāraṇyaka Upaniṣad* warn the person asking questions not to continue asking beyond a certain point or their head would fall off (or split apart).[4] Two the early Buddhist works, the *Ambaṭṭha Sutta* (About Ambaṭṭha)[5] and the *Cūḷasaccaka Sutta* (Shorter Discourse to Saccaka),[6] mention similar warnings. A person answering questions must reply by the third time a question is asked or their head would split apart.[7] The similarity between these warnings suggests a common tradition. The early Buddhists no doubt adopted the existing tradition of Indian debate. Witzel argues that such references point to the early beginnings of the Indian tradition of debate which may have originated with rituals recorded in the *Vedas*.[8] Jayatilleke also traces the origins of Indian debate to the *Vedas*:

> The debate in the Indian context seems to have its historical origins in the Vedic institution of the *brahmodya* (or *brahmavadya*). A brief glance at the history of the brahmodya seems profitable in so far as it gives a picture of the origin and development of the debate. The earliest brahmodyas are riddles or religious charades which are to be found in the Ṛgveda (1.164, 8.29) or the Atharvaveda (9.9, 10). They frequently occur in the Brāhmaṇas.[9]

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[1] Radhakrishnan, Moore, 1957, 37.

[2] *Chāndogya Upaniṣad*, trans. Swāhānanda 1956, (7.1.2) 481-482, (7.2.1) 488-489 and (7.7.1) 505.

[3] *Bṛhadāraṇyaka Upaniṣad*, trans. Mādhavānanda 1934, (3.1.1-10) 285-298, and (4.1.1) 398.

[4] *Bṛhadāraṇyaka Upaniṣad*, trans. Mādhavānanda 1934, (3.6.1) 342-343, and (3.9.26) 387-388.

[5] Sutta 3 of *Dīgha Nikāya*, trans. Rhys Davids, Rhys Davids 1899-1921, 1, 108-136; Walshe 1987, 111-124. (See *Dīgha Nikāya* i 95.)

[6] Sutta 35 of *Majjhima Nikāya*, trans. Horner 1954-59, 1, 280-291; Bodhi 1995, 322-331. (See *Majjhima Nikāya* i 231.)

[7] See also head-splitting as a threat in *Sutta Nipāta* (983, 987-990), the Buddha's reply (1025-1026), trans. Norman 1992, 112-113, 115.

[8] Witzel 1987. See also McEvilley 2002, 408-409.

[9] Jayatilleke 1963, 43. See also 45 and 231.

The tradition of philosophical debate that the Buddha inherited definitely pre-dates the arrival of the Greeks in India and it most likely began even before Greek philosophy began. Reasons have been put forward to argue for Greek influence in the development of Indian logic in general, and Buddhist logic in particular, but any claim that the Indian tradition of philosophical debate originally came from Greece can be rejected on purely chronological grounds. Indian and Greek philosophical speculation were probably quite independent of each other prior to Alexander's visit (described below). Any influence that may have travelled from Greece to India would be after the Indian tradition of debate had been established, not before. The evidence found in the early *Upaniṣads* indicates that a tradition of debate existed in India even before Thales of Miletus (sixth century BC). Thales is known as the first Greek philosopher. He lived in Miletus, an Ionian Greek city on the coast of Asia Minor, a century or two after the earliest *Upaniṣads* were compiled.[1]

Greek knowledge of India and Indian philosophical traditions began with Alexander's historic visit to India in the fourth century BC. Before this time, the Greeks knew very little about India. From Alexander's visit onwards the Greeks maintained a close association with India which lasted for some 500 years.

## 2.2.2   The arrival of the Greeks in India

The arrival of the Greeks in India can be accurately dated using Greek records. Before this time there would have been little opportunity for the exchange of ideas between Greece and India, but after this time there was ample opportunity. In fact there is some evidence to support the view that the tetralemma, so often found in Buddhist works, may have influenced the early Greek sceptics.

**Alexander the Great**

Alexander the Great (356-323 BC) became king of Macedonia in 336 BC at the age of 20 when his father Philip was assassinated. Two years later he set out with an army of Macedonians and Greeks to conquer the Persian Empire. Alexander successfully defeated the Achaemenid dynasty and marched eastward across Asia taking control of all their territories. Once he had control of Bactria (northern Afghanistan), Alexander turned his attention to India. In early 326 BC Alexander marched from the Kabul valley into north-western India

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[1] Warder 1956, 54, says (following Ruben) that first true philosopher was Uddālaka, who was perhaps 50 years older than Thales, the first Greek philosopher.

with a large number of reinforcements. His first stop was in Taxila (Sanskrit: Takṣaśilā), a famous centre of learning in ancient India. It is situated about 20 miles northwest of present-day Rawalpindi (northern Pakistan). The king of Taxila joined Alexander to fight against the Indian king Porus (Poros). They defeated Porus at the Jhelum river, one of the five tributaries of the Indus. Alexander gave orders for a fleet of ships to be built there and then continued his conquest eastward. When he reached the Beas river, an eastern tributary of the Indus, his soldiers refused to go any further, insisting that they had conquered the entire Persian Empire. They returned to the Jhelum river and then sailed down the Jhelum into the Indus river and to the coast. They conquered the lands to the east and west of the Indus until they reached the ocean. Alexander left India late in 325 BC.

Alexander was in India for less than two years during which time he gained control of north-western India – roughly present-day Pakistan and the Punjab. Alexander's army was accompanied by a large number of people including the wives and families of soldiers, potential settlers, and scholars like philosophers and historians. Alexander founded cities as he went which became the new homes for settlers. He built docks on the rivers to facilitate trading, presumably intending to unify his vast empire not only politically but also commercially. The Indian territories were divided into administrative areas some with European governors and some with Indian. These were protected by military garrisons which included Macedonian and Greek soldiers. Although Alexander was in India for only a short time, he left behind many settlers living in newly founded cities protected by garrisons.

## The gymnosophists

The philosophical environment that the Greeks found when they entered India was probably similar to the one described in the early Buddhist works. Those who engaged in philosophical speculation were called gymnosophists by the Greeks. In Taxila, Alexander sent Onesikritos, a follower of Diogenes the Cynic, to question two such gymnosophists and make a report on their doctrines. Onesikritos recorded his conversations with them in his history of Alexander, now preserved in fragments in the writings of other authors.[1]

The gymnosophists are described as going naked and enduring extreme physical hardship. The younger of the two gymnosophists, Kalanos (Calanos or Sphines), eventually left India with Alexander's party only to later burn himself to death. The older gymnosophist

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[1] *Plutarch's Lives*, 2, 521.

was called Dandamis (Mandanes). According to Plutarch's (c.45-c.120 AD) *Life of Alexander*, Alexander's passion for learning was demonstrated by his "veneration of Anaxarchus, ... and his particular care and esteem of Dandamis and Calanus."[1] McCrindle has collected together all the passages in the classics concerning Kalanos.[2] These two gymnosophists are unlikely to be Buddhists and may be Jainas.

Plutarch describes Alexander's interview with some other Indian gymnosophists.[3] These gymnosophists had persuaded an Indian king to revolt against Alexander, and the Greeks captured ten of them. Since they were "reputed to be extremely ready and succinct in their answers" Alexander asked them difficult questions declaring he would put to death first the one who gave the worst answer. Alexander seemed to take delight in such encounters perhaps because of his training as a youth under Aristotle.

Aristotle's nephew Callisthenes (Kallisthenes) who had been brought up and educated by Aristotle also accompanied Alexander on his campaign in India. Callisthenes was implicated in a plot to assassinate Alexander and was either hanged or died in captivity. Plutarch (referring to Chares) says that Callisthenes was kept in chains for seven months and died about the time Alexander was wounded in India,[4] i.e. when Alexander's army was travelling down the Indus to the coast. Other philosophers of note who accompanied Alexander to India are Anaxarchus (the Democritean) and his pupil Pyrrho of Elis. Anaxarchus (c.380-c.330 BC) was renowned for his sharp tongue and feuded with Callisthenes during their time with Alexander.[5] On his return journey from India, Anaxarchus was thrown into a mortar and pounded to death with pestles by his old enemy the Cypriot tyrant Nicocreon.[6] Pyrrho returned safely to Greece from his trip to India.

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[1] *Plutarch's Lives*, **2**, 469.

[2] McCrindle 1893, 386-392.

[3] *Plutarch's Lives*, **2**, 520-521.

[4] *Plutarch's Lives*, **2**, 512-513. See also McCrindle 1893, 392.

[5] *Plutarch's Lives*, **2**, 510.

[6] *Diogenes Laertius*, **2**, 471-473.

## 2.2.3 The tetralemma in Greece

### Pyrrho influenced by Indians

Pyrrho (c.365-c.275 BC) gathered a following in Elis after his return from India. Diogenes Laertius (c. early 3rd century AD) describes Pyrrho in his *Lives of Eminent Philosophers* as having been influenced by Indians during his trip to India with Anaxarchus:

> According to Apollodorus in his *Chronology*, he was first a painter; then he studied under Stilpo's son Bryson: thus Alexander in his *Successions of Philosophers*. Afterwards he joined Anaxarchus, whom he accompanied on his travels everywhere so that he even forgathered with the Indian Gymnosophists and with the Magi. This led him to adopt a most noble philosophy, to quote Ascanius of Abdera, taking the form of agnosticism and suspension of judgment.[1]

Diogenes Laertius also refers to a work by Antigonus, a younger contemporary of Pyrrho:

> This is what Antigonus of Carystus says of Pyrrho in his book upon him. At first he was a poor and unknown painter, and there are still some indifferent torch-racers of his in the gymnasium at Elis. He would withdraw from the world and live in solitude, rarely showing himself to his relatives; this he did because he had heard an Indian reproach Anaxarchus, telling him that he would never be able to teach others what is good while he himself danced attendance on kings in their court.[2]

Burnet commenting on this passage says: "We see that those who knew Pyrrho well described him as a sort of Buddhist *arhat*, and that is doubtless how we should regard him."[3] Pyrrho left no written works. He is known through his followers, especially Timon.

Timon (c.322-c.232 BC) eulogized Pyrrho in his works. A passage from a work by Aristocles of Messene (late first century BC) preserved in Eusebius of Caesarea's (c.264-c.339 AD) *Praeparatio Evangelica* (Preparation of the Gospel) describes Pyrrho's views:

> There have been some among the ancients, too, who have issued this utterance, whom Aristotle has argued against. Pyrrho of Elis was also a powerful advocate of such a position. He himself has left nothing in writing; his pupil Timon, however, ... saying about each single thing that it no more [1] is than [2] is not or [3] both is and is not or [4] neither is nor is not.[4]

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[1] *Diogenes Laertius* (IX 61), trans. Hicks 1925, **2**, 475.

[2] *Diogenes Laertius* (IX 62-63), trans. Hicks 1925, **2**, 475-477.

[3] Burnet 1920, 229.

[4] *Praeparatio Evangelica* (XIV 18.1-3), trans. Bett 1994, 140. See also De Lacy 1958, 69; Long, Sedley 1987, **1**, 14-15; and McEvilley 2002, 453.

These four bear a striking resemblance to the fourfold scheme of predication or tetralemma (also called the quadrilemma) so often used in the early Buddhist works.[1] Flintoff claims that:

> ... here we have in a passage that goes perhaps as close to Pyrrho as anything that we have, the quadrilemma, a mode of thinking hitherto without precedent in Greek philosophical or indeed any other thinking. ... But interestingly just at this point where he seems to be most original in relation to Greek thought, he is quite commonplace as measured by Indian.[2]

The "ancients ... whom Aristotle has argued against" (mentioned in the *Praeparatio Evangelica*) may refer to Aristotle's unnamed opponents in his *Metaphysics*. Aristotle says:

> For he says neither [1] 'yes' nor [2] 'no'; but [3] 'yes and no'; and again he denies both of these and says [4] 'neither yes nor no'.[3]

This unnamed opponent is probably not Pyrrho for chronological reasons.[4] If Pyrrho left India with Alexander in 325 BC and Aristotle died three years later in 322 BC, then this leaves very little time for Pyrrho to return to Greece and disseminate the new ideas he picked up in India and for them to appear in the *Metaphysics*. It is more likely that there were Greeks before Pyrrho who argued in the way objected to by Aristotle in the *Metaphysics*.

Pyrrho's views died out after Timon's death (c.232 BC) only to be revived by Aenesidemus (1st century BC) and later championed by Sextus Empiricus (fl. c.200 AD). Sextus Empiricus also adopts the four logical forms of statements. Frenkian identifies 14 instances where Sextus employs them and quotes the following four examples:[5]

> Moreover, the "something" which is, they declare, the highest genus of all, is either [1] true or [2] false or [4] neither false nor true or [3] both false and true.[6]

> For this is a genus which stands above all others and is itself subordinate to no other. This, then, is either [1] true or [2] false or at once [3] both true and false or [4] neither true nor false.[7]

> Thus presentation, in the doctrine of the Stoics, is hard to define. In presentations, also, there are many and various distinctions, of which it will be enough to record the

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[1] Bett 1994, 160.

[2] Flintoff 1980, 92-93.

[3] *Metaphysics* (IV 4, 1008a 30-35), trans. McKeon 1941, 742. See also Bett 1994, 160.

[4] McEvilley 2002, 496 says: "perhaps Pyrrho".

[5] Frenkian 1957, 119.

[6] *Outlines of Pyrrhonism* (II 86), trans. Bury 1933, 207.

[7] *Against the Logicians* (II 32), trans. Bury 1935, 255.

following. Some of them are [1] probable, some [2] improbable, some at once [3] both probable and improbable, some [4] neither probable nor improbable.

And of the probable presentations some are [1] true, some [2] false, some [3] both true and false, some [4] neither true nor false.[1]

The early Buddhist works discuss only true and false. That is, straightforward, unambiguous statements are only either true or false. True and false are said to not apply to misleading statements and consequently there is no discussion of them as being true, false, or any combination of these. If there is an element of Buddhist or Indian influence here it is in the use of the fourfold scheme of predication (tetralemma), not in any multivalued logic.

Frenkian points out that the last two of the four examples quoted here were given by Sextus as sayings of the Stoics. The ideas in these two passages, he says, "belong to the Stoics, but the form of the quadrilemma has nothing to do with Stoic philosophy."[2] McEvilley challenges this view claiming that the Stoics discussed statements that are both true and false. He says: "skeptical mottoes verging on the fourfold negation had been common in Greece for centuries", but he is unable to provide one clear example where all four forms of predication (his fourfold negation) apply to a single subject in any Stoic source.[3] Frenkian argues that this points to the undoubted Indian origin of the quadrilemma or tetralemma,[4] and Flintoff agrees.[5]

## Indian origin of Greek scepticism

Sextus Empiricus is the major surviving source for Greek scepticism. The Indian eel-wrigglers, especially Sañjaya, are also referred to as sceptics by modern commentators.[6] Opinion is divided over whether or not this fourfold scheme of predication was originally developed by sceptics like Sañjaya. According to Raju, it was Sañjaya who first formulated what he calls the four-cornered negation.[7] Keith also claims that Sañjaya seems to have been the first to formulate the four possibilities of existence, non-existence, both, and neither, and the Buddha makes lavish use of this device.[8] In contrast to these opinions, Jayatilleke claims that "the credit for adopting this scheme should not go to Sañjaya alone, but should be shared

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[1] *Against the Logicians* (I 241-244), trans. Bury 1935, 131.

[2] Frenkian 1957, 123.

[3] McEvilley 2002, 496-497.

[4] Frenkian 1957, 121.

[5] Flintoff 1980, 92-93.

[6] Basham 1951, 17, claims Sañjaya is not a sceptic but an agnostic. See also Keith 1923, 303.

[7] Raju 1954, 694.

[8] Keith 1923, 303.

by all these Sceptical schools of thought." He continues: "It also appears to be equally plausible that it was the Buddhists who were the first to innovate and adopt this fourfold scheme." Jayatilleke rejects Keith's claim saying: "We cannot therefore agree with Keith, when he dogmatically gives the credit to Sañjaya for being the 'first to formulate the four possibilities', when we know nothing about Sañjaya apart from the accounts we get of him in the Buddhist texts."[1] For McEvilley, "it is impossible to separate the wording of the Buddhist authors from that of the Skeptic being reported on."[2] The original author of this fourfold scheme of predication remains unclear, but it is certainly a very common feature of the early Buddhist works and was subsequently used by many Buddhist logicians.

If the views of Sañjaya or the Buddha did influence Pyrrho when he was in India then this suggests that Greek scepticism may well have been influenced by Indian scepticism. Many modern scholars hold the view that Pyrrho was influenced by Indian scepticism. Patrick, for instance, says:

> We have in Pyrrho's teachings the earliest well attested instance of Indian influence on Greek philosophy. This influence was a consequence of Pyrrho's residence in India in the retinue of Alexander the Great, as a member of the royal court, where we are told that he associated with Gymnosophists and Magi.[3]

But Patrick concludes:

> In a final estimate, however, of the influence of Buddhism on Pyrrhonism, we must characterize it as comparatively slight. Traces of oriental influence may be conspicuous in Pyrrhonism, but they are traces, not essentials. Pyrrho's previous study and natural disposition had prepared him to assimilate something of what he learned of oriental philosophy, but the influence of Buddhism upon him was largely in method rather than in the essentials of belief.[4]

Woodcock describes Pyrrho's philosophy as "nearer in essentials, and even in details, to doctrines current in India among Jain and Buddhist teachers than any Greek system of thought before the neo-Plantonists. The Pyrrhonian philosophy may well have been the most significant immediate gift that Alexander's expedition brought to Greece from India."[5] Conze, following Robin and others, says that "the sceptic philosophy was something quite new to Greece, and that none of the preceding indigenous Greek developments led up to it. One can

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[1] Jayatilleke 1963, 138.

[2] McEvilley 2002, 495; see also 412.

[3] Patrick 1929, 57; see also Patrick 1931, 535.

[4] Patrick 1929, 63-64.

[5] Woodcock 1966, 26-27.

therefore infer with some probability that Pyrrhon acquired his views in India or Iran".[1] Barua agrees saying: "If it be admitted that Pyrrho of Elis had imbibed his sceptical bias from an Indian school of sceptics, one can at once see that the sceptical propaganda such as those of Sañjaya were the antecedents of critical philosophies alike in India and in Europe."[2]

McEvilley, on the other hand, disagrees with these views. He claims, "Pyrrho must have imbibed the main attitudes of his philosophy from Greek teachers, before the visit to India."[3] His arguments rest on the point that Pyrrho could have gathered various elements together from Greek sources as early as Democritus (middle 5th - 4th century BC) and combined these to form the tetralemma. According to McEvilley:

> ... it is possible that Indian influence could have intruded somewhere in the long evolution of this formula from Democritus to Pyrrho. But clearly there is no need to postulate it.[4]

And, similarly he says:

> ... we cannot rule out the possibility that Pyrrhon brought back some bits or pieces of thought or formulation which seemed useful in terms of attitudes he already held. An obvious candidate is the fourfold negation as preserved by Pyrrhon and Sextus.[5]

## A case for influence

The fourfold scheme of predication is explicitly formulated and frequently found in the early Buddhist works. The so-called eel-wrigglers who refuse to accept or deny any of these four statements pre-date Pyrrho and the ancients that Aristotle argues against. Also, the use of these four in Buddhist works is very common whereas by contrast they are not so commonly found in Greek works. Pyrrho's refusal to affirm any of these four fits well with views that he would have found in India. Other Greeks may have formulated these four and also denied all four independent of Pyrrho, and Pyrrho could even have been aware of this. But the use Pyrrho made of the fourfold scheme of predication and the denial of all four by Sextus corresponds very closely to views found in ancient Indian philosophy.

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[1] Conze 1951, 141. See also Reale 1985, 3, 310-312.

[2] Barua 1921, 331-332.

[3] McEvilley 2002, 492. See also McEvilley 1982, 19.

[4] McEvilley 2002, 497.

[5] McEvilley 1982, 22-23.

Other ideas that influenced Pyrrho's lifestyle could also have come from India,[1] but this is not to say that all of Pyrrho's ideas without exception are exclusively Indian, only that some of them may be and the tetralemma is one such possibility.

This position depends on two points: firstly the early Buddhist works must contain frequent and explicit formulations of the tetralemma, which is easily established. The second point is that the contents of the early Buddhist works must belong to a period earlier than Pyrrho's visit to India, which is not so easily established. The problem is that the early Buddhist works now found in the various versions of the Buddhist Canon were not written down until well after Pyrrho's visit. This leaves open the possibility that the tetralemma was first developed in Greece and then introduced into India by the Greeks and subsequently incorporated into these early Buddhist works purporting to be from an earlier time in India. To support this argument, there is the fact that the Buddha mentions the Greeks when he debates with Assalāyana about the caste system in the *Assalāyana Sutta* (To Assalāyana):[2]

> What do you think, Assalāyana? Have you heard that in Yona and Kamboja and in other outland countries there are only two castes, masters and slaves, and that masters become slaves and slaves masters?[3]

The Buddha mentions Yona and Kamboja as examples of countries that do not have castes that are determined by birth. Horner notes that "Yona" is probably the Pāli equivalent for Ionia or Bactria, and the Ionians are the Bactrian Greeks.[4] Alexander conquered Bactria just before he invaded India in 326 BC, which is after the Buddha had died. This chronological problem could be explained away by arguing that the Buddha's dates are too early, or Alexander's dates too late, or that there were Greeks in Bactria during the Buddha's lifetime. The dates are difficult to change, but the third argument is more easily attempted.

It appears that Greeks visited India before Alexander's historic visit in 326-325 BC. Herodotus (484-424 BC) has preserved in his *History* a passage from a work by Skylax of Caryanda. Skylax was the first to write about India in Greek. His work now exists only in fragments, and one reference is preserved in Aristotle's *Politica*.[5] Herodotus quotes Skylax on his voyage down the Indus. Darius the king of Persia (522-486 BC) sent Skylax to explore the

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[1] See Frenkian 1957, Flintoff 1980.

[2] Sutta 93 of *Majjhima Nikāya*, trans. Horner 1954-59, 2, 340-349; Bodhi 1995, 763-770.

[3] *Majjhima Nikāya* (ii 149), trans. Bodhi 1995, 764-765.

[4] Horner 1954-59, 2, 341 note 4. See also Bodhi 1995, 1296 note 872.

[5] Smith, Ross eds 1921 (VII 14, 1332b 20-25). For other fragments see Arora 1996, 111-112.

Indus river down to its mouth around 518-515 BC. The passage ends: "After this voyage was completed, Darius conquered the Indians, and made use of the sea in those parts".[1]

Darius annexed the Indus valley and made it the twentieth *satrapy* of the Persian Empire. Greeks were involved in the administration of the Persian Empire and this brought northwest India into contact with Greeks. The earliest surviving Sanskrit grammar, Pāṇini's *Aṣṭādhyāyī* which dates from about 350 BC, also mentions the Greeks. It contains a grammatical rule (IV I.19) involving the word Yavana. "Yavana" or "Yona" is derived from the old Persian "Yauna" meaning the Ionian Greeks of Asia Minor, but it was used in India (during this period) simply to mean any Greek. The grammatical reference to the word Yavana also suggests that Greeks were known in India when northwest India was under Persian rule.[2] Pāṇini was a native of northwest India and his commentator Kātyāyana says that the feminine form *Yavanānī* is used for instance in *Yavanānī lipi*, the Greek script. The Greek script was possibly known through Greek legends on coins.[3] This suggests that Greeks were known in India during the Buddha's lifetime and hence the reference to Greeks in the *Assalāyana Sutta*.[4]

Although the Greeks may well have been known in India before Alexander's visit, there is still the problem that Pyrrho or other Greeks who came with Alexander could have introduced the tetralemma into India. It could then have found its way into the early Buddhist works appearing to be something which had occurred in India at a much earlier time. There is no evidence that this actually happened. In fact there is evidence that it did not happen. There is some question as to whether all of the events described in the early Buddhist works are actual historical events. Hayes, for example, says that the early Buddhist works are "a large literary creation, which is fictional but based loosely on historical events."[5] But there is little doubt about the tetralemma. It is not limited to a few obscure references as it is in Greek works. In fact, given the frequency, clarity and uniformity of its use in the early Buddhist works, given that it is the defining characteristic of the ancient eel-wrigglers so prominently

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[1] *Herodotus* (IV 44), trans. Rawlinson 1910, 320-321.

[2] Rapson 1922, 540.

[3] Agrawala notes that Keith reported, "There is also a striking piece of evidence that Greek writing was known in North India before Alexander's time: coins have been found with Greek inscription of pre-Alexandrian date." Quoted by Bühler in his *Indian Palaeography*, p. 27. See Agrawala 1951, 278.

[4] See also Dasgupta 1935.

[5] Hayes 1988, 42.

discussed in these works, and given that it was the standard way to present the logical alternatives in philosophical discussion, it is difficult to imagine how the tetralemma could have been unknown in the Buddha's time and only introduced later from Greece. The early Buddhist works do not refer to Greece or Greeks in connection with the eel-wrigglers or any philosophical speculation. In fact the Greeks that came with Alexander remained in control of northwest India for only a few short years.

The Buddha is believed to have lived well before Alexander's historic visit in 326-325 BC and thus there is little possibility of any Greek influence during this early period of Indian history. Also, the Indian tradition of philosophical debate that the Buddha inherited began well before Greek philosophy and it is thus quite independent of any Greek influence. The period after Alexander's visit provides greater opportunity for Greeks to influence Buddhist logic. This is examined in the following chapter.

# Chapter three: Early works on debate

This chapter examines some early examples of Buddhist logic and what influence, if any, the Greeks may have had in its development. Four literary sources are used for this examination. These are the *Kathāvatthu* (Points of Controversy), the *Vijñānakāya* (Consciousness Group), the *Yamaka* (Pairs), and the *Milindapañha* (Milinda's Questions). These works cover the period from after Alexander's visit in the fourth century BC down to the first century BC. Greeks were present in India during these times and some Geeks became Buddhists, thus the opportunity for the Greeks to influence Buddhist logic certainly existed during this time.

## 3.1 Historical background

### 3.1.1 Greek impressions of India

Alexander left India late in 325 BC within two years of entering the country. He appointed governors, including Philip, supported by military forces to govern the conquered regions of India. The Greeks who remained in India did not like it there and within a few months of Alexander's departure, the Greek forces under Philip mutinied and Philip was killed.[1] Alexander died of fever in Babylon in June 323 BC less than two years after leaving India. The turmoil that followed Alexander's death provided the opportunity for the Indian forces to drive the Greeks back across the Indus. Within two years of Alexander's death, Greek power east of the Indus had been extinguished. The Indian forces were led by an Indian king the Greeks called Sandracottos.

Sandracottos was none other than Candragupta. He is credited with driving the Greeks out of India and founding the Maurya dynasty. He was probably born in the Punjab and may even have met Alexander in India. Soon after Alexander's death, Candragupta led an uprising that expelled the remaining Greek forces and thereby made Candragupta sovereign of the Punjab and the Indus valley. He next marched against Magadha (Central India) and took the capital Pāṭaliputra (modern Patna). Candragupta then had control over the regions of both the Indus and the Ganges.

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[1] Rapson 1922, 386.

Meanwhile, Seleucus Nikator finally gained control of Alexander's dominions in Asia. In 305 or 304 BC, Seleucus attempted to resume Alexander's campaign in India. He crossed the Indus but it is unclear whether Candragupta and Seleucus actually met in battle. A treaty was agreed to, where Seleucus ceded to Candragupta the regions west of the Indus to the southern slopes of the Hindu Kush (northern Afghanistan). These regions included Kabul and Kandahar. In return Candragupta presented Seleucus with 500 elephants. A matrimonial alliance may have formed part of the treaty. If it did then a daughter or female relative of Seleucus would have been given in marriage to Candragupta or one of his sons. Seleucus then withdrew to the regions west of the Hindu Kush and Candragupta controlled the lands from the east of the Hindu Kush right across northern India. Seleucus also sent Megasthenes as his ambassador to Candragupta's capital.

Megasthenes is believed to have visited Candragupta's capital at Pāṭaliputra a number of times from about 302 to 296 BC. He produced a work entitled the *Indika* which became the main source of information on India for classical writers. It now survives only in fragments scattered amongst the works of other authors. McCrindle has gathered the surviving fragments together. Megasthenes discuses Indian philosophy among many other subjects in his *Indika*. A fragment preserved in Clement of Alexandria's (150-215 AD) *Stromateis* (Miscellany) says:

> That the Jewish race is by far the oldest of all these, and that their philosophy, which has been committed to writing, preceded the philosophy of the Greeks, Philo the Pythagorean shows by many arguments, as does also Aristoboulos the Peripatetic, and many others whose names I need not waste time in enumerating. Megasthenes, the author of a work *On India*, who lived with Seleukos Nikator, writes most clearly on this point, and his words are these:- *"All that has been said regarding nature by the ancients is asserted also by philosophers out of Greece, on the one part in India by the Brachmanes, and on the other in Syria by the people called the Jews."*[1]

This same passage is also found in the works of two other authors which McCrindle notes.[2] Clement appears to understand Megasthenes as supporting his view that Jewish and Indian philosophy are older than Greek philosophy. Clement continues:

> Philosophy, then, with all its blessed advantages to man, flourished long ago among the barbarians, diffusing its light among the Gentiles, and eventually penetrated into Greece. Its hierophants were the prophets among the Egyptians, ... and among the Indians the Gymnophists, and other philosophers of barbarous nations.[3]

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[1] Fragment XLII. McCrindle 1877b, 244. Reprinted in McCrindle 1877a, 103.

[2] Fragments XLII.B and XLII.C. See McCrindle 1877b, 244. Reprinted in McCrindle 1877a, 104.

[3] Fragment XLIII. McCrindle 1877b, 244. Reprinted in McCrindle 1877a, 104.

The *Geography* of Strabo (c.63 BC-19 AD) contains some of what Megasthenes says about Indian philosophers:

> Megasthenes makes a different division of the philosophers, saying that they are of two kinds – one of which he calls the Brachmanes, and the other the Sarmanes. The Brachmanes are best esteemed, for they are more consistent in their opinions.

The opinions held by Brahmans are described as being similar to those held by Greeks:

> On many points their opinions coincide with those of the Greeks, for the Brachmanes say with them that the world was created, ... that it is of a spheroidal figure, ... that in addition to the four elements there is a fifth ... Concerning generation, and the nature of the soul, and many other subjects, they express views like those maintained by the Greeks. They wrap up their doctrines about immortality and future judgement, and kindred topics, in allegories, after the manner of Plato. Such are his statements regarding the Brachmanes.

Regarding the *śramaṇas* (ascetics),[1] Strabo says:

> Of the Sarmanes he tells us that those who are held in most honour are called the Hylobioi. ... Next in honour to the Hylobioi are the physicians.[2]

Strabo describes ascetic philosophers:

> The Pramnai are philosophers opposed to the Brachmanes, and are contentious and fond of argument.[3]

These fragments indicate that the first Greeks to visit India found Indian philosophy to be very much like their own. Regarding the age of these systems, the Greeks apparently considered Indian philosophy to be older than Greek philosophy. Some Greeks even adopted Indian systems, Buddhism in particular, and then played a part in the spread of Buddhism in the third century BC.

## 3.1.2   Greek Buddhists

Candragupta reigned for about 24 years, c.324-300 BC. He was succeeded by his son Bindusāra in the early years of the third century BC. Bindusāra was called Amitrochates by the Greeks. He maintained friendly relations with Seleucus who sent Deïmachus to succeed

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[1] Warder 1956, 44 describes *śramaṇa* (Pāli: *samaṇa*) as applying to teachers who were not Brāhmaṇas which includes most if not all schools other than those following the Vedas. See also Warder 1971, 31.

[2] Fragment XLI. McCrindle 1877b, 243-245. Reprinted in McCrindle 1901, 65-67. See McCrindle 1893, 358-359 (Appendices, Note W. Indian Sages). See also Rapson 1922, 420.

[3] McCrindle 1901, 76 (see note 2). Rapson 1922, 421, says: "This should not be emended to *Sramnai*, ... The people intended are undoubtedly the *prāmāṇikas*, the followers of the various philosophical systems, each of which has its own view as to what constitutes *pramāṇa*, a 'means of right knowledge'."

Megasthenes as ambassador at Bindusāra's court around 296 BC. Seleucus died about 280 BC and was succeeded by his son Antiochus Soter. As evidence of the friendly relations between the Indian and Greek monarchs, there is an interesting account preserved in the writings of Athenaeus. Bindusāra requested Antiochus to send him figs, wine and a philosopher to teach him to argue, but was told that philosophers were not for sale amongst the Greeks.[1] Bindusāra's reign lasted about 25-28 years, after which he was succeeded by his son Aśoka around 270-273 BC. There is some speculation that a matrimonial alliance was part of the treaty agreed to by Candragupta and Seleucus and so Aśoka may have had a Greek mother or grandmother. There is no definite proof of this, however, since polygamy was common.[2]

Aśoka was perhaps the greatest king of ancient India. He extended his empire by conquering Kaliṅga (Orissa), but the sight of the miseries of war caused him to abandon his ways and adopt Buddhism. He issued royal proclamations exhorting all to follow the Buddhist code of ethics. These so-called *Rock Edicts* were inscribed on rocks and stone pillars throughout his empire. Aśoka was active in constructing roads, digging wells, and building hospitals, including animal hospitals. He gave up hunting, discouraged the killing of animals, designated some wild animals not required for food as protected animals, built many Buddhist shrines and sponsored Buddhist councils.

An important council was held in Aśoka's capital at Pāṭaliputra around 250 BC.[3] After this council, Aśoka sent nine Buddhist missions to various places throughout his empire. Two of these nine missions were led by Greeks. Dhammarakkhita (Dharmarakṣita) went to the western land of Aparantaka (Gujarat) which had a Greek governor at the time and probably a significant Greek community as well. The other Greek, Mahārakkhita (Mahārakṣita), went to 'Yona Country' or 'Greek Country'.[4] This Greek Country no doubt refers to a region of Aśoka's empire where many Greeks lived, probably in the northwest around Kabul and Kandahar. These regions were originally part of Alexander's empire but had been ceded to Aśoka's grandfather Candragupta by Seleucus. Karttunen suggests the region of Kandahar (southern Afghanistan) as most likely since two of Aśoka's *Rock Edicts* have been found

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[1] Rapson 1922, 432-433.

[2] Rapson 1922, 431.

[3] A number of dates ranging from 255 BC to 246 BC have been suggested for this council by various authors.

[4] Karttunen 1997, 267 (sources in note 84).

there inscribed in Greek.[1] These inscriptions were meant for the Greek community that must have been there since Alexander's visit some 75 years earlier. Many Greeks are believed to have been living in Kashmir and Gandhāra (northern Pakistan) at the time, and the early Buddhist works show that Aśoka sent a mission led by Majjhantika to that area also.

Buddhism seems to have appealed to the Greeks, perhaps because there was no distinction made between race or caste in Buddhism.[2] Many Greeks living in northwest India must have became Buddhists. The *Mahāvaṃsa* or the *Great Chronicle of Ceylon* (4th century AD) records how a large number of Buddhist monks came from Alasanda (Alexandria) the city of the Yonas (Greeks) to attend a festival in Sri Lanka in the second century BC.[3] Geiger notes that the Greek city was probably one founded by Alexander near Kabul.[4] If the Greeks did play an active role amongst Buddhists, it is possible that they also played some role in the Buddhist Council at Pāṭaliputra, and possibly also in the production of the *Kathāvatthu*, the major document compiled as a result of the Pāṭaliputra Council.

## 3.2    The *Kathāvatthu*

### 3.2.1   The work

According to tradition the *Kathāvatthu* (Points of Controversy) was compiled at a Buddhist council held in Aśoka's capital Pāṭaliputra (Patna) around 250 BC.[5] This council was convened in order to settle disputes which had arisen regarding the proper interpretation of the Buddha's teachings. Moggaliputta-tissa (Upagupta), Aśoka's spiritual advisor, acted as president at the council and he is credited with compiling the *Kathāvatthu*.

The existing version of the work documents over 200 controversial points which are arranged in 23 chapters in the English translation by Aung and Rhys Davids.[6] There is some doubt as to whether or not all of these topics were in the original version of the work. Some topics may have been added to the original collection.[7] It is equally possible that some of the

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[1] Wheeler 1968, 65-70; Karttunen 1997, 267-268.

[2] Woodcock 1966, 55.

[3] Translated in Geiger 1912, 194 (XXIX 39-40).

[4] Geiger 1912, 194 note 3.

[5] Warder 1958, 94; and Matilal 1998, 34, suggest that the *Kathāvatthu* probably belongs to the 2nd century BC.

[6] Aung, Rhys Davids 1915.

[7] Nyanatiloka 1938, 37; Warder 1970, 289; Warder 1971, 82; and Frauwallner 1995, 86.

topics were controversial well before the council and therefore contributed to the reasons for holding the council.[1] The discussion below assumes that a document was drawn up in India in the third century BC that contained some of the topics in the extant version of the *Kathāvatthu*. The interest is not in which particular topics existed at what particular time, but in the system of logic used in the debates recorded in the work.

The *Kathāvatthu* not only records the controversial points but also records the way in which they were originally debated. The work presents a series of arguments with a strict adherence to a dialectical system.[2] The logical rules are not formulated, but the systematic procedure followed throughout the work suggests the existence of a logical system. This makes the *Kathāvatthu* one of the best sources for the system of logic used in India in the third century BC.

Rhys Davids explains that only the first topic is translated with all its detailed questions and answers exactly as it appears in the Pāli original. This serves as a model for the dialectical method used throughout the work.[3] The remaining topics appear with only the substance of the controversial point translated into English. The ever-recurring formulae of refutation and counter-refutation found in the Pāli original has been omitted from the English translation. The translation of the first topic with all its details is used below as a model for the system of debate found throughout the *Kathāvatthu*.

## 3.2.2   The system of debate

**Style of debate**

A debate begins with each party declaring a position and ends when one party is defeated. To defeat an opponent one party must force the other to abandon their original position. In order to force an opponent to abandon their original position each party argues that the opponent's position leads to unacceptable consequences. The consequence of a position is considered unacceptable either because it is simply illogical or because it is incompatible with the original position. An admission by either party that they have abandoned their original position brings the debate to a definite conclusion.

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[1] Kalupahana 1992, 132.

[2] Randle 1930, 14 note 2, has "insufferably tedious".

[3] Rhys Davids in Aung, Rhys Davids 1915, lii.

The aim of each debater, therefore, is simply to force an opponent to abandon their original position. One party tries to prove that an opponent's position is wrong while the other party attempts to defend that position. When one party is faced with overwhelming evidence contradicting their position then they have no option but to abandon that position. No attempt is made to defeat an opponent by presenting arguments which support some position other than the one endorsed by an opponent. No amount of argument in support of an alternative position would persuade a stubborn opponent to abandon their own position. However, one devastating argument against some position should persuade a reasonable opponent to abandon that position. The consequence of this style of debate is that arguments are typically always negative, i.e. always against some position.

## Structure of a debate

The debate on the first topic is divided into primary and secondary debates. The primary debate focuses on the main issue, i.e. whether or not one term A is another term B. The secondary debates examine the terms used in the primary debate. The primary debate consists of eight sections. These are whether or not:

1. A is B (in fact)
2. A is not B (in fact)
3. A is B everywhere (in space)
4. A is B always (in time)
5. A is B in everything (in particular objects)[1]
6. A is not B everywhere (in space)
7. A is not B always (in time)
8. A is not B in everything (in particular objects)

These eight sections consist of four pairs; the first two consider whether or not A is in fact B, firstly in the affirmative and then in the negative. The next three sections (3 – 5) are all affirmative and consider whether or not A is B in all circumstances: i.e. in all places, on all occasions, and relative to all things. The last three sections (6 – 8) consider the negatives of the previous three sections. The pattern of debate in each of these eight sections is the same, it consists of an argument with five parts:

1. The way forward (*anuloma*)
2. The way back (*paṭikamma*)
3. The refutation (*niggaha*)
4. The application (*upanayana*)
5. The conclusion (*niggamana*)

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[1] Randle 1930, 13, has "in all cases" rather than "in everything".

The name for each step in the five-part argument does not occur in the original work. These names are found in commentaries which date from a later period. However the arguments are arranged in the original strictly according to these five steps. The pattern of argument used in the five steps is the same in each of the eight sections making up the primary debate. The same pattern of argument is also used in the secondary debates. Thus an examination of the five-part argument used in the first of the eight sections in the primary debates exemplifies the model used throughout the entire work. The focus in this examination is on the form of the five-part argument rather than on the content of those arguments.

## 3.2.3   Symbolisation

The first debate in the *Kathāvatthu* is between a Theravādin (follower of one of the Buddhist schools) and a Puggalavādin (someone who believes in the existence of a person, understood as a personal entity or soul).[1] The form of argument used in these debates is more easily discussed when the arguments are reduced to their logical components and presented symbolically. This obscures the content of the argument but clarifies its form. The method of symbolisation is discussed before the actual arguments found in the first debate are presented. The first debate involves the following three terms:

1.   The soul.
2.   Known as a real and ultimate fact.
3.   Known in the same way as any other real and ultimate fact is known.

These three terms are used in two propositions:

1.   The soul is known as a real and ultimate fact.
2.   The soul is known in the same way as any other real and ultimate fact is known.

Using letters 'A', 'B' and 'C' to represent terms, these two propositions are symbolised by:

1.   A is B
2.   A is C

Propositions are not symbolised by a single symbol, such as the letter 'p' or 'q'. Symbols are used for each term in a proposition so that it is clear when the same term occurs in more than one proposition. Each party in the debate questions the other, asking:

1.   Is A B?
2.   Is A C?

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[1] Kalupahana 1992, 134 ff., translates "Puggalavādin" as "Personalist".

When a party replies "no" to a question, the denial is understood as applying to the whole proposition rather than to a term within the proposition. The '~' sign is used for negations. It has the usual meaning of 'it is not the case that'. Brackets are used to indicate the scope of the negation. For example, the brackets in '~ (A is B)' are used to indicate that the whole proposition 'A is B' is negated. Terms within propositions are also negated. For instance:

1. The soul is not known as a real and ultimate fact.
2. The soul is not known in the same way as any other real and ultimate fact is known.

These two propositions are symbolised by:

1. A is ~ B
2. A is ~ C

The negation within these propositions applies to the second term only. This is another reason not to symbolise a proposition with a single symbol.

## 3.2.4   The five-part argument

The five-part argument discussed below forms the first of the eight sections (the affirmative) in the primary debate on the first controversial topic (the existence of the soul). Each step involves a short argument. The original text for each step is quoted in full and then the argument is symbolised using the method described above. The pattern of argument employed in each step is described and then the logical principles involved are discussed last. The names of the proponent (*Theravādin*) and the respondent (*Puggalavādin*) have been added to the English translation for clarification. These names do not appear in the Pāli original.

### Step 1.  The way forward

In the first step of the five-part argument, the proponent asks the respondent to declare their position and then the proponent presents an argument against the respondent's position.

[1] Theravādin: Is the soul known as a real and ultimate fact?[1]
Puggalavādin: Yes.
Theravādin: Is the soul known in the same way as a real and ultimate fact is known?
Puggalavādin: No, that cannot be truly said.
Theravādin: Acknowledge your refutation:

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[1] Following the style of translation in Ganeri 2001a, 487-491, as opposed to Aung, Rhys Davids 1915, 8 ff.

[2] If the soul is known as a real and ultimate fact, then indeed, good sir, you should also say, the soul is known in the same way as any other real and ultimate fact is known.

[3] That which you say here is wrong, namely, that we should say, "the soul is known as a real and ultimate fact", but we should not say, "the soul is known in the same way as any other real and ultimate fact is known."

[4] If the latter statement cannot be admitted, then indeed the former statement should not be admitted either.

[5] In affirming the former, while denying the latter, you are wrong.

The Puggalavādin declares that:

(1) (A is B) but ~ (A is C)

And the Theravādin presents this counter-argument:

(2) If (A is B) then (A is C)

(3) ~ ((A is B) but ~ (A is C))

(4) If ~ (A is C) then ~ (A is B)

(5) ~ ((A is B) and ~ (A is C))

Assertions like "we should not say" or "you are wrong to say " are treated as negations that apply to the whole proposition. The connective 'if ... then ...' remains without being symbolised since it is unclear what relation is intended here, whether some kind of implication or the logical consequence relation. The other connectives, the conjunctions 'and' and 'but', are not symbolised simply to maintain consistency of style.

The pattern of argument in the way forward runs as follows: the Puggalavādin accepts the first proposition but not the second (both in line 1). The Theravādin then argues: if the first then the second (2), which is contrary to your position (3). And if not the second then not the first (4), thus your position is wrong (5).[1]

## Step 2. The way back

In the second step of the five-part argument, the roles of the two parties are reversed. The respondent now asks the proponent to declare their position on the same issue and then the respondent presents an argument against the proponent's position.

[1] Puggalavādin: Is the soul not known as a real and ultimate fact?
Theravādin: No, it is not known [i.e. the Theravādin agrees that the soul is not so known].

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[1] The convention of referring to propositions as "the first" and "the second" is not found in the Pāli version of the *Kathāvatthu*. It was used by the Stoics. See Kneale, Kneale 1962, 158-176.

Puggalavādin: Is the soul not known in the same way as any real and ultimate fact is known?

Theravādin: No, that cannot be truly said.

Puggalavādin: Acknowledge the rejoinder:

[2] If the soul is not known as a real and ultimate fact, then indeed, good sir, you should also say, the soul is not known in the same way as any other real and ultimate fact is known.

[3] That which you say here is wrong, namely, that we should say, "the soul is not known as a real and ultimate fact", but we should not say, "the soul is not known in the same way as any other real and ultimate fact is known".

[4] If the latter statement cannot be admitted, then indeed the former statement should not be admitted either.

[5] In affirming the former, while denying the latter, you are wrong.

The Theravādin declares that:

(1) (A is ~ B) but ~ (A is ~ C)

And the Puggalavādin presents this counter-argument:

(2) If (A is ~ B) then (A is ~ C)

(3) ~ ((A is ~ B) but ~ (A is ~ C))

(4) If ~ (A is ~ C) then ~ (A is ~ B)

(5) ~ ((A is ~ B) and ~ (A is ~ C))

The pattern of argument in the way back runs as follows: the Theravādin accepts the first proposition but not the second (both in line 1). The Puggalavādin then argues: if the first then the second (2), which is contrary to your position (3). And if not the second then not the first (4), thus your position is wrong (5).

The Puggalavādin in fact uses the very same pattern of argument as the Theravādin has used in the way forward. Thus we find the same form of argument in step 2 as that found in step 1. The only difference is that the roles of the two parties are reversed and some terms are negated.

## Step 3. The refutation

In the third step of the five-part argument (the rejoinder), the respondent re-asserts the refutation used in step 2.

[1] Puggalavādin: But if you imagine we should affirm that the soul is not known as a real and ultimate fact, but we should not also affirm that the soul is not known in the same way as any other real and ultimate fact is known, then you, who have actually assented to

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the very proposition[1] contained in that negative question, must certainly be refuted in the following manner: let us then refute you, for you are well refuted!

[2] If the soul is not known as a real and ultimate fact, then indeed, good sir, you should have said [also] that the soul is not known in the same way as any other real and ultimate fact is known.

[3] What you affirm is false, namely, that the former statement should be affirmed, but the latter should not be affirmed.

[4] If the latter statement is not affirmed, then neither truly can the former be affirmed.

[5] That which you say here, [the former] should be affirmed, but not [the latter], this statement is wrong.

The Puggalavādin presents the Theravādin's position:

(1) (A is ~ B) and ~ (A is ~ C)

And then re-asserts this refutation:

(2) If (A is ~ B) then (A is ~ C)

(3) ~ ((A is ~ B) but ~ (A is ~ C))

(4) If ~ (A is ~ C) then ~ (A is ~ B)

(5) ~ ((A is ~ B) but ~ (A is ~ C))

The pattern of argument in the refutation runs as follows: the Puggalavādin argues that if you accept the first proposition but not the second (both in line 1), then you are refuted by the following argument: if the first then the second (2), which is contrary to your position (3). And if not the second then not the first (4), thus your position is wrong (5).

This refutation is simply a restatement of the same argument previously used in the way back (step 2). The only difference is that here in step 3, the Theravādin's position is stated by the Puggalavādin.

## Step 4. The application

In the fourth step of the five-part argument (the sequel), the respondent rejects the proponent's counter-argument found in step 1.

[1] Puggalavādin: If this refutation is faulty, then look at the parallel procedure in your own argument [against us]. Thus, according to us 'A is B' was true, but 'A is C' was not true. Now we, who admitted these propositions, do not consider ourselves to have been refuted. [You say] you have refuted us; anyway we are not well refuted. Your argument ran:

[2] If we affirmed 'A is B', we must also affirm 'A is C'

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[1] Note the use of the word "proposition" (Pāli: *paṭiññā*, Sanskrit: *pratijñā*) here and in the next two steps.

[4] If we did not admit the truth of 'A is C', neither could we admit the truth of 'A is B'

[5] That we were wrong in assenting to 'A is B' while denying 'A is C'.

The Puggalavādin re-affirms his position:

(1) (A is B) and ~ (A is C)

And rejects the Theravādin's refutation, which is:

(2) If (A is B) then (A is C)

(3) ~ ((A is B) but ~ (A is C))

(4) If ~ (A is C) then ~ (A is B)

(5) ~ ((A is B) and ~ (A is C))

Line 3 in the Theravādin's refutation (used in step 1) appears to be missing in the original text. It is added here for consistency. The pattern of argument in the application runs as follows: the Puggalavādin reaffirms his position, i.e. to accept the first proposition but not the second (both in line 1), and then he rejects the Theravādin's refutation, which is: if the first then the second (2), omits line 3, i.e. 'which is contrary to your position'. And if not the second then not the first (4), thus your position is wrong (5).

Again this refutation is simply a restatement of the same argument previously used in the way forward (step 1). The only difference is that here in step 4 the Theravādin's refutation is stated by the Puggalavādin (and line 3 has been omitted, perhaps inadvertently).

## Step 5. The conclusion

In the fifth step of the five-part argument the respondent claims the proponent's counter-argument has failed and that his own counter-argument has succeeded.

Puggalavādin: No [I repeat], we are not to be refuted thus:

[1] Namely, that my proposition [A is B] compels me to assent to your position [A is C].

[2] Your pronouncement that my proposition [A is B] coupled with my rejection [~ (A is C)] is wrong.

[3] That if I reject 'A is C', then I must also reject 'A is B'.

[5] That I must affirm both or none.

This refutation of yours is badly done. I maintain, on the other hand, that my rejoinder [step 3] was sell done, and that my sequel to the argument [step 4] was well done.[1]

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[1] Material in square brackets has been added by myself.

The Puggalavādin rejects the Theravādin's arguments, which are:

(1) If (A is B) then (A is C)

(2) ~ ((A is B) and ~ (A is C))

(3) If ~ (A is C) then ~ (A is B)

(4) ~ ((A is B) and ~ (A is C))

(5) Either ((A is B) and (A is C)) or ( ~ (A is B) and ~ (A is C))

And claims instead that the rejoinder (step 3) and the sequel (step 4) prove the Theravādin's position is wrong.

Line 4 has been added here to complete the pattern of argument found in the previous steps although it does not appear in the original text. The pattern of argument in the conclusion runs as follows: the Puggalavādin rejects the Theravādin's arguments, which are: if the first then the second (1), so the first and not the second, is wrong (2). And if not the second then not first (3), omits line 4, i.e. 'so again the first and not the second, is wrong'. Therefore, either the first and the second, or not the first and not the second (5).

## Summary of the five-part argument

This completes the five-part argument which forms the first of the eight sections in the primary debate. In summary these five steps are:

1.  The way forward: the respondent declares a position and the proponent presents a counter-argument.
2.  The way back: the proponent declares a position and the respondent presents a counter-argument.
3.  The refutation: the respondent asserts a refutation of the proponent's position.
4.  The application: the respondent rejects the proponent's counter-argument.
5.  The conclusion: the respondent claims that the proponent's counter-argument has failed and that the refutation has succeeded.

## The remaining seven sections

The same five steps are used in all eight sections of each primary debate. These eight sections consist of four pairs. The first section (described above) debated whether A is B. The second section debates whether A is not B. In the second section the roles of the two parties, the proponent (*Theravādin*) and the respondent (*Puggalavādin*), are reversed and 'known' and 'not known' are also reversed in their arguments. However, the same five steps are used and the form of the arguments remains the same as it was in the first section. The first pair of sections therefore consist of ten steps, five for and five against some position. In the

remaining six sections 'everywhere', 'always', and 'in everything' are added. These are first debated in the affirmative in three sections and then again in the negative in the last three sections. Each of these three pairs also consists of ten steps.

### 3.2.5   The secondary debate

The secondary debates examine the terms used in the primary debates. The first of the secondary debates is whether or not the soul is the same as the body. The argument runs as follows:

[1] Theravādin: Is the soul known as a real and ultimate fact, and is the body also known as a real and ultimate fact?

Puggalavādin: Yes.

Theravādin: Is the body one thing and the soul another?

Puggalavādin: No, that cannot be truly said.

Theravādin: Acknowledge your refutation:

[2] If the soul and the body are each known as a real and ultimate fact, then indeed, good sir, you should also have admitted that they are distinct things.

[3] You are wrong to admit the former proposition and not the latter.

[4] If the latter cannot be admitted, neither should the former be affirmed.

[5] To say that the soul and the body are both known as real and ultimate facts, but they are not mutually distinct things, is false.

The Puggalavādin declares that:

(1) (A and B are C) and ~ (A and B are D)

And the Theravādin presents this counter-argument:

(2) If (A and B are C) then (A and B are D)

(3) ~ ((A and B are C) and ~ (A and B are D))

(4) If ~ (A and B are D) then ~ (A and B are C)

(5) ~ ((A and B are C) and ~ (A and B are D))

The pattern of argument is the same as that found in the primary debates. The Puggalavādin accepts the first proposition but not the second (both in line 1). The Theravādin then argues: if the first then the second (2), which is contrary to your position (3). And if not the second then not the first (4), thus your position is wrong (5).

The same arguments are then repeated but with 'body' replaced by 'feelings', then again with 'perceptions', and so on. After the primary and secondary debates on the soul are completed other topics are debated. These debates are extremely numerous but all follow the standard form of argument exemplified by the five-part argument described above.

## 3.2.6 Analysis of the form of argument

**Elements of propositional logic**

What has attracted the attention of modern interpreters is that the standard form of argument found throughout the *Kathāvatthu* appears to employ logical principles commonly associated with propositional logic.

In step 1, the way forward for instance, there are two sub-arguments:

(1) (A is B) but ~ (A is C)

(2) If (A is B) then (A is C)

(3) ~ ((A is B) but ~ (A is C))

And:

(1) (A is B) but ~ (A is C)

(4) If ~ (A is C) then ~ (A is B)

(5) ~ ((A is B) and ~ (A is C))

The first line is required in both sub-arguments. It consists of two propositions. The second line implies that one of these propositions contradicts the other, and the third line forms the conclusion. The lines which are normally required in a proof are added below (numbered with Roman numerals) to show clearly all of the steps typically used in a proof in propositional logic:

| | |
|---|---|
| (1) (A is B) but ~ (A is C) | asserted by the Puggalavādin |
| (i) A is B | derived from line 1, by 'and' elimination |
| (2) If (A is B) then (A is C) | asserted by the Theravādin |
| (ii) A is C | derived from lines (i) and 2, by *modus ponens* |
| (iii) ~ (A is C) | derived from line 1, by 'and' elimination |
| (iv) (A is C) and ~ (A is C) | derived from lines (ii) and (iii), by 'and' introduction |
| (3) ~ ((A is B) but ~ (A is C)) | derived from lines 1 and (iv), by *reductio ad absurdum* |

The second part of the argument involves the same pattern seen in the first part:

| | |
|---|---|
| (1) (A is B) but ~ (A is C) | asserted by the Puggalavādin |
| (v) ~ (A is C) | derived from line 1, by 'and' elimination |
| (4) If ~ (A is C) then ~ (A is B) | asserted by the Theravādin |
| (vi) ~ (A is B) | derived from lines (v) and 4, by *modus ponens* |
| (vii) A is B | derived from line 1, by 'and' elimination |

(viii) (A is B) and ~ (A is B)    derived from lines (vi) and (vii), by 'and' introduction

(5) ~ ((A is B) and ~ (A is C))    derived from lines 1 and (viii), by *reductio ad absurdum*

If these are indeed the steps assumed by the debaters then *modus ponens* and *reductio ad absurdum* are involved. The same *reductio ad absurdum* is easily derived using *modus tollens* rather than *modus ponens*. But this would make the second sub-argument more complicated than necessary, plus it would be unnatural to deal with the propositions in the first line in the reverse order. The form of line 4 also suggests *modus tollens* is not involved.[1]

## Validity of this form of argument

The same pattern of argument displayed in these two sub-arguments is found in all the first four steps of the five-part argument. Two sub-arguments also appear in the conclusion:

(1) If (A is B) then (A is C)

(2) ~ ((A is B) and ~ (A is C))

(3) If ~ (A is C) then ~ (A is B)

(4) ~ ((A is B) and ~ (A is C))[2]

(5) Either ((A is B) and (A is C)) or ( ~ (A is B) and ~ (A is C))

The Puggalavādin's position, i.e. to accept the first proposition (A is B) and reject the second (A is C), is assumed in this step. When that line is added, the two sub-arguments are clearly the same as those found in the previous four steps:

(i) (A is B) but ~ (A is C)

(1) If (A is B) then (A is C)

(2) ~ ((A is B) and ~ (A is C))

And:

(i) (A is B) but ~ (A is C)

(3) If ~ (A is C) then ~ (A is B)

(4) ~ ((A is B) and ~ (A is C))

This leaves one additional line in the conclusion:

(5) Either ((A is B) and (A is C)) or ( ~ (A is B) and ~ (A is C))

---

[1] Schayer 1933a, 97; and Bochenski 1961, 423, suggest that a term-logical version of *modus tollens* is involved.

[2] Line 4 does not appear in the original but is added here to complete the pattern of argument.

These two sub-arguments combined with the final line form a kind of dilemma. The pattern of argument here is:

Sub-argument 1:

If you are right to accept the first then you are wrong to reject the second.

Sub-argument 2:

If you are right to reject the second then you are wrong to accept the first.

Final line:

Either way, you must abandon your position and either accept both or reject both.

The dilemma symbolised is:

| | |
|---|---|
| Sub-argument 1: | If (A is B) then (A is C) |
| Sub-argument 2: | If ~ (A is C) then ~ (A is B) |
| Final line: | Either ((A is B) and (A is C)) or ( ~ (A is B) and ~ (A is C)) |

The connective 'if ... then ...' has not been symbolised since it is unclear what relation is intended here. The connective appears to be material implication, that is, a relation between two statements where one statement P materially implies another statement Q. This relation is symbolised by '⊃', and 'P ⊃ Q' is defined as being true just in case P is false and Q is true. With this understanding of the 'if ... then ...' connective, the standard truth table test can be applied to the argument.

| | A is B | A is C | Sub-arg 1 | | Sub-arg 2 | Final line |
|---|---|---|---|---|---|---|
| | P | Q | P ⊃ Q | and | ~ Q ⊃ ~ P | (P and Q) or (~ P and ~ Q) |
| 1 | T | T | T | T | T | T |
| 2 | F | T | T | T | T | F |
| 3 | T | F | F | F | F | F |
| 4 | F | F | T | T | T | T |

The truth table test reveals two things. First, sub-arguments 1 and 2 are logically equivalent and thus one sub-argument is in fact redundant. Second, the argument is not valid since it is possible for the premises to be true and the conclusion false. That is, in line 2 where the statement 'A is B' is false and 'A is C' is true, the conjunction of the premises is true and the conclusion is false. Either the connective used in these arguments is not material implication or the ancient Buddhist logicians were unaware of the paradox of material implication.

This analysis of the arguments used in the *Kathāvatthu* shows that not only *modus ponens* and *reductio ad absurdum* but also a kind of dilemma are features of the standard form of argument found throughout the work. This suggest that these were in common use in India during the period when the work was originally compiled (around 250 BC).

## 3.2.7 The type of logic used

### Propositional logic and term logic

The type of logic used in the *Kathāvatthu* includes elements from both term logic and propositional logic. The analysis above focused on propositions rather than on terms since propositions feature more prominently in the standard form of argument employed in the *Kathāvatthu*. The arguments in the work are expressed fully in words without any kind of symbolisation to indicate that propositions rather than terms are the basic elements in an argument. However, expressions such as "it should not be said that" show that the negation applies to the whole proposition rather than to just the first term within the proposition. Such expressions function like brackets placed around a proposition.[1] When a question is answered with "yes" or "no" the whole proposition is accepted or rejected. Even the word "proposition" (Pāli: *paṭiññā*, Sanskrit: *pratijñā*) is used in these debates.[2] This clearly establishes that the system of logic used in the *Kathāvatthu* involves propositional logic.

The use of terms is also a prominent feature of the system of logic found in the *Kathāvatthu*. The secondary debates analyse the terms found in the primary debates. This analysis takes a number of forms. The fourfold method of comparison (*catukka-nyaya-saṃsandana*) analyses the logical relationship between two terms by comparing one term with the other. For instance, the difference between the body (material quality) and the soul (self) is analysed by asking the following four questions:

1. Is the body the soul?
2. Is the soul in the body?
3. Is the soul separate from the body?
4. Is the body in the soul?[3]

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[1] Warder 1963, 64.

[2] See steps 3, 4 and 5 in section one of the primary debate, and the sample of the secondary debate above.

[3] Aung, Rhys Davids 1915, 19; and Vidyābhūṣaṇa 1920, 239. See also Warder 1963, 60.

This fourfold method of comparison analyses the logical relationship between two terms by comparing one term with the other in order to establish whether:

1. A is (identical to) B
2. B is in A
3. B is separate from A
4. A is in B

Another method of analysing terms found in the secondary debates involves the fourfold scheme of predication or tetralemma. The four questions asked here are for instance:

1. Is he who does the act the same as he who experiences the effect?
2. Are doer and experiencer two different persons?
3. Are they the same and also different persons?
4. Are they neither the same nor different persons?[1]

This analysis seeks to establish whether the agent of an action is (i) the same as, (ii) different from, (iii) both the same as and different from, or (iv) neither the same as nor different from the person who experiences the subsequent effects of that action. This method of analysis employs the familiar pattern used in the tetralemma.

The negative used to negate terms excludes any third possibility. This can be seen, for instance, in the secondary debates about whether the person (self or soul) could be neither conditioned nor unconditioned:

Is the person conditioned?
Nay, that cannot truly be said. ...
Is the person unconditioned?
Nay, that cannot truly be said. ...
Is he neither?
Nay, that cannot truly be said. ...
Hence it is surely wrong to say that apart from the conditioned and the unconditioned, there is another, a third alternative.[2]

This suggests that the negative in the term "unconditioned" is understood as excluding all that is conditioned and including all else other than the conditioned, leaving no possibility for there to be a third alternative (neither conditioned nor unconditioned). The analysis of terms in the secondary debates clearly shows that the system of logic in the *Kathāvatthu* also involves term logic.

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[1] Aung, Rhys Davids 1915, 48.

[2] Aung, Rhys Davids 1915, 54-55.

## Difference between term and propositional logic

The difference between term and propositional logic is that term logic typically deals with single propositions which either affirm or deny a predicate of a subject. Terms are used for both the subject and the predicate. For instance, in the proposition 'A is B', the term 'B' is the predicate which is either affirmed or denied of the subject 'A'. The negation 'not' applies to terms, e.g. 'A is not B'. The single proposition 'A is B' is analysed in terms of the logical relationship that exists between its component parts, i.e. between the terms 'A' and 'B'. The truth value of the proposition 'roses are red' for instance, is determined by the logical relationship that exists between the terms 'rose' and 'red'. In term logic it makes no sense to enquire into the truth values of the components of a proposition. The term 'rose' is not something to which a truth value sensibly applies. Therefore, the truth value of a proposition in term logic is not determined by the truth values of its component parts, i.e. the terms, since terms do not have truth values.

Propositional logic, on the other hand, typically deals with complex propositions which consist of component propositions plus connectives. For instance, in the complex proposition 'P or Q', both 'P' and 'Q' stand for propositions which are joined by the connective 'or'. The negation 'not' applies to whole propositions. It could be external, as in 'not (P or Q)', or internal, as in 'P or not Q'. The proposition 'P or Q' is analysed in terms of its component parts, i.e. the individual propositions 'P' and 'Q', as well as the connective 'or'. The truth value of the complex proposition 'roses are red or violets are blue', for instance, is determined by the truth values of the individual propositions 'roses are red' and 'violets are blue', as well as the function of the connective 'or'. Unlike in term logic, it does make sense in propositional logic to enquire into the truth values of the components of a complex proposition. The proposition 'roses are red' is something to which a truth value sensibly applies. Therefore, the truth value of a complex proposition in propositional logic is determined by the truth values of its component parts, i.e. the component propositions, since propositions do have truth values.

The *Kathāvatthu* does not use the terminology of truth values, but the acceptance or rejection of propositions clearly indicates that propositions are considered to be true or false. Aung and Rhys Davids use the words "true" and "false" in their translation of the work. The

standard form of argument has replies such as; "No, that cannot truly be said." [1] Step four includes statements that claim one proposition is true and another is not true.[2] Step three includes the statement; "What you affirm is false,"[3] and the secondary debates include statements like: "To say that the person and material quality are both known as real and ultimate facts, but that they are not mutually distinct things, is false."[4] There is no discussion in the work on propositions which are both true and false, or neither true nor false.

## A mixture of both term and propositional logic

The standard form of argument found throughout the *Kathāvatthu* contains simple propositions which either affirm or deny a predicate of a subject, both of which consist of terms. The truth or acceptability of such propositions is determined by the logical relationship that exists between terms. This is indicative of term logic. However, if the logic in the work was purely term logic then the acceptability of an argument would be determined by the logical relationship that exists between the terms in the premises and conclusion, and this is not the case. The acceptability of arguments in the work is determined by the logical relationship that exists between the propositions which make up the premises and conclusion. This is indicative of propositional logic. Thus, term logic is involved when the acceptability of propositions is considered, but propositional logic is involved when the acceptability of arguments is considered. In general the system of logic used in the *Kathāvatthu* contains elements of both term logic and propositional logic.

Modern commentators (mentioned below) focus either on terms or on propositions in their descriptions of the logic found in the *Kathāvatthu*. Aung in the *Prefatory Notes* (before the translation of the work) presents the first two propositions symbolically as 'A is B' and 'C is D'.[5] This suggests that four terms are involved rather than the three terms actually found in the work.[6] Other authors also distinguish four terms in their presentations.[7] The point here is not the number of terms involved but the fact that terms are identified as the variables

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[1] Aung, Rhys Davids 1915, 9ff.

[2] Aung, Rhys Davids 1915, 11.

[3] Aung, Rhys Davids 1915, 10.

[4] Aung, Rhys Davids 1915, 15.

[5] Aung, Rhys Davids 1915, xlviii.

[6] See the standard form of argument discussed above.

[7] Keith 1923, 304; Misra 1968, 62; Jayawickrama 1979, xx-xxi; Gillon 1998, 762; and Ganeri 2001a, 488-489. See also Jayatilleke 1963, 412 note 4.

symbolised by letters. Other commentators focus on propositions rather than terms. Schayer claims that the *Kathāvatthu* contains anticipations of propositional logic.[1] He rejects Aung's use of nominal variables and argues that the elements with which the logic of the work operates are propositional variables. Schayer presents the standard form of argument symbolically as:

The Puggalavādin declares that:

(1) p & ~ q

And the Theravādin presents the counter-argument:

(2) p ⊃ q

(3) ~ (p & ~ q)

(4) ~ q ⊃ ~ p

(5) ~ (p & ~ q)[2]

Schayer interprets the 'if … then …' connective as material implication and goes on to say that the author of the *Kathāvatthu* undoubtedly has in mind that the following theses are equivalent: p ⊃ q, ~ (p & ~ q), and ~ q ⊃ ~ p (i.e. lines 2, 3 and 4). Schayer claims that the equivalence between p ⊃ q and ~ (p & ~ q), known as the definition of implication, and the equivalence between p ⊃ q and ~ q ⊃ ~ p, known as the law of transposition, were very likely known by the author of the work.[3] However there is no real evidence to support Schayer's claim. The fact that these propositions appear as lines in the argument suggests that the author thought that line 2 for instance supports line 3, but this does not prove that the author thought of these propositions as logically equivalent.

Bochenski disputes Schayer's claim that the *Kathāvatthu* contains anticipations of propositional logic. He includes terms in his presentation of the standard form of argument. Line 2, for instance, is presented symbolically as: if A is B, then A is C, rather than as p ⊃ q. Bochenski concludes that the work contains a term-logic analogue of the definition of implication and a kind of law of transposition, and points out that there is no abstract

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[1] Schayer 1933a, 96.

[2] This system of representing whole propositions with a single symbol is also used by: Jayatilleke 1963, 413-415; Warder 1963, 67-68; Ichimura 1980, 7-15; Watanabe 1983, 159-174; and Ichimura 1999, 4-9.

[3] Schayer 1933a, 96-97. See also Jayatilleke 1963, 412 note 3, for another source.

formulation of propositional rules.[1] The *Kathāvatthu* in fact presents a system of logic that is not exclusively term logic nor is it exclusively propositional logic. This same system of logic is also found in another work from the same period, the *Vijñānakāya*.

## 3.3 The *Vijñānakāya*

### 3.3.1 The work

The *Vijñānakāya* (Consciousness Group) is attributed to Devaśarman whose dates have been estimated anywhere between 200 BC and 75 AD.[2] This would place the work after the *Kathāvatthu*. The *Vijñānakāya* was translated into Chinese by Hiuen-Tsang in 649 AD and now survives only in Chinese translation. Very little of this work has been translated into English.[3] The work belongs to the Sarvāstivāda school of Buddhism centred in Kashmir. The *Vijñānakāya* is renowned for propounding the view that phenomena exist in all three times, hence the name *Sarvāstivāda*, which comes from *sarvam asti* (everything exists). The *Kathāvatthu* argues against this view and holds that phenomena exist only in the present.[4] The relationship between the *Vijñānakāya* and the *Kathāvatthu* is unclear,[5] but both works argue against the existence of a person (or soul), using a very similar form of argument.

The *Vijñānakāya* is composed of six chapters (*skandhas*) based on an analysis of the six types of consciousnesses.[6] The second chapter, *On Persons* (*pudgala-skandha*), has nine sections, the first of which consists of a discussion on the transmigration of the person (*pudgala*).[7] This section closely resembles the first section of the *Kathāvatthu* (described above) in that both use a very similar style of argument for the same purpose, i.e. to refute the existence of the person.

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[1] Bochenski 1961, 422-423

[2] Potter ed. 1965-99, **7**, 367.

[3] Partial translation in Watanabe 1983, 175-203; and a fragment by Bronkhorst 1985b, 108-109. The first two chapters have been translated into French by de la Vallée Poussin 1925 'La controverse du temps et du pudgala dans le Vijñānakāya' in *Études asiatiques oubliées a l'occasion du 25e anniversaire de l'École-francaise de l'Estreme Orient*, Paris, **1**, 343-376. Contents summarised in Potter ed. 1965-99, **7**, 367-374; and in Frauwallner 1995, 28-31.

[4] Aung, Rhys Davids 1915, 84-104, 108-110, 237-238 and 242.

[5] See Bronkhorst 1993.

[6] Listed in Takakusu 1904-05, 107-108; and Watanabe 1983, 175. Contents of the chapters are summarised in Potter ed. 1965-99, **7**, 367-374; and Frauwallner 1995, 28-31.

[7] Taishō 26.537a-26.538b. Trans. Watanabe 1983, 177-180.

The debate in the *Vijñānakāya* focuses on whether or not the person who dies is the same as the one who is born again in some other form. According to the teachings of the Buddha referred to in the *Vijñānakāya*, there are five states (*gatis*) into which a person may be born. These five are: purgatory (*niraya*), animal (*tiryagyoni*), the dead (*pitryaviṣaya*), god (*devā*) and human (*manuṣyā*).[1] The example used in the *Vijñānakāya* is where a person is born as an animal from the state of purgatory. The example used in the arguments below is where a human being dies and is reborn as an animal. This minor change makes the argument easier to follow and does not effect the logic involved.

A translation of the text for each of five arguments is presented below in a paraphrased form (based on Watanabe's translation) and then each argument is symbolised using the same method of symbolisation as was used above in the discussion on the *Kathāvatthu*. The names of the proponent (*Śūnyatāvādin*) and the respondent (*Puggalavādin*), as well as the numbers for the parts of the argument, have been added for clarification, although these do not appear in the original text. The name *Puggalavādin* is used for those who accept the existence of the person and the name *Śūnyatāvādin* is used for those who deny its existence. Both parties are Buddhists. The author of the *Vijñānakāya* denies the existence of the person.

**Style of argument**

1. The first argument:

> [1] Śūnyatāvādin: Did the Buddha say that there are five different states?
> Puggalavādin: Yes.
> Śūnyatāvādin: Is the person who dies born as an animal?
> Puggalavādin: Yes.
> Śūnyatāvādin: Acknowledge your refutation:
>
> [2] If you say there are five different states then you should not say that the person who dies is born as an animal.
>
> [3] What you say here is unreasonable.
>
> [4] If you say that the person who dies is born as an animal then you should not say there are five different states.
>
> [5] It is unreasonable to say: There are five different states.

The Puggalavādin declares that:

> (1) A and B

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[1] Translations from Watanabe 1983, 178.

And the Śūnyatāvādin presents the counter-argument:

    (2) If A then ~ B

    (3) ~ (A and B)

    (4) If B then ~ A

    (5) ~ A

The pattern of argument runs as follows: the Puggalavādin accepts two propositions (both in line 1). The Śūnyatāvādin then argues: if the first then not the second (2), which is contrary to your position (3). If the second then not the first (4), thus, not the first (5). Here lines (3) and (5) differ, whereas these two lines are the same in the *Kathāvatthu*. A very similar pattern is repeated in the other four arguments.

2. The second argument:

    [1] Śūnyatāvādin: Is the person who dies born as an animal?

    Puggalavādin: Yes.

    Śūnyatāvādin: Is the person who dies the animal that is born?

    Puggalavādin: No.

    Śūnyatāvādin: Acknowledge your refutation:

    [2] If you say that the person who dies is born as an animal then you should say that the person who dies is the animal that is born.

    [3] What you say here is unreasonable.

    [4] If you do not say that the person who dies is the animal that is born then you should not say that the person who dies is born as an animal.

    [5] It is unreasonable to say: The person who dies is born as an animal.

The Puggalavādin declares that:

    (1) A and ~ B

And the Śūnyatāvādin presents the counter-argument:

    (2) If A then B

    (3) ~ (A and ~ B)

    (4) If ~ B then ~ A

    (5) ~ A

3. The third argument:

    [1] Śūnyatāvādin: Is this person that animal?

    Puggalavādin: Yes.

    Śūnyatāvādin: Is a human an animal?

    Puggalavādin: No.

    Śūnyatāvādin: Acknowledge your refutation:

[2] If you say that this person is that animal then you should say that a human is an animal.

[3] What you say here is unreasonable.

[4] If you do not say that a human is an animal then you should not say that this person is that animal.

[5] It is unreasonable to say: This person is that animal.

The Puggalavādin declares that:

(1) A and ~ B

And the Śūnyatāvādin presents the counter-argument:

(2) If A then B

(3) ~ (A and ~ B)

(4) If ~ B then ~ A

(5) ~ A

## 4. The fourth argument:

[1] Śūnyatāvādin: Is this human different from that animal?

Puggalavādin: Yes.

Śūnyatāvādin: Does this person cease and different one become an animal?

Puggalavādin: No.

Śūnyatāvādin: Acknowledge your refutation:

[2] If you say that this human is different from that animal then you should say that this person ceases and different one becomes an animal.

[3] What you say here is unreasonable.

[4] If you do not say that this person ceases and different one becomes an animal then you should not say that this human is different from that animal.

[5] It is unreasonable to say: This human is different from that animal.

The Puggalavādin declares that:

(1) A and ~ B

And the Śūnyatāvādin presents the counter-argument:

(2) If A then B

(3) ~ (A and ~ B)

(4) If ~ B then ~ A

(5) ~ A

## 5. The fifth argument:

[1] Śūnyatāvādin: Can it be said whether this person is either the same as or different from that animal?

Puggalavādin: No.

Śūnyatāvādin: Can it be said whether this person ceases and a different one becomes an animal?

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Puggalavādin: Yes.

Śūnyatāvādin: Acknowledge your refutation:

[2] If you cannot say whether this person is either the same as or different from that animal then you also cannot say whether this person ceases and different one becomes an animal.

[3] What you say here is unreasonable.

[4] If you can say whether this person ceases and different one becomes an animal then you can also say whether this person is either the same as or different from that animal.

[5] It is unreasonable to say: It cannot be said whether this person is either the same as or different from that animal.

The Puggalavādin declares that:

(1) ~ A and B

And the Śūnyatāvādin presents the counter-argument:

(2) If ~ A then ~ B

(3) ~ (~ A and B)

(4) If B then A

(5) ~ (~ A)

## Analysis of the style of argument

There is a striking resemblance between this style of argument and the one used in the *Kathāvatthu*. Both involve arguments with five parts, except that the *Kathāvatthu* is more systematic and regular in its formulation of these. The pattern common to both these works is:

1. The opponent accepts two propositions.
The refutation is:
2. If the first then not the second.
3. The first and the second, is wrong.
4. If not the second then not the first.
5. Therefore, you original position is wrong.

This pattern is repeated with minor variations throughout both works. It was no doubt the accepted form of argument in the period when the *Kathāvatthu* and the *Vijñānakāya* were originally composed. The *Vijñānakāya* is a Sarvāstivādin work, whereas the *Kathāvatthu* is a Theravādin work. These two schools owe their origins to the missions that King Aśoka sent out in the middle of the third century BC. The style of argument common to these two works most probably dates from a time before the independent development of these two schools, i.e. before Aśoka's missions in the middle of the third century BC.

## 3.3.2    Greek influence in the *Kathāvatthu* and the *Vijñānakāya*

The analysis of the arguments in the *Kathāvatthu* and the *Vijñānakāya* suggests that the ancient Indian logicians did not distinguish between term logic and propositional logic. This distinction is found in the works of ancient Greek logicians. Aristotle (384-322 BC) taught a system of term logic and the Stoics, especially Chrysippus (280-207 BC), taught a system of propositional logic. The exact date that the *Kathāvatthu* and the *Vijñānakāya* were originally composed is difficult to determine with any certainty. What is clear is that these works reflect a style of argument that belongs to a period in Indian history that is earlier than the earliest extant works containing formulations of logical principles.

The traditional view that the *Kathāvatthu* was compiled in 250 BC would place it 72 years after Aristotle had died and at a time when Chrysippus, who lived to age 73, was still at the relatively young age of 30. The *Vijñānakāya* is thought to be a slightly later work than the *Kathāvatthu*. Both term logic and propositional logic seem to have appeared in India and in Greece at a similar time.[1] The difference is that Greek texts containing formulations of term logic and formulations of propositional logic have survived, whereas what little has survived from a similar period in Indian history does not contain formulations of logical principles, only examples of the application of those principles. Whether or not works containing such formulations existed in India in the third century BC is uncertain,[2] but the fact that these principles were well understood is clearly evident in the extant works from the period.

There is nothing in either the *Kathāvatthu* or the *Vijñānakāya* to suggest that the logic they use is anything other than what was in common use in the period when they were composed. It is significant that neither work contains an explanation of the logical principles employed in debate. Their respective authors saw fit to explain in some detail the reasons for and against various controversial points but they did not see any need to explain the logical principles employed to establish those reasons. The fact that there is no explanation of these logical principles is entirely consistent with the view that these authors considered such principles to be familiar to their readers and therefore not in any need of explanation. This supports the view that the method of debate and the logical principles it employs were in fact standard for the period, and probably well known to Indian scholars of the third century BC.

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[1] Bochenski 1961, 423.

[2] Stcherbatsky 1930-32, **1**, 28 claims that there probably was debate manuals in this early period.

It could be argued that the logic employed in these two works was in fact influenced by the Greeks and the reason why they do not contain an explanation of this logic is that Greek logic, or an Indian adaptation of Greek logic, had become common knowledge by the time these works were composed. The problem with this argument is that there is nothing in these works to suggest that the logical principles they employ are from a foreign source. There is also nothing uniquely Greek about the style of debate or the logic involved. The arguments are long and cumbersome with frequent repetition. This repetition may have some persuasive power in a spoken debate but it has no logical significance in an argument. Redundancy in an argument is not typical of Greek logic, whereas frequent repetition is a common feature of ancient Buddhist works. The style of debate found in the *Kathāvatthu* and the *Vijñānakāya* appears to be typically Indian with no obvious sign of Greek influence.

This analysis of arguments in the *Kathāvatthu* and in the *Vijñānakāya* focused on propositions rather than on terms, since propositions play a more prominent role in determining the acceptability of arguments in these ancient debates. But the early Buddhist logicians were not much concerned with analysing propositions and the logical relationship between propositions. They were much more concerned with terms. These scholars drew up lists of terms in an attempt to make a precise classification of phenomena. Each term stood for a particular category of phenomena and what was included in each category determined the correct use of the term. The correct denotation of terms became an important topic of debate for the early Buddhists. One work devoted to clarifying the meanings of terms is the *Yamaka*.

## 3.4    The *Yamaka*

### 3.4.1    Analysis of the *Yamaka*

The date and author of the *Yamaka* (Pairs) are unknown although its contents suggest that it dates from about the second century BC[1] and may have evolved over some time.[2] The terminology used in the work indicates that it was composed when certain words had taken on technical meanings within systems of classifying phenomena. These words are used as terms that stand for categories of phenomena. That is, a term is understood as referring to a class, the members of which compose the extension of the term. The correct use of a term is

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[1] Warder 1958, 94.

[2] Rhys Davids, Foley 1911-13, **1**, xviii. See also Frauwallner 1995, 52, 216 note 24.

determined by the class of phenomena to which the term refers. The *Yamaka* is an attempt to clarify the meanings of terms by taking pairs of terms and comparing one term with another using a regular formula. The formula involves a series of questions and answers aimed at determining to what extent the extension of one term is included within the extension of another term. The technique of analysing pairs of terms is strictly adhered to throughout the entire work and this suggests the origin of the title *Yamaka,* which means *pairs.* The work is preserved in Pāli and has not been translated into a Western language. The contents of the *Yamaka* have been summarised in English by Nyanatiloka[1] and by Lang.[2]

In general, when the extension of one term is compared with that of another, the logical difference between these terms can be classified into four types of relationship. These are:

1. Mutually inclusive, i.e. the extension of each term includes that of the other.
2. Mutually exclusive, i.e. the extension of each term excludes that of the other.
3. The extension of one term is completely included within the extension of the other, i.e. the class of things to which one of the terms applies is completely included in the class of things to which the other term applies, but not the reverse.
4. The extension of each term is only partly included in the extension of the other, i.e. the class of things to which each term applies is partly but not completely included in the class of things to which the other term applies.

These four types of relationship are not mentioned in the *Yamaka,* but a similar fourfold method of comparing terms (*catukka-nyaya-saṃsandana*) is used it the secondary debates in the *Kathāvatthu* (discussed above) and it was probably known to the author of the *Yamaka.* Warder provides some support for this when he says: "the *Yamaka,* incidentally, presupposes the logic of the *Kathāvatthu* ... "[3]

What does appear in the *Yamaka* is a series of questions asked in the affirmative and in the negative. The logical forms of the affirmative questions are:

1. Is all A B?
2. Is all B A?

[1] Nyanatiloka 1938, 66-93.

[2] In Potter 1965-99, **7**, 327-336.

[3] Warder 1982, xxxii, see also xxxvi.

Both questions are formed from a universal affirmative proposition. According to Warder, the quantifier 'all' is not always expressed in the work but it is certainly understood.[1] Warder's description of the logical forms of the affirmative questions are:

1. Whatever is A, is all that B?
2. Whatever is B, is all that A?

Misra describes the logical forms of the affirmative questions as:[2]

1. If any $x$ is A, is any $x$ B?
2. If any $x$ is B, is any $x$ A?

The logical significance of these ways of formulating the affirmative questions may be treated as equivalent. The work provides answers to these questions. If the answer is "yes" to at least one of the two questions then the relationship between the two terms is clear. That is, if the answer is "yes" to both questions, then the two terms are mutually inclusive. If the answer is "yes" to one question and "no" to the other, then the extension of one term is completely included within the extension of the other, but not the reverse. However, if the answer to both questions is "no" then the relationship between the two terms remains unclear. Additional questions are required to determine the correct relationship. The questions found in the work contain the negations of both terms. The logical form of these negative questions is:

3. Is all not A not B?
4. Is all not B not A?

Unfortunately these two questions do not help to determine the relationship between the terms, since (3) 'all not A is not B' is logically equivalent to (2) 'all B is A', and (4) 'all not B is not A' is logically equivalent to (1) 'all A is B'. For instance, if all A is B then all not B is not A, and if all not B is not A then all A is B. The author has in fact simply asked two more questions that are logically equivalent to the first two questions. The additional questions required are ones where one term only is negated. The logical form of the four questions that completely determine the relationship between two terms are:

1. Is all A B? (or: Is all not B not A?)
2. Is all B A? (or: Is all not A not B?)
3. Is all A not B? (or: Is all B not A?)
4. Is all not B A? (or: Is all not A B?)

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[1] Warder 1963, 66-67. Warder explains that the universal is expressed in the first chapter of the *Yamaka*, but in other chapters it is omitted probably as an abbreviation. The commentary supplies the universal for all chapters.

[2] Misra 1968, 60.

If the answers to questions 1 and 2 are "no" then the terms are either mutually exclusive, or the extension of each term partly includes the extension of the other. If the answer to question 3 is "yes" then the terms are mutually exclusive, and if the answer to question 3 is "no" then the extension of each term partly includes the extension of the other. When the questions are asked in this order question 4 becomes redundant, but it is included here to indicate the forms of all four questions.

The work fails to make a complete examination of all the relationships that are logically possible when any two terms are compared. The fact that the work does not make such an analysis suggests that the main purpose of the work is not an analysis of relationships (between terms). Rather its main purpose is to determine the correct meanings of particular terms by comparing their extensions with those of other similar terms. The author is mostly concerned with terms that are very similar in meaning and easily confused. Examples of such terms are wholesome phenomena (*kusala-dhamma*) and wholesome roots (*kusala-mūla*), and form (*rūpa*) and form aggregate (*rūpa-khandha*). The meanings of these terms are made clear by noting that in each case the extension of the first term completely includes the extension of second term, but not the reverse. That is, in both of these cases the answer to the question 'is all A B?' is "yes", and answer to the question 'is all B A?' is "no". When the answer is "no" an example is provided to illustrate an instance of one term that is not an instance of the other term. Warder mentions on a number of occasions that the main purpose of these exercises is to prepare students for debate by alerting them to the logical traps that arise from words being used in more than one sense or figuratively.[1]

## 3.4.2   Greek influence in the *Yamaka*

Rhys Davids in the introductory notes to the Pāli edition of the *Yamaka* claims that the analysis of term and concept is carried out by way of the logical process of conversion, and says that "the world probably contains no other such study in the applied logic of conversion as the *Yamaka*."[2] This view is echoed by Norman and Keith. Norman says that "the *Yamaka* is a book on applied logic,"[3] and Keith says that "in the *Yamaka* again the distribution of terms is known and the process of conversion is elaborately illustrated, but without trace of

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[1] Warder 1963, 66; Warder 1970, 290; and Warder 1971, 89.

[2] Rhys Davids, Foley 1911-13, xvi.

[3] Norman 1983, 105.

appreciation of logical theory."[1] Jayatilleke objects to these claims arguing that the logical method employed in the *Yamaka* does not involve distribution or conversion in the proper technical sense of these terms.[2]

The terms distribution and conversion are used in Western logic. In general, a term is distributed when it refers to or stands for all the members of its extension. The term 'A' is distributed in the proposition 'all A is B' if it refers to all members of the term 'B'. The conversion of a proposition can mean simply another proposition in which the terms have been reversed, e.g. 'all A is B' and 'all B is A'. Here the subject and predicate terms in the first proposition are reversed in the second proposition. The process of conversion in a more technical sense, however, refers to a mode of immediate inference from one proposition to another with the subject and predicate terms reversed.[3] For example, the immediate inference from 'all A is B' to 'some B is A'.[4]

Distribution does in fact occur in the *Yamaka*. For instance, the question 'is all A B?' does seek to establish whether or not the term 'A' is distributed in the proposition 'all A is B', i.e. whether or not the term 'A' refers to all members of the term 'B'. Both Warder[5] and Lang[6] describe the logical method employed in the *Yamaka* as an analysis of the distribution of terms in propositions. The presence of conversion in the work is more confused. The fact that the second question 'is all B A?' has the terms from the first question 'is all A B?' in the reverse order could be taken as evidence of simple conversion. However, conversion in the more technical sense of an immediate inference from 'all A is B' to 'some B is A' for instance, does not occur in the work at all. When the answer to the question 'is all A B?' is "yes", there is no claim that some B is therefore A. Rather the question 'is all B A?' is asked in an effort to establish the relative difference between the extensions of each term.

When the logical method employed in the *Yamaka* is described as one involving the systematic use of distribution and conversion it could give the impression that some Greek influence may be found in the work. But there is none to be found. The examples of simple

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[1] Keith 1923, 304. See also Warder 1973, 86.

[2] Jayatilleke 1963, 306-310. See also Misra 1968, 60.

[3] Stebbing 1930, 63.

[4] The validity of this argument requires the existential assumption that there are As.

[5] Warder 1963, 60, 66; and Warder 1970, 290.

[6] In Potter 1965-99, 7, 327.

conversion can be dismissed since they signify nothing. Conversion in the more technical sense does not occur in the work at all. Only on the point of distribution could there be any grounds for considering Greek influence. However, to argue that the analysis of whether a term is distributed in a proposition constitutes evidence of Greek influence is an extremely weak argument and easily countered by pointing out that distribution also occurs in *Kathāvatthu*.[1]

The *Yamaka* is remarkable for its exhaustive analysis of the difference between terms. This work was no doubt composed for the purpose of establishing the correct meanings of terms as they were used in Buddhist philosophy. There is no obvious Greek influence to be found in the work, but one work in which Greeks do play a role is the famous *Milindapañha*.

## 3.5    The *Milindapañha*

### 3.5.1    Historical background

Within a year or two of the Buddhist Council being held in Aśoka's capital Pāṭaliputra, i.e. around 250-248 BC, both Bactria (northern Afghanistan) and Parthia (Iran south-east of the Caspian Sea) revolted and broke away from the Seleucid Empire ruled over by the Hellenic King Antiochus II Theos of Syria (reigned 261-246 BC). Parthia was not influenced by Greek culture to the same extent as Bactria. Bactria was in fact a Hellenic state, and the Bactrian Greeks were renowned for their skill in making coins. Engravers produced remarkably lifelike portraits of their subjects. Rapson says that their coins are purely Greek in style, in language, and in weight.[2] Around 200 BC, the Bactrian Greeks minted coins using a variety of metals including nickel (or nickel alloy) imported from China, a metal unknown in Europe until the 18th century.[3] Much of what is known about the Greeks in Bactria is learnt from their coins.

Bactria extended from the Hindu Kush mountain range north to the Oxus valley and had its capital in Bactra (modern Balkh in northern Afghanistan). The southern border of Bactria met the northern border of Aśoka's domains in southern Afghanistan. Aśoka died around 236 or 232 BC after a reign of some 36 or 37 years and the Maurya Empire founded by Aśoka's grandfather Candragupta then began to disintegrate. With the break-up of the Maurya Empire,

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[1] Aung, Rhys Davids 1915, 179, 265, 356, 361, and 363.

[2] Rapson 1922, 545.

[3] Tarn 1938, 87; Woodcock 1966, 73; and Sagar 1992, 102.

there was a succession of foreign invasions in northwest India. These came from northern

Afghanistan over the Hindu Kush into the Kabul valley and the Punjab, and from southern

Afghanistan over the Brāhūi mountains into Sind (Indus valley in southern Pakistan). The

invaders in the first two centuries BC were: the Greeks (Yavanas or Yonas), the

Scythians (Śakas), and the Parthians (Pahlavas).[1]

The significant Greek invaders of India are firstly Alexander in 326-325 BC, followed

by the Bactrian prince Demetrius, son of Euthydemus (died c.190 BC). Demetrius attacked

northwest India in the beginning of the second century BC. His conquests in India earned him

the title 'King of the Indians'. Another Greek invasion was lead by Eucratides who had seized

the Bactrian throne from the house of Euthydemus around 170 or 165 BC and entered

northwest India some time before 162 BC. Demetrius died about 165 BC and Eucratides was

murdered around 155-150 BC by one of his sons, perhaps Plato,[2] or perhaps Heliocles.

Heliocles succeeded Eucratides and he was the last Greek king to rule Bactria. When the

Greeks retreated south around 125 BC, Greek rule north of the Hindu Kush ceased forever.

In southern Afghanistan and northwest India there were many Greek princes who

belonged to the two rival houses of Euthydemus and Eucratides. The fact that there were two

royal houses of Bactrian Greeks ruling in India at the same time is known from the numerous

coins they minted. These Indo-Greek rulers minted coins with both Greek and Indian

language legends, and also with both Greek and Indian religious symbols. Some of these

coins seem to have remained in use for at least two centuries. A Greek merchant, possibly

from Egypt, wrote the *Periplus Maris Erythraei* (Circumnavigation of the Red Sea) as a guide

for merchants trading in the sea ports from Egypt to India. The *Periplus* was written in the

middle of the first century AD, and its author says that Greek coins (*drachmas*) minted by the

Indo-Greek rulers of India were still being used at that time:

> Inland behind Barygaza[3] there are numerous peoples: ... And beyond these is a very
> warlike people, the Bactrians, ... Because of this, there are to be found on the market in
> Barygaza even today old drachmas engraved with the inscriptions, in Greek letters, of
> Apollodotus and Menander, rulers who came after Alexander.[4]

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[1] Rapson 1922, 540.

[2] Woodcock 1966, 92.

[3] Rhys Davids identifies Barygaza with modern Baroach on the Gujarat coast, see Rhys Davids 1890-94, 1, xx.

[4] Trans. Casson 1989, 81.

Menander was the greatest of the Greek kings to rule in India. His coins are more varied and have been found over a wider area than those of any other Indo-Greek ruler in India. He was born in a village near Alasanda (Alexander) of the Yonas (Greeks)[1] probably close to Kabul around 180 BC. Menander reigned after Demetrius had died, i.e. from about 160 BC. The territories conquered by the Bactrian Greeks, especially Menander, exceeded those conquered by Alexander and may have temporarily included Pāṭaliputra, Aśoka's old capital. Menander made his capital in Sāgala or Śākala (modern Siālkot) in the Punjab. He was a great patron of Buddhism, much like Aśoka. Plutarch describes how Menander's ashes were fought over when he died (c.130 BC):

> But when a certain man named Menander, who had been a good king of the Bactrians, died in camp, the cities celebrated his funeral as usual in other respects, but in respect to his remains they put forth rival claims and only with difficulty came to terms, agreeing that they should divide the ashes equally and go away and should erect monuments to him in all their cities.[2]

The account in Plutarch describing how Menander's ashes were claimed by a number of cities closely resembles the account in the *Mahāparinibbāna Sutta* (Great Passing)[3] which describes how the Buddha's ashes were claimed by rival groups. The monuments Plutarch mentions are Buddhist *stūpas* which contain religious items. Menander is remembered not only in Greek literature but also in Indian literature. The Indo-Greek king Menander is in fact the King Milinda, one of the leading characters in the Buddhist classic the *Milindapañha*.

## 3.5.2   The *Milindapañha*

The *Milindapañha* (Milinda's Questions) is written in the form of a dialogue between King Milinda (Menander) and a Buddhist monk called Nāgasena. There are longer and shorter versions of the work. The shorter version was probably written first and then additional material was subsequently added to it to form what is now the longer version. The author of the earlier part is unknown but this work must have been written while Menander was still highly regarded in India. Since Menander died about 130 BC, the earlier part was probably written in the first century BC. The later part of the work would have been written soon after, perhaps as late as the first century AD. Its author is also unknown.

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[1] *Milindapañha* (82), trans. Rhys Davids 1890-94, **1**, 127; Horner 1963-64, **1**, 114.

[2] *Moralia* (821, D, E), trans. Babbitt 1927, **10**, 277-279.

[3] Sutta 16 of *Dīgha Nikāya*, trans. Rhys Davids 1881, 1-136; Rhys Davids, Rhys Davids 1899-1921, **2**, 78-191; Walshe 1987, 231-277. See *Dīgha Nikāya* ii 164-168.

The longer version, containing both the earlier and later parts, is preserved in Pāli and it has been translated into English twice.[1] The English translations divide the work into seven sections, the first three of which include the earlier part and the remaining four sections are the later additions. The earlier part has an introduction followed by two sections entitled 'Milinda's Questions'. These end with the notice: here ends 'Milinda's Questions'.[2] The following sections contain 40 dilemmas that are written in quite a different style. When these sections were added, the introduction listing the topics in the later sections was also expanded.

Skilling describes all the known versions of the *Milindapañha*.[3] The earlier part of the work, probably written in a north-western Prakrit, was taken to Sri Lanka and translated into Pāli in the first century AD. There is a Pāli version consisting of just the earlier part and this is thought to be a translation of the original version. The later part of the work may have been composed in Pāli in Sri Lanka or it may have been composed in India and then translated into Pāli in Sri Lanka. The *Milindapañha* was also translated into Chinese twice, first in the third century AD (now lost) and then again during the period 317-420 AD (now in two versions). The later part of the work found in the Pāli version is not present in these Chinese versions. Extracts were also translated into Chinese in the fifth century AD, possibly from Sanskrit. A Sanskrit version was also cited by Vasubandhu (c.400-480 AD)[4] in the final chapter of his *Abhidharmakośa-bhāṣya* (Autocommentary to the 'Treasury of Higher Knowledge').[5]

### 3.5.3 Greek influence in the *Milindapañha*

**Tarn's hypothesis**

Tarn accepts that the long version of the *Milindapañha* now preserved in Pāli falls into two parts: the early and the later parts. Tarn's hypothesis[6] concerns only the earlier part of the *Milindapañha*. Tarn claims that the early part of the work is based on a Greek version of 'Milinda's Questions' and this Greek work also influenced the *Letter of Pseudo-Aristeas*.[7]

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[1] In Rhys Davids 1890-94; and in Horner 1963-64. Some sections translated in Warren 1973.

[2] See Rhys Davids 1890-94, **1**, 99; Horner 1963-64, **1**, 124.

[3] Skilling 1998, 92-96.

[4] Frauwallner 1961, 131.

[5] Trans. Stcherbatsky 1920, 45-47; Pruden 1988-90, **4**, 1332-1333; Duerlinger 1989, 157-158; and Skilling 1998, 96-97.

[6] Tarn 1938, 414-436 (*Excursus, The Milindapañha and Pseudo-Aristeas*).

[7] See Swete 1900, 519-574 for the text of the letter in Greek, and 501-518 for an English introduction; and Bartlett 1985, 11-34 for an English translation and commentary.

Tarn argues that a Greek work (the *Alexander Questions*) describing how Alexander questioned Indian gymnosophists during his visit to India in the fourth century BC was used as a model for two other Greek works. These two works both describe how a foreign historical king questions fictitious philosophers belonging to the writer's own race. First, the *Alexander Questions* were used as a model for a Greek work written in the third century BC that describes how the historical King Ptolemy II questioned a group of fictitious Jewish elders on philosophical issues. Tarn calls this work the *Questions of Ptolemy II*. The *Alexander Questions* were also used in India as a model for a work where the historical King Menander questions a fictitious Buddhist monk called Nāgasena about philosophical issues. Tarn calls this work the *Original Questions of Milinda*.

The *Original Questions of Milinda* was written in Greek soon after Menander's death, i.e. before 100 BC, and it then found its way to Alexandria in Egypt where it was read by Pseudo-Aristeas around 100 BC. Pseudo-Aristeas saw how the author of the *Original Questions of Milinda* had used a king's questions to produce a work to further the cause of Buddhism. He then wrote the *Letter of Pseudo-Aristeas* incorporating the *Questions of Ptolemy II* in order to further the cause of Judaism. Pseudo-Aristeas chose Ptolemy II because there was already a document in existence, the *Questions of Ptolemy II*, where a famous king questioned Jews. Similarly, the Buddhist author of the early part of the *Milindapañha* chose Menander because there was already a document in existence, the Greek *Original Questions of Milinda*, where a famous king questioned a Buddhist sage.

Tarn claims that the Buddhist author wrote the early part of the *Milindapañha* no later than the first century BC when Greek was colloquially spoken in India and Indians knew Greek works.[1] The questions in the *Original Questions of Milinda* would have been changed to better suit the purpose of furthering the cause of Buddhism, and some time later another Buddhist writer expanded the introduction and added the extra questions to make up the *Milindapañha* as it is known today. Tarn argues for his hypothesis by pointing out that various aspects of the early part of the *Milindapañha* can be explained only by supposing a Greek original, and a number of similarities between the early part of the *Milindapañha* and the *Letter of Pseudo-Aristeas* can be explained only by supposing that Pseudo-Aristeas had read the *Original Questions of Milinda*.

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[1] Tarn 1938, 435.

## Support for Tarn

Woodcock supports Tarn's hypothesis that the *Milindapañha* was based on a Greek original and that Pseudo-Aristeas wrote his *Letter* in imitation of this Greek work. Woodcock points out that Plutarch describes how Menander's ashes were buried in monuments (*stūpas*) and so "Greek texts relating to Buddhist doctrine must by this time have begun to reach the Western world."[1] Unlike Tarn, however, Woodcock argues that Nāgasena was not a fictitious character but was in fact a Greek Buddhist monk and a disciple of the Greek monk Dhammarakkhita who had been sent to Aparantaka (Gujarat) by Aśoka after the Buddhist Council in 250 BC. This view has some support in the introduction to the *Milindapañha* (*Milindapañha* 16-18) which describes how Nāgasena goes to the Aśoka monastery in Pāṭaliputta to study with Dhammarakkhita. Menander is thought to have died about 120 years after the Buddhist Council in Pāṭaliputra. This makes it unlikely but not impossible for Nāgasena to have been a direct disciple of Dhammarakkhita. In spite of this chronological problem Woodcock claims that:

> If we once admit the possibility of Nāgasena having been a Greek Buddhist monk, the Platonic flavour of the *Questions of King Milinda* becomes immediately explicable; Nāgasena knew his Plato in the original, and made a deliberate and brilliant use of the Socratic method to expound the Buddhist truths to Menander in a form that he, too, would find familiar. Not only is the Platonic form there; one senses equally much of the Platonic spirit, particularly in the exasperating smugness with which Nāgasena, like Socrates, is capable of sustaining his argument by sheer logical legerdemain. If we once grant that Nāgasena talking to Menander was Greek talking to Greek, and recorded first by a Greek scribe, from whose version a later Pāli text was prepared and modified to suit Indian literary traditions, then the form and the very *raison d'être* of the *Milindapañha* become more comprehensible ... [2]

Woodcock is certainly not alone in his support for the view that the *Milindapañha* resembles a Greek or Platonic dialogue. For instance, Jairazbhoy says:

> The book, *Questions of Milinda*, whose form of interrogation and answer compellingly recalls the dialogues of Plato ... [3]

Similarly Sedlar says:

> The *Questions* itself can be regarded as a true product of Hellenistic syncretism: apparently modelled in some respects upon a Greek dialogue ... [1]

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[1] Woodcock 1966, 95.

[2] Woodcock 1966, 96.

[3] Jairazbhoy 1963, 51.

And Pesala also says:

> The style of the *Milinda Pañha* is very much like a Platonic dialogue, Nāgasena playing the part of Socrates and winning over King Milinda to the Buddhist view point by his sound reasoning and his fitting similes.[2]

No doubt there are many others who hold similar views. Such views strongly suggest that the *Milindapañha* contains evidence of Greek influence in its philosophical ideas and also in its logical techniques. However, the actual content of the *Milindapañha* does not support such a hypothesis, as will be shown by a close analysis of the early part of the work, and then an analysis of the later part of the work.

### 3.5.4   The earlier part of the *Milindapañha*

The earlier part of the *Milindapañha* includes some of the introduction, plus the next two sections entitled 'Milinda's Questions'. This part of the work was written after Menander (c.180-c.130 BC), probably in the first century BC, i.e. about three hundred years after Plato (c.428-348 BC). The work first introduces the main characters and then sets the scene for the questions. Nāgasena agrees to debate with Milinda provided this can be done according the way the learned converse:

> When the learned are conversing, sire, [1] a turning over [of a subject] is made and an unravelling is made and [2] a refutation is made and a redress is made and [3] a specific point is made and a specific point is made against it, and the learned are not angry in consequence – it is thus, sire, that the learned converse.[3]

The procedure followed in philosophical discussion or debate is described as one where these three pairs of points are involved. There is no explanation as to what each point includes, but this mention indicates that some procedure was followed in debates. The work in fact does not follow these conventions at all. There is no pattern of argument corresponding to these three pairs of points in the work. The questions begin with some minor verbal sparring:

> The King said: "Revered Nāgasena, I will ask."
> "Ask, sire."
> "You have been asked by me, revered sir."
> "It has been answered, sire."
> "But what was answered by you, revered sir?"
> "But what was asked by you, sire?"[4]

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[1] Sedlar 1980, 64.

[2] Pesala 1991, ix.

[3] *Milindapañha* (28-29), trans. Horner 1963-64, **1**, 39. See also Rhys Davids 1890-94, **1**, 46.

[4] *Milindapañha* (29), trans. Horner 1963-64, **1**, 39.

What follows is simply a series of questions and answers. The typical pattern for these is exemplified by the following short discussion:

> Revered Nāgasena, what is the distinguishing mark of applied thought?
> Fixing [the mind], sire, is the distinguishing mark of applied thought.
> Make a simile.
> As, sire, a carpenter fixes a well turned piece of wood in a socket, so, sire, is fixing [the mind] the distinguishing mark of applied thought.
> You are dexterous, revered Nāgasena.[1]

The pattern found in these questions is one where the king asks a question, Nāgasena answers, the king requests a simile, and Nāgasena explains his answer by way of an analogy. More discussion occurs in some questions and occasionally further similes are requested and supplied. Nāgasena's answers do not consist of regularly structured arguments. They are simply presented in a conversational style. The questions end with Milinda and Nāgasena congratulating each other on their discussion.

Since the dialogue as a literary form was common in ancient India, its use in the early part of the *Milindapañha* cannot be taken as evidence of Greek influence. Nāgasena does not play the part of Socrates as some claim. Nāgasena typically answers questions rather than asking them. He never asks Milinda for the necessary and sufficient conditions that define the subject of discussion, nor does he ever try to point out self-contradictions in Milinda's answers. The style of questioning and the use of argument by analogy[2] found in the early part of the *Milindapañha* are completely in accordance with what is found in the early Buddhist works. These describe the Buddha as answering questions put to him by kings, and the Buddha often employs argument by analogy. These dialogues are quite unlike Platonic dialogues. There is in fact nothing in the early part of the *Milindapañha* that indicates any influence from Greek philosophical or logical traditions. Whatever evidence there may be for Greek influence in the *Milindapañha* must be sought in the later part of the work.

## 3.5.5 The later part of the *Milindapañha*

**An example question**

The later part of the *Milindapañha* includes the additions to the introduction and the forty questions which make up the last four sections of the work. This material was probably

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[1] *Milindapañha* (62), trans. Horner 1963-64, **1**, 85-86.

[2] Pāli: *upamā, opamma* in the *Milindapañha*.

added within a century of the earlier part being written, i.e. in the first century AD. In the expanded version of the introduction, Milinda is described as a man of many skills:

> Many were the arts he had mastered, that is to say: the revealed tradition, secular lore, the Saṃkhya, Yoga, Nyāya and Vaiśeṣika systems, accountancy, music, medicine, the four Vedas, the Purāṇas, the oral traditions, astronomy, conjuring, logic [hetu], spells, fighting, poetry, reckoning on the fingers, in a word, the nineteen [arts]. A disputant hard to equal, hard to overcome, he was acclaimed chief of the leaders of the numerous schools of thought.[1]

The word "logic" here is Horner's translation of "hetu" which means literally cause or reason. Rhys Davids translates the word "hetu" in this same passage as "causation" rather than as "logic".[2] If "hetu" as it is used here does mean reasoning or logic then it indicates that logic, or perhaps debate, was recognized as an important skill to master at the time when the later part of the work was composed.

The forty questions which make up the last four sections of the work are quite different from the questions in the early part of the work. The earlier questions are straightforward requests for Nāgarsena to explain the Buddhist position on various points. The answers to these questions are usually quite short and often involve similes. The later questions on the other hand are presented in the form of dilemmas (meṇḍakapañha). Horner notes that the term means literally "questions belonging to the ram, or questions made of ram's horns".[3] The answers to these questions also differ from the earlier ones in that they are much longer and more detailed. The typical pattern for these dilemmas is exemplified by the following short example. Here Milinda asks Nāgasena to explain why the Buddha did not answer questions on the so-called undeclared points.

> This question, revered Nāgasena, will have two ends on one of which it must rest: either that of not knowing or that of keeping something secret.

The two consequences are: (i) that the Buddha did not answer because he did not know the correct answer, or (ii) that he did not answer because he kept some things secret. Neither of these are acceptable to Nāgasena. Milinda argues that Nāgasena must accept one of these:

> For if, revered Nāgasena, the Lord said: 'In regard to the Tathāgata's teachings, Ānanda, there is no "teacher's fist",' well then, it was through not knowing that he did not answer the Elder Mālunkyaputta.

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[1] *Milindapañha* (3-4), trans. Horner 1963-64, **1**, 5.

[2] Rhys Davids 1890-94, **1**, 6. Rhys Davids notes that Trenckner also translates "hetu" as "logic", see also note 1.

[3] Horner 1963-64, **1**, 3 note 4.

That is, if the Buddha has not kept any teachings secret (concealed in his fist) as he claimed,[1] then he did not answer because he did not know the correct answer.

> But if though he knew he did not answer, well then, in the Tathāgata's teachings there was a 'teacher's fist.'

On the other hand, if the Buddha knew the correct answer and still did not give an answer, then the Buddha has kept some things secret.

> This too is a double-pronged question; it is put to you; it is for you to solve.[2]

Milinda challenges Nāgasena to solve the problem of answering this double-pronged (*ubhatokoṭika*) question. Nāgasena replies:

> Sire, there are four ways of answering questions. What four? [1] There is the question to be answered with a definite [reply], [2] there is the question to be answered with an analysis, [3] there is the question to be answered with a counter-question, [4] there is the question to be set aside.

These four are the same as those found in the early Buddhist works (discussed in chapter two). The same passage continues with examples of the four types of questions:

> [1] And what, sire, is a [type of] question to be answered with a definite [reply]? Is material shape [form] impermanent? is a [type of] question to be answered with a definite [reply]. ...
>
> [2] What is a [type of] question to be answered with an analysis? But if material shape is impermanent ...? is a [type of] question to be answered with an analysis. ...[3]
>
> [3] What is a [type of] question to be answered with a counter-question? But now, is everything discriminated by the eye? is a [type of] question to be answered with a counter-question.
>
> [4] What is a [type of] question to be set aside? Is the world eternal? ... [etc., lists the undeclared points][4] is a [type of] question to be set aside.

Nāgasena explains to Milinda that the Buddha did not answer questions on the these points because such questions are ones that must be set aside. The passage ends with Nāgasena giving the reason why the Buddha did not answer questions that are to be set aside:

> For what reason was it a question to be set aside? There was no cause or reason for answering it, therefore it was a question to be set aside. There is no utterance or speech of the Buddhas, the Lords, that is without reason, without cause.

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[1] In the *Dīgha Nikāya* (ii 100), and *Saṃyutta Nikāya* (v 153).

[2] *Milindapañha* (144), trans. Horner 1963-64, **1**, 201-202.

[3] Watanabe 1983, 83, has: "Is matter really impermanent?"

[4] The undeclared points are here listed as twelve rather than the usual ten. The two that have been added are: the world is both finite and infinite, and the world is neither finite nor infinite.

There is no mention here that answering such questions would be misleading, only that the Buddha does not speak unless there is some purpose or benefit in doing so.

It is good, revered Nāgasena; so it is, therefore do I accept it.[1]

This question ends with Milinda accepting Nāgasena's answer.

The pattern found in these later questions is one where Milinda asks a question in the form of a dilemma and Nāgasena answers with a detailed explanation. The questions that Milinda asks are on points found in the early Buddhist works and Nāgasena's answers resemble a commentary explaining these points in the form of a dialogue. The questions in the later part of the work end with Milinda handing over his kingdom to his son and taking up the homeless life of a Buddhist recluse.

## Greek influence

The reasons to reject Greek influence in the earlier part of the *Milindapañha* also apply to the later part of the work. One distinctive difference between the earlier and later questions is that the later questions are dilemmas. But the use of dilemmas is not evidence of Greek influence since the dilemma as a dialectical method is well known in ancient Buddhist literature. Dilemmas are found in the *Kathāvatthu* (discussed above) and also in other early Buddhist works. For instance, in the *Abhayarājakumāra Sutta* (To Prince Abhaya),[2] Nigaṇṭha Nātaputta formulates a dilemma for Abhaya to use to refute the Buddha (Gotama). Then Nigaṇṭha Nātaputta tells Abhaya that:

> When the recluse Gotama is posed this two-horned question by you, he will not be able either to gulp it down or to throw it up.[3]

There is in fact nothing in either the earlier or later parts of the *Milindapañha* that would indicate influence from the Greek philosophical or logical traditions. Tarn's hypothesis that the *Milindapañha* was based on a Greek original has been challenged,[4] but it would make little difference even if Tarn was right. The *Milindapañha* contains very little logical material and what little it does contain is similar to that found in other ancient Buddhist works.

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[1] *Milindapañha* (144-145), trans. Horner 1963-64, 1, 202-203. See also Solomon 1976-78, 1, 31-32.

[2] Sutta 58 of *Majjhima Nikāya*, trans. Horner 1954-59, 2, 60-64; Bodhi 1995, 498-501.

[3] *Majjhima Nikāya* (i 393), trans. Bodhi 1995, 498.

[4] Gonda 1949; Keith 1940, 220-224.

Bronkhorst accepts that there is no evidence of Greek influence to be found in the text itself, but argues that the very existence of the *Milindapañha* indicates that the Greek tradition of debate did influence the Buddhists of the Gandhāra region. He says: "What I propose is that the Buddhists of North-West India adopted the method of rational debate and inquiry from the Greeks. ... Once the tradition of rational inquiry had been established, it was apparently capable of continuing on its own, and even spread all over India."[1] He supports this claim by arguing that "no tradition of rational inquiry (in the sense here intended, manifested by critical debate and attempts to create coherent views of reality) existed in India before the period we are considering."[2]

However, there is evidence of a tradition of rational inquiry existing in India before the period being considered, and this tradition does attempt to create coherent views of reality. Evidence for this tradition is found in works belonging to the Buddhist, Jaina and other traditions of ancient India. These ancient logicians developed a style of argument consisting of ten members.

## 3.6    Ten member arguments

The form of argument used in ancient India often involved ten components. This is seen first in the style of debate used in the *Kathāvatthu*. The primary debates began with a five step argument for a proposition like 'A is B'. The five steps are: the way forward, the way back, the refutation, the application and the conclusion. These were followed with the same five steps in an argument for the opposite proposition, 'A is not B'. These ten steps made up the first pair of sections in an eight section primary debate. The other three pairs of sections consist of the same ten steps.

The Jaina tradition also used a form of argument involving ten members, but the date of its original architect remains uncertain. The ten member argument is described by Bhadrabāhu, but there was more than one Bhadrabāhu. Bhadrabāhu the elder is traditionally thought to have lived in the 4th century BC.[3] Bhadrabāhu the younger may have lived in the first century BC.[4] Yet another date for Bhadrabāhu is the sixth century AD.[1] Whether or not

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[1] Bronkhorst 1999, 22-23.

[2] Bronkhorst 1999, 24.

[3] Vidyābhūṣaṇa 1917, 164; and Warder 1958, 94.

[4] Ingalls 1955, 110.

this later Bhadrabāhu is Bhadrabāhu the younger is unclear. The form of argument consisting of ten members has been translated by Vidyābhūṣaṇa[2] and Solomon.[3] The essence of these ten members is as follows:

1. Proposition (*pratijñā*)
   To refrain from taking life is the greatest of virtues.

2. Limitation of proposition (*pratijñā-vibhakti*)
   Only in the Jaina tradition.

3. Reason (*hetu*)
   Because those who do so are loved by the gods and honoured by men.

4. Limitation of reason (*hetu-vibhakti*)
   Only those who refrain from taking life abide in the greatest of virtues.

5. Counter position (*vipakṣa*)
   The gods love those who sacrifice animals and men honour their fathers-in-law.

6. Exclusion of counter position (*vipakṣa-pratiṣedha*)
   Those who sacrifice animals are not loved by the gods and are not worthy of honour.

7. Example (*dṛṣṭānta*)
   Like the saints (*arhat*) and ascetics (*sādhu*) who don't even cook their own food lest they take life.

8. Doubt (*āśaṅkā*)
   Householders cook for the saints and ascetics and thus the latter cause as much harm as do householders.

9. Exclusion of doubt (*āśaṅkā-pratiṣedha*)
   Householders do not cook for the saints and ascetics since they arrive unannounced and at irregular times.

10. Conclusion (*nigamana*)
    Therefore to refrain from taking life is the greatest of virtues because those who do so are loved by the gods and honoured by men.

Step 1 presents a proposition, and Step 2 qualifies this proposition. Step 3 states a reason to support the proposition, and Step 4 declares that the reason is conclusive. Step 5 challenges the conclusiveness of the reason by claiming that there are instances of the reason that apply to the opposite position, i.e. there are those loved by the gods and honoured by men who do not abide in the greatest of virtues. Step 6 defends the reason by rejecting the claim that instances of the reason apply to the opposite position. Step 7 is an instance of the reason supporting the proposition, i.e. an example of those loved by the gods and honoured by men

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[1] Vidyābhūṣaṇa 1917, 165; and Shah 1967, 31.

[2] Vidyābhūṣaṇa 1920, 166-167; repr. in Bochenski 1961, 423-425.

[3] Solomon 1976-78, **1**, 403-404, the Sanskrit is reproduced in note 48, pp. 428-429. See also Warder 1971, 117; and Ingalls 1955, 110.

who do abide in the greatest of virtues. Step 8 challenges the example by claiming that this instance of the reason does not support the proposition, i.e. the example of those loved by the gods and honoured by men do not refrain from taking life. Step 9 defends the example by rejecting the claim that this instance of the reason does not support the proposition. Step 10 declares that the reason proves the proposition.

Bhadrabāhu also describes another slightly different set of ten members used to form arguments. This style of argument involving ten components is indicative of logic in a very early period of Indian history. Later refinements reduced the number of members to their essentials. Bhadrabāhu also admits that an argument can consist of five, three or even just two members.[1] This suggests that the Bhadrabāhu who described arguments involving ten members may have lived later in history. However, the system of forming arguments with ten members was used by other logicians in the early period.

Vātsyāyana (c.450-500 AD) in his commentary (*Nyāya Bhāṣya*) on the *Nyāya Sūtra* (Logic Aphorisms) explains that some ancient logicians[2] formed arguments with ten components.[3] These ten are:

1. Inquiry (*jijñāsā*)
2. Doubt (*saṃśaya*)
3. Belief in the possibility of a solution (*śakya-prāpti*)
4. Purpose (or intention) (*prayojana*)
5. Dispelling doubt (*saṃśaya-vyūdāsa*)
6. Proposition (*pratijñā*)
7. Reason (*hetu*)
8. Instance (or example) (*udāharaṇa*)
9. Application (*upanaya*)
10. Conclusion (*nigamana*)

The first five of these members are psychological factors associated with an argument. Vātsyāyana describes inquiry as the desire to know what is not yet known. Doubt is the cause of inquiry. It entertains two contradictory positions, only one of which will be established. Belief in the possibility of a solution is the determination that the cognitive instruments

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[1] Shah 1967, 31.

[2] Dhruva 1920, 263-266, claims that these ancient logicians were the early Mīmāṃsakas.

[3] *Nyāya Bhāṣya* on *Nyāya Sūtra* (1.1.32), trans. Jhā 1915-19, 1, 316. Note: page numbers misprinted. See Keith 1921, 85-86; Chattopadhyaya, Gangopadhyaya 1967-68, 1, 107-108; Solomon 1976-78, 1, 402; and Gangopadhyaya 1982, 39.

(*pramāṇa*) are capable of (correctly) cognising their respective objects (*prameya*). Purpose is the intention to correctly establish something, which is the result of an argument. Dispelling doubt is the removal of uncertainty by refuting the counter position. The last five members are the actual statements used to establish something (*sādhaka-vākya*). In this system all ten components are considered part of the argument.

The ten components that Vātsyāyana describes differ from Bhadrabāhu's two methods of forming arguments with ten members. Vātsyāyana is therefore not referring to Bhadrabāhu but to some other ancient logicians. The *Yuktidīpikā*, a commentary on Īśvarakṛṣṇa's (c.350-450 AD) *Sāṃkhya Kārikā* written by an unknown author around the 6th century AD, describes a system of forming arguments with ten members that is almost the same as the one described by Vātsyāyana.[1] These references suggests that some of the earliest systems of Indian logic formed arguments using ten components. These date from a period after the *Kathāvatthu* (third century BC) and continued to be used even in much later times. The ancient logicians may have written works describing their systems, but nothing of them survives. Stcherbatsky thinks that probably there were such manuals in this early period:

> The opening debate of the *Kathāvatthu* on the reality of a soul is conducted with so high a degree of artificiality and every kind of dialectical devices that it suggests the probable existence of special manuals in which the art of debate was taught.[2]

The next chapter looks at the earliest extant works containing material on the logic used in debate.

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[1] Trans. Kumar, Bhargava 1990-92, **1**, 181-186. Chakrabarti 1951, 193; cf. Chattopadhyaya, Gangopadhyaya 1967-68, **1**, 108.

[2] Stcherbatsky 1930-32, **1**, 28.

# Chapter four: The medical tradition

This chapter examines one of the earliest formulations of logical principles found in Indian literature. It is preserved in the *Caraka Saṃhitā* (Caraka's Compendium),[1] the oldest surviving work in the traditional Indian medical system (Āyurveda). The *Caraka Saṃhitā* contains a list of 44 technical terms used in logic and debate. Caraka's explanation of these terms provides a rare glimpse into early Indian logic. There is ample evidence of Greek influence in areas like sculpture and coin making during the period when Caraka wrote (around the first or second century AD) and thus the possibility of Greek influence in Caraka's logic cannot be discounted. The system of proofs described in the *Caraka Saṃhitā* is compared with Aristotelian syllogisms to show that Caraka was not influenced by the Greeks. The possibility of some Greek influence finding its way into Caraka's logic would still remain if it could be shown that there is Greek influence in Caraka's system of medicine. However, there is no evidence for Greek influence in the medical system that Caraka describes.

## 4.1   Historical background

### 4.1.1   The Kushāns

During Menander's lifetime, conflict in Central Asia led to the mass migration of nomad hordes who eventually entered India. Chinese historians document a war that broke out in the border regions of the Chinese Empire about 165 BC in which the Yüeh-chih (Yuezhi) were defeated by the Hsiung-nu (Xiongnu). The Yüeh-chih were forced westward where they encountered and defeated the Wu-sun. The Yüeh-chih then continued their westward migration until they had displaced the Śakas (Scythians) from their lands around the Jaxartes valley in Central Asia. The Śakas were forced south around 140 BC and they are often described as driving the Greeks out of Bactria, something Tarn considers to be a myth.[2] According to Plutarch, Menander died in camp (see above), and this may have been while he was on a military campaign against a Śaka invasion.[3] If the Śakas did conquer Bactria then their conquest was short-lived because the Wu-sun soon avenged their previous defeat at the hands of the Yüeh-chih by driving them out of their newly acquired Śaka lands. This also

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[1] Trans. Mehta 1949; Sharma 1981-94; and Kaviratna, Sharma 1996. Meulenbeld lists the Sanskrit editions (1999-2000, **IB**, 3-6) and the Sanskrit commentaries (1999-2000, **IA**, 180-200) for the *Caraka Saṃhitā*.

[2] Tarn 1938, 284.

[3] Rawlinson 1916, 82.

forced the Yüeh-chih south into Bactria. The Chinese historians report that in 125 BC the Yüeh-chih had settled in the Oxus valley with their headquarters north of the river but with authority over all Bactria.[1] The Yüeh-chih then abandoned their nomadic way of life and remained in Bactria for at least a century.

Rapson describes the Śakas or Scythians as nomads inhabiting the northern regions of Europe and Asia.[2] They had been driven south by the Yüeh-chih until they had their migration checked by the Pahlavas or Parthians around Herat (western Afghanistan). They then travelled south-eastward and entered Sind (Indus valley in southern Pakistan) around the end of the second century BC. At this time they were a mixture of Śaka and Parthian people. In the beginning of the first century BC they moved north up the Indus river, led by their king Maues. They seized Gandhāra from the Greek king Apollodotus and established their capital in Taxila (near Rawalpindi, northern Pakistan). Maues was succeeded by Azes I who was a Parthian. Greek rule then ended in Gandhāra, except for an area around Peshāwar and the Kabul valley ruled by Hermaeus. Hermaeus was the last Greek king in India and when he died around 30 BC his territory also passed into Parthian control. At the same time the Romans conquered Egypt, marking a similar end to Greek supremacy in the West.

Although Greek rule had ended in India, Greek influence continued for some time. The Śaka and Parthian rulers appear to have greatly valued the skills of the Greeks. They retained Greek mint-masters and engravers to produce their currency. They used the Greek script in their coin legends, they adopted Greek political systems in their administration, and no doubt Greek communities continued to prosper in their territories as they had done under Greek kings. The fact that Greek continued to be used on coins for more than 200 years after the last Greek king indicates that the Greeks remained a significant minority in India long after they lost political power. The new rulers simply replaced their Greek predecessors and continued with the Indo-Greek establishment.

Meanwhile, in Bactria the Yüeh-chih had divided into five principalities and at least a century later,[3] the Kushān section of the Yüeh-chih gained supremacy under their leader Kadphises I. Then, like the Bactrian Greeks before them, the Yüeh-chih led by the Kushāns

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[1] Lévi 1903, 418.

[2] Rapson 1922, 564.

[3] Lévi 1903, 417, 419.

conquered the territories south of the Hindu Kush, i.e. the Afghan provinces around Kabul and Kandahar. Kadphises I became the first Kushān chief of Kabul and his coins suggest that he may also have been a Buddhist.[1] The Kushāns then extended their control from the Kabul valley into northwest India taking all of Gandhāra from the Indo-Parthian dynasty. Kadphises I was succeeded by his son Kadphises II, who was probably not a Buddhist, and he was in turn succeeded by the famous Kaniṣka who was a Buddhist.

## 4.1.2   Kaniṣka

### Kaniṣka's reign

Kaniṣka made his capital in Peshāwar (northern Pakistan). He gained control over the regions of both the Indus and Ganges valleys, and may also have annexed Kashmir. The Kushāns controlled the lower Indus valley through Parthian princes and western India through both Śaka and Parthian princes. The Kushān empire extended from the Oxus in Central Asia to the Ganges in the east. The eastern extreme of their empire remains uncertain. They controlled this empire until the third century AD, although Kushāns continued to rule parts of Afghanistan until the ninth century. The era beginning in 78 AD was known as the Śaka era, in spite of the fact that it was the Kushāns who were in control. The Śaka era, also called the Indo-Scythian or the Kushān era, was followed by the Gupta era which began in 320 AD.

Kaniṣka's dates are the subject of considerable controversy. Opinions range over a four century period from the first century BC to the third century AD, although current research makes the earlier and later extremes appear unlikely. These opinions have been summarised by various authors.[2] The earlier date proposes that Kaniṣka's reign started the Vikrama era in 58 BC, but this is now doubted. The later date of the third century AD is not well supported and is complicated by the fact that there was more than one Kaniṣka. Also, placing Kaniṣka before the first century AD or after the second century AD creates problems synchronising with other events in history. The two leading theories are first that Kaniṣka's reign started the Śaka era in 78 AD, and second that Kaniṣka's reign began around 127 AD.[3] Astronomical, numismatic and epigraphic evidence supports the latter of these two dates. A date of around 100 AD will be adopted here as a working hypothesis.

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[1] Majumdar 1951, 138. See also Sagar 1992, 164.

[2] See for instance Winternitz 1933, 2, 611-614; Sagar 1992, 168-173; and Basham ed. 1968.

[3] Falk 2001.

Kaniṣka was the greatest Kushān emperor and a renowned patron of Buddhism. He is likened to Aśoka and even convened a Buddhist council in Kashmir much as Aśoka had done in Pāṭaliputra.[1] The Kashmir council was attended by some 500 monks from all parts of India and it produced the encyclopaedic work entitled the *Mahāvibhāṣā*.[2] There are conflicting reports on who acted as president at the council. Vasumitra played a prominent role and Aśvaghoṣa also took part in the proceedings.

## Greeks during Kaniṣka's time

There were no doubt many Greeks and Indo-Greeks living in Kaniṣka's domains and their skills are reflected in the buildings, coins and sculptures dating from Kaniṣka's time. Kaniṣka constructed a magnificent pagoda in his capital Peshāwar to enshrine the relics of the Buddha. Woodcock describes the pagoda as consisting of a five-story stone base supporting thirteen wooden stories, the whole structure standing 638 feet high. It was one of the wonders of the ancient world. The architect who designed and built the pagoda for Kaniṣka was the Greek Agesilas.[3] Kaniṣka's coins contained images of the Buddha as well as other (non-Buddhist) deities testifying to his liberal attitude towards religions. Originally the Buddha was not depicted in human form, but by Kaniṣka's time it was common practice do so. Kaniṣka's coins figure the Buddha standing clad in Greek costume and also with him seated in Indian fashion.[4] These are some of the earliest surviving images of the Buddha.

Greek sculptors were employed to decorate the Buddhist temples and monasteries in Gandhāra. Rawlinson claims that the Kushāns were responsible for "the importation of a large number of Greek sculptors from Asia Minor, to decorate the Buddhist monasteries, *stūpas*, and other religious buildings,"[5] but qualifies this with, "it is uncertain whether they employed Bactrian Greeks or outsiders to execute the remarkable Gandhāra sculptures."[6] These sculptures were based on Greek artistic styles but used Buddhist subjects. Images of the Buddha were based on the Hellenic god Apollo. From the second to the fifth centuries, Greek and Greek-taught artists produced large quantities of the so-called Graeco-Buddhist art of

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[1] Described by Tāranātha, see Chattopadhyaya 1970, 91-95.

[2] Summarised by Ichimura et al. in Potter 1965-99, 7, 511-568. Watters 1904-05, 274-276 argues that the *Mahāvibhāṣā* was not produced following Kaniṣka's council.

[3] Woodcock 1966, 132. See also Rawlinson 1916, 165.

[4] Smith 1919, 132.

[5] Rawlinson 1916, 165. See also Rawlinson 1914, 233.

[6] Rawlinson 1916, 84.

Gandhāra. Greek influence in the art of Gandhāra is one of the most prominent features of Greek influence in Indian culture and it came after Greek political power had ended in India.

The Kushān rulers used Greek in the legends of their coins for some 200 years. The Greek in Kaniṣka's coins is slightly modified and it became progressively more degenerate thereafter until it ceased to be used by about the third century AD.[1] The use of Greek is taken as a likely indication of the prominence of Greeks in Indian society, and the disappearance of Greek from Kushān coin legends probably coincides with the disappearance of Greeks from India. The Greeks did not leave India but were gradually absorbed into the local population through intermarriage.

During the Kushān era when Greeks played a prominent role in Indian society there would have been ample opportunity for Greek influence to find its way into Indian arts and sciences. Greek influence is certainly evident in the sculpture and coins of this period, and it could equally have found its way into other disciplines. The Indian medical system is one such discipline that some argue may have been influenced by the Greeks.

## 4.2    The Indian medical system

The traditional Indian medical system preserves one of the earliest formulations of Indian logic. It is found in the *Caraka Saṃhitā*. Caraka's date and identity remain uncertain. Meulenbeld has made a comprehensively survey of scholarly opinion regarding these issues.[2]

### 4.2.1    Caraka

Caraka was a physician from northwest India, probably Kashmir,[3] who is credited with compiling a medical treatise which now bears his name. According to Chinese sources, Kaniṣka's physician was called "Caraka" and this suggests that Kaniṣka's physician was the author of the *Caraka Saṃhitā*. This would date the work between the first century BC and the second century AD, with the same degree of uncertainty as surrounds Kaniṣka's date.[4] Both Takakusu[5] and Lévi[6] relied on Chinese sources to claim that Caraka was Kaniṣka's physician

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[1] Woodcock 1966, 131.

[2] Meulenbeld 1999-2000, **IA**, 93-115.

[3] Meulenbeld 1999-2000, **IA**, 100.

[4] The arguments for Caraka's dates are reviewed by Meulenbeld 1974, 403-404; and 1999-2000, **IA**, 105-115.

[5] Takakusu 1896, lix.

[6] Lévi 1903, 382. Note that this is an English translation of Lévi's 1896 French article.

and Aśvaghoṣa was his spiritual councillor.[1] Aśvaghoṣa was the author of the *Buddhacarita* (Deeds of the Buddha).[2] Lévi goes on to claim that "the Greek influences thought to be found in Caraka's teaching are easily explained, if he lived at the time, and at the court, of the Indo-Scythians, when Hellenism seemed to be conquering the old brahmanical civilisation."[3]

Whether Kaniṣka's physician was the same person as the author of the *Caraka Saṃhitā* has been questioned. Meulenbeld discounts the Chinese sources and claims that "solid evidence for linking the Caraka of the Chinese sources with the author of the *Carakasaṃhitā* is entirely lacking."[4] Many of those who argue against this identification do so because they wish to place Caraka earlier than Kaniṣka. The issue is complicated by the fact that the word "Caraka" was also used to refer to a sect of roving (*cara*) mendicants who practised medicine. Filliozat and Sharma both claim that the author of the *Caraka Saṃhitā* was a member of this sect of roving physicians.[5] Sharma also argues that the Caraka who compiled the *Caraka Saṃhitā* was not Kaniṣka's physician because Kaniṣka was a Buddhist whereas Caraka was not, because Caraka was a roving physician and therefore unlikely to remain in a king's court, and because Aśvaghoṣa mentions the physician Ātreya in his *Buddhacarita*,[6] but makes no mention of Caraka who would have been his colleague.[7] Sharma concludes that Caraka should be placed around 200 BC.[8] Filliozat places Caraka in the second or first century BC.[9]

The arguments against Kaniṣka's physician being the author of the *Caraka Saṃhitā* do not prove that Caraka and Kaniṣka lived at different times. The reasons both for and against Caraka being Kaniṣka's physician appear inconclusive and the identity and date of the author of the *Caraka Saṃhitā* remains in doubt. Added to this uncertainty is the issue of exactly how much of the *Caraka Saṃhitā* is the work of Caraka. What is more important, therefore, is to establish the date of those parts of the *Caraka Saṃhitā* that contain material on logic.

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[1] Barnett (in Rapson et al. 1913, 943) says that though Aśvaghoṣa was a contemporary of Kaniṣka there is no good evidence that he ever had any correspondence with Kaniṣka.

[2] Trans. Johnston 1935-36; and Schotsman 1995.

[3] Lévi 1903, 384.

[4] Meulenbeld 1999-2000, **IA**, 106. The various arguments against the identification of Kaniṣka's physician with the author of the *Caraka Saṃhitā* are listed pp. 105-106.

[5] Filliozat 1964, 18, 21; Sharma 1992b, 180-181; and Sharma 1992c, 165. See also Vidyābhūṣaṇa 1920, 25-26.

[6] Johnston 1935-36, **2**, 10; and Schotsman 1995, 10.

[7] Sharma 1981-94, **1**, ix-x. See also Sharma 1992b, 192 n. 44.

[8] Sharma 1981-94, **1**, xii; and Sharma 1992b, 185.

[9] Filliozat 1964, 22.

## 4.2.2   Caraka's Compendium

**Structure of the work**

The *Caraka Saṃhitā*, although named after Caraka, is not entirely his own work. Caraka based his compendium on an earlier work by Agniveśa[1] who recorded the oral teachings of Ātreya (Punarvasu).[2] This is mentioned at the beginning and end of each chapter in the *Caraka Saṃhitā*. Caraka begins each chapter by declaring that he will expound the next topic "as propounded by Lord Ātreya", and ends them by stating that the present topic "in the treatise [tantra] composed by Agniveśa and redacted by Caraka"[3] is now complete. That is, the *Caraka Saṃhitā* testifies to the fact that it is a reconstruction of Agniveśa's original work which contains the medical teachings of Ātreya.

According to the early Buddhist works preserved in Pāli, Ātreya taught in Taxila during the time of the Buddha. The Buddha's own physician, Jīvaka Komārabhacca,[4] is described in the *Mahāvagga* as having studied medicine under Ātreya in Taxila for seven years.[5] This suggests that Ātreya was an older contemporary of the Buddha and based on this evidence, Hoernle places Ātreya in the sixth century BC.[6] Keith claims this is doubtful.[7] Sharma maintains that the Ātreya who taught Jīvaka is different from the Ātreya who taught Agniveśa, and suggests a date of around 1000 BC for Ātreya.[8] Filliozat also rejects Hoernle's claim and argues that identifying these two Ātreyas raises serious difficulties.[9]

The *Caraka Saṃhitā* lists Ātreya's six pupils as: Agniveśa, Bhela (or Bheḍa), Jatūkarṇa, Parāśara, Hārīta and Kṣārapāṇi, and states that each of them compiled their own compendium (*saṃhitā*) of Ātreya's teachings.[10] Amongst these works, only the compendia of Agniveśa and Bhela have in some sense survived. The *Bhela Saṃhitā* (Bhela's Compendium) survives in a

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[1] See Meulenbeld 1999-2000, **IA**, 124-130, for a discussion on Agniveśa.

[2] See Meulenbeld 1999-2000, **IA**, 120-123, for a discussion on Ātreya.

[3] See for instance the beginning and end of the first chapter translated in Sharma 1981-94, **1**, 3 and 14.

[4] See Meulenbeld 1999-2000, **IA**, 693.

[5] The *Mahāvagga* (8.1.6), trans. Rhys Davids, Oldenberg 1881-85, **2**, 175; Horner 1938-66, **4**, 382; and summarised in Hardy 1880, 246. See also translations from Tibetan sources of similar accounts in Rockhill 1884, 65; and von Schiefner 1906, 94-99.

[6] Hoernle 1893-1912, **1**, lvii; Hoernle 1907b, 8; Hoernle 1908a, 29; Hoernle 1908b, 997; and Hoernle 1909, 878. See also Sharma 1992b, 179 and 180.

[7] Keith 1908, 136.

[8] Sharma 1981-94, **1**, vii-viii.

[9] Filliozat 1964, 10-11.

[10] *Caraka Saṃhitā* (1.1.30-40), trans. Sharma 1981-94, **1**, 5-6.

single incomplete manuscript[1] which is a revision of Bhela's original work by an unknown author.[2] This revision may have been done as late as the seventh century AD.[3] The arrangement of the *Bhela Saṃhitā* and the number of chapters are the same as the *Caraka Saṃhitā*, but the *Bhela Saṃhitā* is more concise and uses simpler language.[4]

The *Agniveśa Saṃhitā* (Agniveśa's Compendium) now exists only in the redacted form of the *Caraka Saṃhitā*. Hoernle argues that the original *Agniveśa Saṃhitā* may have existed as late as the eleventh century when Cakrapānidatta[5] (c.1060 AD) quoted from it in his commentary on the *Caraka Saṃhitā*.[6] Hoernle also points out that Agniveśa's work is referred to in the *Caraka Saṃhitā* as a *tantra* rather than a *saṃhitā* and this suggests that "Agniveśa wrote a series of such treatises on the several branches of medicine as taught by his master Ātreya in the ancient 'University' of Taxila, in the extreme north-west of India. What Caraka did was to combine the substance of these treatises into a single *Saṃhitā*, or Compendium."[7]

The *Caraka Saṃhitā* as it exists today consists of eight sections with a total of 120 chapters, but not all of these chapters are attributed to Caraka. The last third of the *Caraka Saṃhitā* as it now exists is attributed to Dṛḍhabala, another physician from Kashmir.[8] Dṛḍhabala's dates are also uncertain. Meulenbeld suggests 300-500 AD,[9] but there appears to be no real consensus on Dṛḍhabala's date.[10] Dṛḍhabala added 17 chapters to section six,[11] plus all of the chapters in the last two sections. Dṛḍhabala states this in two places in the *Caraka Saṃhitā*.[12] Thus the present *Caraka Saṃhitā* consists of three different layers. Firstly, the *Caraka Saṃhitā* contains the teachings of Ātreya as recorded by one of his pupils, Agniveśa. Secondly, Agniveśa's work was revised by Caraka, and then thirdly, the final two and a half

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[1] Trans. Krishnamurthy 2000.

[2] Hoernle 1893-1912, **1**, lviii.

[3] Meulenbeld 1999-2000, **IIA**, 24.

[4] Meulenbeld 1999-2000, **IIA**, 13.

[5] Cakrapāṇi, Cakradatta or Cakra.

[6] Hoernle 1907b, 1-2. Sharma 1992b, 179 has: "at least up to the 15th century AD."

[7] Hoernle 1908b, 997-998. Hoernle 1909, 879. See also Kaviratna, Sharma 1996, **1**, x.

[8] Hoernle 1908a, 32ff.

[9] Meulenbeld 1999-2000, **IA**, 141 and 349.

[10] Meulenbeld 1999-2000, **IB**, 230-231 note 610, lists the opinions of various scholars.

[11] For discussion on which chapters were added by Dṛḍhabala see Hoernle 1893-1912, **1**, lxvii; Hoernle 1908b, 1002; Hoernle 1909, 888; Sharma 1992b, 186-187 and Meulenbeld 1974, 411.

[12] *Caraka Saṃhitā* (6.30.289-290), trans. Sharma 1981-94, **2**, 529; and *Caraka Saṃhitā* (8.12.36-40), trans. Sharma 1981-94, **2**, 681. See Hoernle 1908a, 30-31.

sections were added to the end of Caraka's work by Dṛḍhabala. Dṛḍhabala's contribution is nowadays practically forgotten and the whole work is commonly referred to as *Caraka's Compendium* (*Caraka Saṃhitā*). Hoernle argues that the older parts of the *Caraka Saṃhitā* which are attributed to Caraka can be dated by the Bower Manuscript.

## Bower Manuscript

The so-called Bower Manuscript is named after Lt. H. Bower who bought it in Eastern Turkistan in 1890. The manuscript was discovered in a *stūpa* by two local men searching for treasure. The document and its contents are described by Hoernle in the introduction to his edition and translation of the manuscript,[1] and also by Meulenbeld.[2] The pages are birch bark and Hoernle argues that palaeographic evidence suggests the text was copied by scribes from north-western India in the fourth century AD.[3] The manuscript was probably carried to Eastern Turkistan by the spread of Buddhism before paper was used in India. The Bower Manuscript is thought to have belonged to Yaśamitra, a Buddhist monk named in the manuscript and who was probably buried in the *stūpa* where the manuscript was found.[4]

The Bower Manuscript consists of seven separate documents, the second of which is a medical work entitled the *Nāvanītaka* (Cream)[5] written by an anonymous author.[6] Meulenbeld suggests that this title "points to the work being an extract from earlier treatises and its being compared to the butter extracted from milk."[7] According to Hoernle, the copy of the *Nāvanītaka* found in the Bower Manuscript was made in the fourth century AD, although the work was originally composed much earlier. Hoernle suggests a "considerable interval, perhaps two or three centuries, between its composition and the copy in the Bower MS,"[8] and thus "the date of the composition of the *Nāvanītaka* is probably much earlier than that of the writing of the Bower MS."[9] He bases this claim on the characteristics of the copy found in the Bower Manuscript which indicates that it had already passed through a succession of copies

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[1] Hoernle 1893-1912, **1**, i-xcv.

[2] Meulenbeld 1999-2000, **IIA**, 3-12.

[3] Hoernle 1893-1912, **1**, xlvii-lvi. Scharfe 1999, 615, says current research favours the period between the beginning and middle of the sixth century.

[4] Hoernle 1893-1912, **1**, xxx.

[5] Scharfe 1999, 616, has: "Made from Butter".

[6] Trans. Hoernle 1893-1912, **1**, 77-180.

[7] Meulenbeld 1999-2000, **IIB**, 5 note 25.

[8] Hoernle 1909, 859. See also Hoernle 1893-1912, **1**, lvii.

[9] Hoernle 1909, 858.

since its original composition. Hoernle claims that the upper limit for the original composition of the *Nāvanītaka* is the second century AD[1] and its lower limit is the fourth century.[2]

The *Nāvanītaka* and other parts of the Bower Manuscript contain numerous medical formulae that are found in those parts of the *Caraka Saṃhitā* attributed to Caraka and not in the parts attributed to Dṛḍhabala.[3] Hoernle argues that Caraka's date must therefore be between that of Kaniṣka, whose upper limit he places in the first century BC,[4] and the composing of the *Nāvanītaka* in the second or third century AD.[5] Meulenbeld rejects this argument on the grounds that Caraka is not referred to by name in the *Nāvanītaka* and claims that "the author of the *Nāvanītaka* drew upon the floating medical tradition and early treatises that have not been preserved,"[6] rather than upon the *Caraka Saṃhitā* itself.

## Buddhist influence

There is some Buddhist influence in those parts of the *Caraka Saṃhitā* attributed to Caraka and this places an upper limit on Caraka's date. Sharma has made a summary of the Buddhist influences found in the *Caraka Saṃhitā*.[7] Meulenbeld agrees that "traces of Buddhist thought are clearly discernible in the *Carakasaṃhitā* and belong to the layer antedating Dṛḍhabala's revision."[8] This shows that Caraka reconstructed Agniveśa's work when Buddhist ideas were influential. Sharma considers this to be during the third or early second century BC.[9] The *Caraka Saṃhitā* also contains many things in common with the Buddhist classic the *Milindapañha*.[10]

The various claims and counter-claims regarding Caraka's date have not been settled. Meulenbeld's conclusion is that the philosophical material found in the *Caraka Saṃhitā* "suggests that the author called Caraka cannot have lived later than about AD 150-200 and

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[1] Hoernle 1893-1912, **1**, lxi.

[2] Hoernle 1893-1912, **1**, lvii.

[3] Hoernle 1893-1912, **1**, lix; and Hoernle 1909, 871-872.

[4] Hoernle 1893-1912, **1**, lxi.

[5] Hoernle 1893-1912, **1**, lxi. Hoernle 1909, 885-886.

[6] Meulenbeld 1999-2000, **IIA**, 11-12. See also Meulenbeld 1999-2000, **IIB**, 14-15 note 198.

[7] Sharma 1992b, 182-184.

[8] Meulenbeld 1999-2000, **IA**, 111. This is rejected by Mitra 1974, 65.

[9] Meulenbeld 1999-2000, **IA**, 111.

[10] See Mookerji 1947, 471-472; Mitra 1974, 48; and Sharma 1992a, 121-122.

not much earlier than about 100 BC."[1] These dates, coincidentally, are precisely the range of dates most commonly accepted for Kaniṣka.

## 4.2.3   Caraka's logic

The material on logic and debate in the *Caraka Saṃhitā* is found in sections one and three, neither of which were added by Dṛḍhabala. Dṛḍhabala's additions are 17 chapters to section six and all the chapters in the last two sections, seven and eight. In the light of this, it would appear safe to totally ignore the uncertainty surrounding Dṛḍhabala's date since it has no bearing on the date of the logical material found in the work. However, Hoernle argues that Dṛḍhabala not only added material to the end of Caraka's work, but he also revised Caraka's portion of the work. Evidence for this is found at the end of the first section of the *Caraka Saṃhitā*. The last chapter of this section includes a summary of the entire work naming all eight sections with their total of 120 chapters:

> Thus is said – The treatise has been completed in Śloka [Sūtra], Cikitsita, Indriya, Kalpa, Siddhi, Nidāna, Vimāna and Śarīra sthānas. Out of them the first two with thirty chapters each, the latter three with twelve chapters each and the last three with eight chapters each. The scope of the sections will be said in the respective sections. Now hear the one hundred twenty chapters with their titles and order.[2]

Hoernle claims that this summary must have been added by Dṛḍhabala since it includes those sections that Dṛḍhabala declares to be his own additions.[3] The implication of this unacknowledged change is that there could be other such changes to Caraka's portion of the work. In particular, Dṛḍhabala could have added or altered the logical material without leaving any indication of this. However, it is not at all certain that this summary was written by Dṛḍhabala. Two possible scenarios could account for Caraka writing the summary.

Firstly, Caraka could have written the summary intending to include all these chapters in his reconstruction of Agniveśa's treatise, but was unable to complete the task for some reason. This possibility becomes all the more plausible if Agniveśa's treatise contained eight sections with 120 chapters which Caraka was following as the model for his reconstruction. But this hypothesis cannot be confirmed since Agniveśa's original treatise is no longer extant.

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[1] Meulenbeld 1999-2000, IA, 114. See also a list of dates purposed by various authors in Meulenbeld 1999-2000, IA, 115.

[2] *Caraka Saṃhitā* (1.30.34-35), trans. Sharma 1981-94, 1, 243.

[3] Hoernle 1908a, 37; and Hoernle 1908b, 1001-1002. Scharfe 1999, 618 also claims that Dṛḍhabala is responsible for some amount of rewriting of the whole text.

Secondly, Caraka could have written the summary and also finished the task of redacting Agniveśa's treatise complete with all 120 chapters. Later, some of these chapters could have become lost only to be reconstructed by Dṛḍhabala. Dṛḍhabala says at the end of each of his chapters in the present *Caraka Saṃhitā*: thus ends the chapter on some topic "in the treatise composed by Agniveśa, redacted by Caraka and reconstructed by Dṛḍhabala as it was not available."[1] It is unclear what Dṛḍhabala's reasons were for claiming that a particular chapter had been redacted by Caraka but was unavailable. Dṛḍhabala must have had some information regarding the number, names and contents of the missing chapters in order to claim that they had been redacted by Caraka but were unavailable. He could have used the very summary in question, or Agniveśa's original treatise, or some other work as the source for the missing chapters. Whatever Dṛḍhabala's sources may have been, he seems to be replacing missing chapters rather than adding entirely new ones.[2] All this points towards the summary in question not being written by Dṛḍhabala.

There are, however, variations in the Sanskrit manuscripts of the *Caraka Saṃhitā* and thus some changes have been made to the various copies of the work over the centuries. This is not at all surprising considering these manuscripts were copied by hand multiple times. But these variations are not sufficient to establish that the logical material is a later addition. Also the style of logic found in the work points to it belonging to an early period and this also counts against the logic having been added Dṛḍhabala. The question is, therefore, whether the logical material was added by Caraka or whether it was part of Agniveśa's original treatise.

Agniveśa and his five colleagues each recorded the oral teachings of Ātreya in their own compendia (see above). Only two of these works survive – the compendium of Agniveśa in the form of the *Caraka Saṃhitā* and the compendium of Bhela, the *Bhela Saṃhitā*. If the logical material found in the *Caraka Saṃhitā* existed in Agniveśa's original work before Caraka's reconstruction then there should be some similar material in the *Bhela Saṃhitā*. However, the *Bhela Saṃhitā* does not contain any information on logic. It mentions only that a good physician should be "dextrous in logic" (*tarka-kuśala*),[3] but provides no further information. The fact that the *Bhela Saṃhitā* does not discuss logic whereas the *Caraka Saṃhitā* does, lends support to Sharma's claim that the logical material now found in the

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[1] See for instance *Caraka Saṃhitā* (8.12.12), trans. Sharma 1981-94, **2**, 683.

[2] See Sharma 1992b, 186.

[3] *Bhela Saṃhitā* (1.9.32), trans. Krishnamurthy 2000, 43.

*Caraka Saṃhitā* was not in Agniveśa's original work but was added by Caraka during the process of redacting Agniveśa's compendium (*Agniveśatantra*). Sharma says:

> Thus it can be conjectured that the original *Agniveśatantra* might be more or less similar to the *Bhela-saṃhitā* in size and contents. All the additions and improvements made, particularly logic, development of the basic concepts and philosophical discourses in the light of Buddhism etc. may go to Caraka's credit.[1]

The logical material found in the *Caraka Saṃhitā* was most probably added by Caraka. Thus the dates for Ātreya and Agniveśa, and also for Dṛḍhabala, can be safely ignored. Caraka's main subject was medicine, not logic, and the material on logic constitutes only a very small part of the *Caraka Saṃhitā*. This logical material was most likely gathered up by Caraka from some source and adapted to suit the purposes of training physicians.

The period suggested for Caraka is from 100 BC to 200 AD. The logical material in the *Caraka Saṃhitā* is thus representative of logic in India after the *Kathāvatthu* (third century BC) but before other more systematic treatments of logic (discussed in the next two chapters). The chronological order of works on logic is not affected by placing Caraka anywhere within the period from the last century BC through to the first century AD.

## 4.3    Logic in the medical tradition

The logical material is found in two sections of the *Caraka Saṃhitā*. Firstly, it is in section one (*sūtrasthāna*) on fundamentals, in chapter 11 (*tisraiṣaṇīya*) on the three desires.[2] This chapter has a discussion on the four methods of examination which includes inference. Secondly, it is in section three (*vimānasthāna*) on specific features, in two places: in chapter 4 (*trividharogavijñānīya*) on the three sources of knowledge, which also includes inference,[3] and in chapter 8 (*rogabhiṣagjitīya*) on the study and teaching of medicine.[4] Chapter 8 discusses 44 technical terms dealing with various aspects of debate.[5] The following discussion follows the order of these 44 terms in chapter 8, and includes material from other places in the *Caraka Saṃhitā* when the same material occurs in the list of 44 terms.

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[1] Sharma 1992b, 186.

[2] *Caraka Saṃhitā* (1.11.17-25), trans. Sharma 1981-94, **1**, 72.

[3] *Caraka Saṃhitā* (3.4.1-5), trans. Sharma 1981-94, **1**, 325-326.

[4] *Caraka Saṃhitā* (3.8.16-66), trans. Sharma 1981-94, **1**, 356-369.

[5] *Caraka Saṃhitā* (3.8.27-66), trans. Sharma 1981-94, **1**, 359-369. See also Vidyābhūṣaṇa 1920, 31-35; Dasgupta 1922-55, **2**, 377-388; Solomon 1976-78, **1**, 78-86; Warder, 1971, 128-133; Shekhawat 1984, 225-234; Gokhale 1992, 2-9; and Meulenbeld 1999-2000, **IA**, 34-35.

These 44 terms are in one continuous undivided list. Related terms appear together in the list and this suggests a classification of these terms into six categories: (1) terms 1-7 are about debate in general, (2) terms 8-14 determine the structure of a proof, (3) terms 15-17 are about assertions, (4) terms 18-26 are epistemic terms associated with proofs, (5) terms 27-32 are types of statement, and (6) terms 33-44 are about faults, fallacies and the points at which a debate is lost.

## 4.3.1 Debate (terms 1-7)

The first term in the list is debate, but before the list begins there is a general introduction to the list which also describes philosophical discussion or debate.[1] In this introduction Caraka describes two types of discussion (*saṃbhāṣā*), friendly and hostile. Opponents in a debate may be either superior, inferior or equal to oneself. The assembly where debates are held may be divided from two points of view. Firstly, regarding learning, an assembly may be either learned or ignorant, and secondly, regarding attitude, an assembly may be friendly (sympathetic), neutral or hostile. Caraka gives advice on how to conduct a discussion in the various types of assembly against various types of opponent. This advice includes tricks and techniques to defeat opponents depending on the situation.[2]

Following this general introduction, there is debate as the first term in the list. Debate (*vāda*) or academic discussion is of two types: positive (*jalpa*) and negative (*vitaṇḍā*). Positive or constructive debate is where each party opposes their opponent's view and endeavours to establish their own view. Negative or destructive debate is where each party endeavours to demolish an opponent's view without attempting to establish their own view.

The next six terms in the list are philosophical terms: substance (*dravya*), attribute (*guṇa*), action (*karma*), universal (*sāmānya*), particularity (*viśeṣa*) and inherence (*samavāya*). The same six terms appear in the *Vaiśeṣika Sūtra* (Category Aphorisms) in the same order.[3] These terms are also discussed elsewhere in the *Caraka Saṃhitā*.[4] Their relevance to debate is not explained, but they would no doubt be topics of debate. They are also mentioned as examples of theories (*siddhānta*) below.

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[1] *Caraka Saṃhitā* (3.8.15-26), trans. Sharma 1981-94, **1**, 356-359.

[2] See Prets 2000, 369-371, and 375.

[3] *Vaiśeṣika Sūtra* (1.1.4), trans. Sinha 1911, 9.

[4] *Caraka Saṃhitā* (1.1.27-29 and 48-52), trans. Sharma 1981-94, **1**, 5 and 6-7.

## 4.3.2 Structure of a proof (terms 8-14)

The next seven terms determine the structure of a proof. The first term, proposition (*pratijña*), is defined as the assertion of what is to be established.[1] A proposition consists of a subject and a property, e.g. 'person is permanent'.[2] A proposition is established by a proof (*sthāpanā*). A proof establishes a proposition with a reason (*hetu*), example (*dṛṣṭānta*), application (*upanaya*) and conclusion (*nigamana*). These four, plus the proposition, form a five-part schema or proof. The proposition is required in a proof since without it there would be nothing to establish. In order to establish the proposition 'person is permanent' for instance, the proof is:

| | |
|---|---|
| (1) Person is permanent | Proposition |
| (2) Because of being uncreated | Reason |
| (3) Like space | Example |
| (4) Just as space is uncreated and permanent, so is a person | Application |
| (5) Therefore, permanent | Conclusion |

This is the earliest extant formulation of the famous five-part proof.[3] It is preserved in Caraka's work, although he is probably not its original author. Caraka most probably took the five-part schema, along with the other terms in this list, from some work on debate.[4] There is evidence of debate in India dating from before the time of the Buddha, well before the Greeks came to India. Thus the origin of the tradition of debate in general is entirely Indian. The question examined below is whether there is any Greek influence in this five-part schema.

The proof of a contrary proposition is called a counter-proof (*prati-sthāpanā*). A counter-proof consists of the very same five-part schema. For instance, the counter-proof of the proposition 'person is permanent' is:

| | |
|---|---|
| (1) Person is impermanent | Proposition |
| (2) Because of being perceptible by the senses | Reason |
| (3) Like a pot | Example |
| (4) Just as a pot is perceptible by the senses and impermanent, so is a person | Application |
| (5) Therefore, impermanent | Conclusion |

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[1] *Caraka Saṃhitā* (3.8.30), trans. Sharma 1981-94, **1**, 360.

[2] Person (*puruṣa*) here is thought of as self or soul. Permanent (*nitya*) is also translated as eternal.

[3] See Vidyābhūṣaṇa 1920, 42; and Gokhale 1992, 4. Cf. McEvilley 2002, 406 and 408, where he claims that the *Nyāya Sūtra* contains the earliest extant Indian exposition of the syllogism or the five-part proof. McEvilley 2002, 510, dates the *Nyāya Sūtra* around the first century BC.

[4] Solomon 1976-78, **1**, 87; and Walser 1998, 196-197.

A counter-proof is also a proof. In these two examples, both proofs purport to establish a proposition that is the opposite of the other. Thus one of the proofs must fail to establish its proposition if the other is to succeed.[1] This suggests another classification of proofs, i.e. proofs that establish their propositions and those that do not, or successful and unsuccessful proofs. Caraka describes the form of a proof, namely the five-part schema, but he does not describe the conditions under which a proof is successful in establishing its proposition. For a proof to be successful, each part of a proof must play its role in the correct manner, i.e. each of the five parts of a successful proof must be free from fault. Caraka discusses faulty reasons (below) which implies that reasons free from these faults are correct reasons. This suggests that each of the five parts of a proof can be classified into faulty and faultless, or correct and incorrect, e.g. correct and incorrect reasons. The rules for a successful proof are described below after the discussion on the 44 terms is complete.

Caraka describes the four remaining parts of a proof in a very general way. The roles these four play in a proof have been added here based on the description of other terms. Reason is described as the cause of understanding (*upalabdhikāraṇa*). These are four: perception (*pratyakṣa*), inference (*anumāna*), tradition (*aitihya*), and analogy (*aupamya*).[2] That which is understood in these four ways is reality (*tattva*). That is, the reason in a proof provides the grounds to correctly understand the proposition. These grounds must be known by either perception, inference, tradition or analogy, since only these four are reliable.

An example is described as something understood by both ordinary people and the learned alike, and as illustrating the property in question. For instance, fire is hot, water is liquid, earth is firm, the sun is illuminating, and the Sāṃkhya is illuminating just like the sun. The last example is metaphorical, i.e. the Sāṃkhya (system of philosophy) is an example of illuminating (i.e. making things clear) just like the sun illuminates all things. The purpose of this last example is unclear. It may be to demonstrate the variety of acceptable examples, or it may be simply to extol the virtues of the Sāṃkhya system. The example in a proof illustrates the grounds that the reason provides. That is, an example is an instance of the reason that is known to have the property in the proposition and can therefore be used as a guide for the properties other instances of the reason must have.

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[1] Cf. Prets 2001, 550.

[2] These four are discussed below in the section on epistemology.

Regarding the last two terms used in a proof, application and conclusion, Caraka says only that these have been explained under proof and counter-proof. However, there is no specific explanation of application and conclusion under those terms, only examples of each. Caraka may mean that application and conclusion can be understood from their use in the proof and counter-proof above. The application part of a proof states that the example is an instance of the reason and has the property specified in the proposition, and this also applies to the subject. The conclusion states 'thus the property', i.e. it follows from this that the property applies to the subject.

In summary, a proof has five parts. First there is a proposition consisting of the subject and a property. The reason provides grounds that support this proposition. The example is an instance of the reason known to have the property in the proposition. The application compares the example with the subject, and the conclusion declares that the property applies to the subject, i.e. the subject has the property in question.

## 4.3.3   Assertions (terms 15-17)

The next three terms concern assertions or hypotheses. The first is rejoinder (*uttara*) which is described as a contrary statement that denies similarity when similarity has been asserted, or vice versa.[1] That is, a rejoinder is a statement supported by a counter-example that contradicts another statement. For instance, in reply to the claim: "disorders are similar to their causes, like a cold caused by a cold wind", an opponent should reply: "disorders are not similar to their causes, like a fever caused by a cold wind". In the case of a cold (influenza), a cold wind causes a disorder with symptoms like shivering which are similar to the experience of a cold wind. In the case of a fever, a cold wind causes a disorder with symptoms such as sweating which are not similar to the experience of a cold wind. Each of these two statements is a rejoinder for the other. The term rejoinder (*uttara*) that Caraka describes may be the same as refutation (*dūṣaṇa*) and futile rejoinder (*jāti*) which are described in the next two chapters.

The second term is theory (*siddhānta*) which is a conclusion established by expert examination and reason. Four kinds of theory are listed. These are: (1) a universal theory (*sarvatantra-siddhānta*) which is accepted by all within medical science, e.g. 'there are diseases', and 'there are remedies for curable diseases'; (2) a restricted theory (*paritantra-siddhānta*) which is held only by particular schools, e.g. in our school, 'there are five sense

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[1] Cf. Prets 2000, 372 note 13; and Prets 2001, 549-550.

organs', but for others, 'there are six sense organs'; (3) an implied theory (*adhikaraṇa-siddhānta*) which is implied by another statement, e.g. 'the results of actions (*karma*), liberation, the self, and rebirth' are implied by the statement, 'the liberated (person) does not experience the results of actions (*karma*) because of the absence of desire'. The last type of theory is (4) a hypothetical theory (*abhyupagama-siddhānta*) which is a theory assumed for the sake of argument, although it has not been proven, tested, taught, or even based on reason, e.g. I propose that 'substance is primary', or I propose that 'attributes are primary'.

The third term is word (*śabda*) or sound which is described as a collection of letters. This term appears to refer to a group of words rather than to just one single word. The term *śabda* is also translated as verbal testimony and is used here to refer to an assertion. Four types are listed. The first two types of words are: (1) words referring to the observable (*dṛṣṭārtha*), e.g. sense objects are perceived when the sense organs exist, and (2) words referring to the unobservable (*adṛṣṭārtha*), e.g. there is liberation. The next two types of word are: (3) those corresponding to reality (*satya*), e.g. there are remedies for curable diseases, and (4) those not corresponding to reality (*anṛta*), i.e. the opposite of the former. The last two types are often translated as true and false.[1] These four appear to be two divisions of two, although Caraka does not actually say as much.

## 4.3.4  Epistemology (terms 18-26)

The next nine terms in the list are all epistemic terms associated with proofs. The first four terms (18-21) describe the four ways in which the reason in a proof is known. The remaining five terms (22-26) describe the five psychological states associated with a proof. The first four epistemic terms are perception (*pratyakṣa*), inference (*anumāna*), tradition (*aitihya*), and analogy (*aupamya*). These same four terms were mentioned above in the discussion on reasons. Caraka explains these and similar terms in other places also, most notably in discussions on rebirth,[2] on the three sources of knowledge,[3] and on the three means of examination.[4]

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[1] See for instance Dasgupta 1922-55, **2**, 383; Mehta 1949, **5**, 334; Solomon 1976-78, **1**, 80; Shekhawat 1984, 231; and Kaviratna, Sharma 1996, **2**, 364.

[2] *Caraka Saṃhitā* (1.11.17-25), trans. Sharma 1981-94, **1**, 72.

[3] *Caraka Saṃhitā* (3.4.1-5), trans. Sharma 1981-94, **1**, 325-326.

[4] *Caraka Saṃhitā* (3.8.80-83), trans. Sharma 1981-94, **1**, 370-371.

In the discussion on rebirth, Caraka presents four means of examination (*parīkṣā*): authoritative statements, perception, inference, and ratiocination.[1] Here tradition (*aitihya*) is called authoritative statement (*āptopadeśa*), analogy is not mentioned, and ratiocination (*yukti*) is added as a means of examination separate from inference. At the end of this discussion, Caraka declares that rebirth has been established by the four means of valid cognition (*pramāṇa*).[2] Thus, these four means of examination are also called the four means of valid cognition.[3]

Caraka also discusses three sources of knowledge about diseases (*rogaviśeṣavijñāna*):

> Out of these three sources of knowledge, first of all knowledge is obtained from authority. Thereafter examination proceeds with perception and inference because if there be no authoritative material beforehand what would one know from perception and inference? Thus, for those who have knowledge [from authority] the examination is twofold – perception and inference, but for others it is threefold including authoritative instruction.[4]

The same three sources of knowledge are also called means of examination (*parīkṣā*):

> There are two types of examination for those who have already acquired the [scriptural] knowledge – perception and inference. These two along with authoritative instruction constitute the [means of] examination. This examination is of two types or of three types including authoritative instruction.[5]

Caraka also mentions perception, inference, and authoritative instruction as the three means physicians should use to ascertain the period of life left for a patient.[6]

In Caraka's system of epistemology, there are three means of examination used in the diagnosis of disease: authoritative statements, perception and inference. These three are also called the sources of knowledge about disease characteristics.[7] In his discussion on rebirth, Caraka includes ratiocination as a means of examination separate from inference. These four are also called the four means of valid cognition. A slightly different system appears in the list of 44 terms. First, ratiocination is not listed as a separate term, and second, analogy is added.

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[1] *Caraka Saṃhitā* (1.11.17), trans. Sharma 1981-94, **1**, 72.

[2] *Caraka Saṃhitā* (1.11.33), trans. Sharma 1981-94, **1**, 74.

[3] Caraka also mentions the means of valid cognition (*pramāṇa*) when defining authoritative statement (*āptopadeśa*) (*Caraka Saṃhitā* (3.4.4), trans. Sharma 1981-94, **1**, 325), and in his proof of the self (*Caraka Saṃhitā* (4.1.45), trans. Sharma 1981-94, **1**, 401).

[4] *Caraka Saṃhitā* (3.4.5), trans. Sharma 1981-94, **1**, 326.

[5] *Caraka Saṃhitā* (3.8.83), trans. Sharma 1981-94, **1**, 371.

[6] *Caraka Saṃhitā* (5.1.3), trans. Sharma 1981-94, **1**, 491.

[7] *Caraka Saṃhitā* (3.4.3), trans. Sharma 1981-94, **1**, 325.

Three terms are common to both Caraka's system and the system found in the list of 44 terms: perception, inference, and tradition or authoritative statements. With the addition of Caraka's ratiocination and the list's analogy, this brings the number of epistemic terms discussed here to five: perception, inference, ratiocination, tradition or authoritative statement, and analogy.

## Perception (term 18)

Perception (*pratyakṣa*) in the discussion on the three sources of knowledge is briefly described as "that which is acquired with the sense organs and mind directly."[1] Similarly, in the list of 44 terms, perception is defined as knowledge acquired directly by the self (*ātman*) and by the senses. For instance, the self directly perceives pleasure and pain, and the senses directly perceive objects like sounds.[2] In the argument for rebirth, Caraka says:

> The knowledge which arises by the contact of self, sense organs, mind and sense objects, is explicit and only limited to the present is known as perception.[3]

That is, four things are involved in perception. In the case of visual perception for instance, these four are the self, the eye sense organs, the mind, and the visible object. The conjunction of these four produces definite and immediate knowledge of a visible object. Caraka mentions here the requirement that the self be present which is unusual for two reasons. Firstly, its presence is not limited to perception since it is required in all sources of knowledge, and secondly, it is not mentioned in the discussions on the other sources of knowledge.[4]

## Inference (term 19)

Inference (*anumāna*)[5] is defined in both the discussion on the three sources of knowledge and in the list of 44 terms as, "reasoning (*tarka*) supported by ratiocination (*yukti*)".[6] This definition employs two terms, both of which have similar meanings. The first term, *tarka* (reasoning), is understood as a psychological process which is supported by the second term, *yukti* (ratiocination). *Tarka* is usually translated as reasoning.[7] Ratiocination was

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[1] *Caraka Saṃhitā* (3.4.4), trans. Sharma 1981-94, 1, 326.

[2] *Caraka Saṃhitā* (3.8.39), trans. Sharma 1981-94, 1, 363.

[3] *Caraka Saṃhitā* (1.11.20), trans. Sharma 1981-94, 1, 72. See translation in Filliozat 1993, 104.

[4] Filliozat 1993, 104.

[5] Inference is briefly mentioned in a number of other places in the *Caraka Saṃhitā*: 1.8.14; 1.11.7; 5.2.20; and 5.4.4.

[6] *Caraka Saṃhitā* (3.4.4 and 3.8.40), trans. my own. Sharma 1981-94, 1, 326 and 363 translates *yukti* as "invariable concomitance" which is the usual translation for *vyāpti*. See Walser 1998, 195.

[7] See for instance Sharma 1981-94, 1, 326 and 363; Kaviratna, Sharma 1996, 2, 365; Walser 1998, 195; and Meulenbeld 1999-2000, 1A, 32.

used for *yukti* because it conveys the sense of combining relevant information together. This definition of inference suggests that ratiocination (*yukti*) is an integral part of inference, but in his argument for rebirth, Caraka claims that ratiocination is a means of valid cognition quite separate from inference (see below).

In the list of 44 terms, there are three examples of inference: knowledge of bodily fire (*agni*) from the ability to digest, physical strength from the ability to exercise, and the auditory and other sense organs from the ability to hear sounds and sense other objects.[1] In all three cases, the presence of an effect is used as the evidence from which to infer the existence of a cause.

Caraka also describes inference in his argument for rebirth:

> Inference is based on prior perception. It is of three types and is related to the three times. One can infer covered fire from the smoke, sexual intercourse from observing the foetus and the future fruit from seed. By observing the bearing of similar fruit, the learned infer the causation of the seed.[2]

Here Caraka explains that inference depends on the prior perception of some evidence, and because it is a source of knowledge about things not immediately perceivable, it is separate from perception. There are three types of inference differentiated with respect to the three times, the present, past, and future. First, there is the inference of a present cause from a present effect, e.g. inferring the presence of a hidden fire from the perception of smoke. Second, there is the inference of a past cause from a present effect, e.g. inferring the past act of sexual intercourse from the perception of a foetus. Third, there is the inference of a future effect from a present cause, e.g. inferring future fruit from the perception of a seed after having observed fruit produced from seeds in other cases.

Inference in Caraka's system relies on two things: on the prior perception of some evidence, and on ratiocination (*yukti*) regarding cause and effect. Three things follow from this. First, inference is always preceded by perception. Second, the object inferred is always something not perceivable (at that time and place) with the senses. Third, the object inferred is always a particular instance of some cause or effect.

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[1] *Caraka Saṃhitā* (3.8.40), trans. Sharma 1981-94, **1**, 363. See also Walser 1998, 195. For a longer list of examples see *Caraka Saṃhitā* (3.4.8), trans. Sharma 1981-94, **1**, 327-328.

[2] *Caraka Saṃhitā* (1.11.21-22), trans. Sharma 1981-94, **1**, 72. Cf. trans. in Schuster 1972, 391 note 46.

These three types of inference show that inference is a means of knowledge about something co-existing with the evidence in the present, something that preceded the evidence in the past, or something that will follow the evidence in the future. There is no mention of inferring from the general to the particular, and there is nothing to suggest that inference involves a proof (*sthāpanā*).

## Ratiocination

Ratiocination (*yukti*) in Caraka's argument for rebirth is described as knowledge that effects depend on their causes. The examples of ratiocination that Caraka provides all involve a combination of multiple causes. Caraka says that crops for instance depend on a combination of water, cultivation, seed and favourable climate, and fire depends on a combination of that to be rubbed, the act of rubbing and the rubbing stick.[1] Caraka's description of ratiocination also mentions multiple causes:

> The knowledge which sees things produced by a combination of multiple causative factors is yukti [rationale]. It is true in the three times and is also helpful in achieving the three categories [virtue, wealth and enjoyment].[2]

Caraka's examples and description of ratiocination both suggest that ratiocination always involves the relationship between an effect and multiple causes, unlike inference which involves the relationship between an effect and a single cause. This has led some to wrongly conclude that the difference between inference and ratiocination is determined by whether the psychological process is dealing with the relationship between an effect and a single cause or an effect and multiple causes.[3] But it makes no sense to claim that an inference from an effect to a single cause is supported by the ratiocination that effects depend on multiple causes. Also, at the end of his argument for rebirth Caraka gives examples of ratiocination which involve only a single cause.

> Result comes out of the action performed and not of unperformed. There is no growth of a sprout without seed. Result is in consonance with action, no other [plant] grows from another seed. This is rationale [yukti].[4]

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[1] *Caraka Saṃhitā* (1.11.23-24), trans. Sharma 1981-94, **1**, 72.

[2] *Caraka Saṃhitā* (1.11.25), trans. Sharma 1981-94, **1**, 72. See also translations in Filliozat 1990, 45; Sharma 1992c, 163-164; Filliozat 1993, 107; and Meulenbeld 1999-2000, **1B**, 198 note 197.

[3] Sharma 1992c, 164; and Filliozat 1993, 109.

[4] *Caraka Saṃhitā* (1.11.32), trans. Sharma 1981-94, **1**, 74. See also translation in Filliozat 1993, 108.

Here ratiocination or *yukti* (which Sharma translates as rationale) is described as knowledge that an effect arises only when its cause exists and not otherwise, e.g. no sprout grows without its seed. Also, a cause produces only its own specific effect, e.g. the seed of one type of plant never produces a different type of plant. That is, the relationship of cause and effect is one where effects are completely dependent on their respective causes, and causes produce only their own specific effects. It is knowledge of this relationship which plays a supportive role in inference.

Much later in history, Śāntaraksita (725-783 AD) and Kamalaśīla (740-795 AD) argued against Caraka's claim that ratiocination is a separate means of valid cognition (*pramāṇa*). First Śāntaraksita explains Caraka's view on ratiocination:

> Something exists when another thing exists, does not exist when the other does not exist; therefore it is derived from the other. That is called yukti [ratiocination]. The sage Caraka says that it is a separate pramāṇa [means of valid cognition]. It is not an inference because there is no example of it.[1]

In the commentary on this, Kamalaśīla explains that according to Caraka, ratiocination is knowledge of the relationship of cause and effect. This knowledge is not perception because it is conceptual (*savikalpatva*), and it is not inference because there is no instance (example) of another supportive ratiocination. That is, if this ratiocination were an inference, then according to Caraka's own definition of inference, such an inference would require yet another instance of ratiocination to play a supportive role, and so on indefinitely. Thus it is a separate means of valid cognition.[2]

Śāntaraksita and Kamalaśīla object to Caraka's view and argue that ratiocination is no different from inference.[3] Caraka of course would reject their arguments and claim that ratiocination is different from inference because inference is always preceded by the perception of some evidence whereas ratiocination is not preceded by perception. Also, the object known by inference is always a particular instance of a cause or effect, e.g. a particular fire is known to be in a certain location by the perception of smoke in that location. The object known by ratiocination is the relationship of cause and effect in general, independent of any instance. Further, the ratiocination that effects are preceded by their own causes is what

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[1] Śāntaraksita's *Tattvasaṅgraha* (2692-2693), trans. Filliozat 1993, 109.

[2] Jhā 1937-39, **2**, 827. Cf. Solomon 1976-78, **1**, 464.

[3] Jhā 1937-39, **2**, 828-829.

supports the process of inferring that fire for instance exists where smoke is seen. No other school of thought in India accepts Caraka's view that ratiocination is separate from inference.

## Tradition or authoritative statement (term 20)

The terms tradition (*aitihya*) and authoritative statement (*āptopadeśa*) can be discussed together. In the list of 44 terms, tradition is defined as "the traditional authoritative source of knowledge such as the Vedas etc."[1] In the three sources of knowledge, Caraka says:

> Authority is the statement of the āpta [credible person]. Āptas are those who possess knowledge devoid of any doubt, indirect and partial acquisition, attachment and aversion. The statement of persons endowed with such merits is testimony [pramāṇa]; on the contrary, the faulty or otherwise statement of a drunkard, insane, fool and attached person does not come under testimony.[2]

In the argument for rebirth, Caraka again describes the statements of credible persons:

> Now the definition of authority – those who are free from rajas [passion] and tamas [ignorance] and endowed with strength of penance and knowledge, and whose knowledge is defectless, always uncontradicted and true universally in past, present and future, are known as āpta [who have acquired all the knowledge], śiṣṭa [expert in the discipline] and vibuddha [enlightened]; their word is free from doubt and is true because being devoid of rajas and tamas, how can they speak a lie?[3]

The statements of such authorities can be written in scriptures:

> Authoritative scripture is the Veda or any other source of learning which is not in disagreement with the Veda, is composed by critical scholars, approved by noble persons and implemented for well-being of the people. This is authoritative scripture.[4]

The statements of those who are free from all faults and endowed with all good qualities, and who are therefore completely trustworthy, are authoritative statements. When their statements are preserved in writing like the Vedas, they form authoritative scriptures. Knowledge from these sources handed down from generation to generation is called tradition. Caraka considers these to be an independent source of knowledge.

## Analogy (term 21)

Analogy (*aupamya*) in the list of 44 terms is defined as "the statement of similarity between things".[5] That is, analogy is a source of knowledge gained by comparing a familiar

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[1] *Caraka Saṃhitā* (3.8.41), trans. Sharma 1981-94, **1**, 363.

[2] *Caraka Saṃhitā* (3.4.4), trans. Sharma 1981-94, **1**, 325.

[3] *Caraka Saṃhitā* (1.11.18-19), trans. Sharma 1981-94, **1**, 72.

[4] *Caraka Saṃhitā* (1.11.27), trans. Sharma 1981-94, **1**, 73. See translation in Filliozat 1993, 102.

[5] *Caraka Saṃhitā* (3.8.42), trans. Sharma 1981-94, **1**, 363.

object with an unknown one. For instance, knowledge that a patient is suffering from tetanus is gained by the analogy of a bow. A patient with tetanus (*dhanustambha*) suffers from prolonged contraction of voluntary muscles causing an arching of the body. The patient's posture resembles the shape of a bow (*dhanuṣa*). By noticing the similarity between a patient's posture and the shape of a bow, a physician gains the knowledge that the patient in question is suffering from tetanus.

Analogy is discussed only in the list of 44 terms and is not mentioned in the three sources of knowledge or in the argument for rebirth. In the list of terms it is mentioned along with perception, inference and tradition as one of the four ways in which a reason is known. Caraka makes it clear in his argument for rebirth that perception, inference, ratiocination and tradition are all means of valid cognition. The discussion on analogy in the list of 44 terms appears to be slightly different from Caraka's own views on the means of valid cognition.

## Five psychological states (terms 22-26)

The remaining five epistemic terms in the list describe psychological states associated with a proof. That is, when a proof is presented by an opponent in a debate it takes the form of a statement consisting of five parts: proposition, reason, example, application and conclusion. These five are presented according to a set formula:

> The subject has the property, because of being the reason, like the example; just as the example is the reason and has the property, so is the subject; therefore the property.

This statement is then considered by the respondent in a debate. The person who considers this statement does so by considering each of its five parts in turn. Thus a proof is a five-part statement presented by one person for another to consider. This involves a five-stage psychological process engaged in by the person considering the five-part statement. Each stage in this psychological process is associated with one part of the statement. The five epistemic terms are: doubt, purpose, scepticism, inquiry and resolution. Each of these is associated with an individual stage of a proof: doubt is associated with the proposition, purpose with the reason, scepticism with the example, inquiry with the application, and resolution with the conclusion. Caraka provides only a general explanation of these five epistemic terms without explaining their roles in a proof. This information has been added here based on explanations of other terms, particularly fallacious reasons (see below).

The first term is doubt (*saṃśaya*) which is described as a state of indecision that arises because there is evidence both for and against some view. For instance, there is evidence both

for and against there being premature death. Doubt is related to the proposition, the first part of a proof. That is, the person who considers the proposition is in a state of doubt since they believe that there is evidence both for and against the subject having the property in the proposition. In a successful proof the proposition must be in doubt because a proposition that is not in doubt does not require a proof.

Purpose (*prayojana*) or intention is the reason to undertake a course of action. For instance, undertaking a course of medication with the intention of avoiding premature death. Purpose is related to the reason, the second part of a proof. That is, the person who considers the reason is someone intent on eliminating doubt about the proposition since this is the purpose of considering the proof. In a successful proof the reason must provide the grounds to eliminate doubt that the subject has the property, and a reason that does not provide such grounds fails in its purpose.

Scepticism (*sa-vyabhicāra*) is a state of uncertainty, i.e. being unable to decide. For instance, thinking that some medication may or may not be effective against a particular disorder. Scepticism is related to the example, the third part of a proof. That is, the person who considers the example is still sceptical about the proposition. This person knows that the example is an instance of the reason that has the property in question, but they remain sceptical as to whether or not the subject has this property. In a successful proof, the example marks the middle stage in a five-stage process and its associated scepticism marks the mid-point in a process of moving from initial doubt to the final resolution of the proposition.

Inquiry (*jijñāsā*) is to be inquisitive about something. For instance, being inquisitive about the medicines described later in the *Caraka Saṃhitā*. Inquiry is related to the application, the fourth part of a proof. That is, the person who considers the application inquires to see if what is known about the example can be applied to the subject. What is known about the example is that it is an instance of the reason that has the property. For this to have application to the subject, the subject must be an instance of the reason. In a successful proof the subject must be known to be an instance of the reason because without knowing this, what is known about the example cannot be known to apply to the subject.

Resolution (*vyavasāya*) is to determine (*niścaya*). For instance, deciding that this disorder is definitely due to wind and this is its remedy. Resolution is related to the conclusion, the fifth and last part of a proof. That is, the person who considers the conclusion is someone making the resolution that the property does apply to the subject, i.e. the subject

has the property. In a successful proof the conclusion must be accepted because the proof is not complete until a definite resolution has been made that the conclusion is correct.

These five epistemic terms describe a proof in terms of a five-stage psychological process. The person for whom a proof successfully establishes the proposition begins with doubt that the subject has the property in question and then considers the reason with the intention of eliminating this doubt. They are still sceptical about the proposition when they note that the example is an instance of the reason that has the property. Next this person inquires into the application, i.e. whether the subject is an instance of the reason just like the example. Finally this person decides that the conclusion is correct, i.e. the property does apply to the subject. In this way the proof has successfully established the proposition for this person by taking them from their initial doubt to the final correct resolution.

## 4.3.5   Types of statement (terms 27-32)

The next six terms describe various types of statement. These are presented in three pairs of statements. The first pair of statements are implication and derivation. Implication (*arthaprāti*) is a statement that suggests something other than what is explicitly expressed. For instance, the statement 'don't eat during the day' implies 'eat at night'. Derivation (*sambhava*) is a statement that suggests the origin from which something came. For instance, the statements 'unwholesome things cause disease' and 'wholesome things promote health' both refer to the origin of things. An implication refers to a consequence, whereas a derivation refers to an original source.

The next pair of statements are questionable and unquestionable statements. Questionable statement (*anuyojya*) is described as a statement that requires further clarification. For instance, a statement like 'this disorder must be purged' omits necessary detail and only invites the question 'by which type of purging?' Unquestionable statement (*ananuyojya*) is a statement that requires no further clarification. For instance, a statement like 'this disorder is incurable' invites no further question. Questionable statements suffer from being too general, whereas unquestionable statements are comprehensive.

The final pair of statements are interrogatives, questioning and counter-questioning. Questioning (*anuyoga*) is to examine, like that done between colleagues in order to improve their understanding and dialectical skills. For instance, on the issue that the self is permanent, someone asks, 'why is that?' Counter-question (*pratyanuyoga*) is to re-examine. For instance,

in response to a question someone asks, 'why ask that question?' Questioning asks the reason for a proposition, whereas a counter-question asks the reason for a question.

## 4.3.6 Faults, fallacies and grounds for defeat (terms 33-44)

The 12 remaining terms concern faults. Some of these are faults within a five-part proof and others are faults within debate, i.e. within a series of questions and answers. An analysis of these faults clarifies the definition of a successful proof.

### Faults (terms 33-35)

The first term is defective speech (*vākya-doṣa*), not faulty argument since debates were typically verbal rather than written. There are five faults of speech:

1. Incompleteness (*nyūna*), i.e. omitting any of the five parts of a proof, or providing only one reason when many are required.

2. Redundancy (*adhika*), which is the opposite of incompleteness, i.e. including information not relevant to the debate, or even when relevant, repeating the same sense with different words or repeating the same words.

3. Meaningless speech (*anarthaka*), i.e. a string of syllables making no sense.

4. Incoherent speech (*apārthaka*), i.e. disordered string of unrelated but otherwise meaningful words.

5. Contradictory speech (*viruddha*), i.e. a statement inconsistent with an example or an established conclusion of a proof, or incompatible with the basic tenets of one's own system.

The second term, commendable speech (*vākya-praśaṃsā*), is the opposite of the former term and refers to statements free from the five faults of defective speech. Commendable speech should also be to the point (*adhigata-padārtha*).[1]

Equivocation (*chala*) or quibble is to deliberately misinterpret the meanings of words in a statement and then respond to their unintended meanings. There are two types of equivocation: (1) verbal equivocation (*vāk-chala*), playing on the ambiguity of words, and (2) universal equivocation (*sāmānya-chala*), over-generalising the meanings of words.

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[1] See Prets 2000, 373 note 19.

**Fallacies (term 36)**

Fallacy (*ahetu*) is a fallacious reason (*hetvābhāsa*).[1] A proof with a fallacious reason does not successfully establish its proposition because the reason fails to serve its purpose. Caraka mentions three types of fallacy or fallacious reason.

1. Reason similar to the point at issue (*prakaraṇa-sama*)

The first fallacious reason is one where the reason is similar to the point at issue. For instance, in a proof where the first two members are:

(1) The self is distinct from the body and permanent          Proposition
(2) Because of having different characteristics to the impermanent body     Reason

the reason is similar to the point at issue because the property in the proposition has been used as the reason. That is, the reason 'having different characteristics to the impermanent body' is not sufficiently different from the property 'being distinct from the body and permanent' to be able to remove doubt about the proposition.

In a proof that successfully establishes its proposition, the proposition must be in doubt because a proposition that is not in doubt does not require a proof. The requirement for a proposition to be in doubt (or able to be doubted) is simply that the proposition must not exclude the possibility of its being doubted. The proposition in the proof above is not at fault because it is possible to doubt whether the subject does or does not have the property, i.e. whether the self is or is not distinct from the body and permanent. An example of a faulty proposition is for instance, 'a permanent self is permanent'. This proposition is faulty because it is not possible to doubt whether a permanent self is or is not permanent.

The reason in the proof above is faulty because there is not sufficient difference between the reason and the property in the proposition to allow the person who doubts whether the subject has this property to know that the subject has the (same) property in the reason. That is, 'having different characteristics to the impermanent body' is not sufficiently different from 'being distinct from the body and permanent'. Consequently, the person who doubts (and therefore does not know) that the self is distinct from the body and permanent also does not know that the self has different characteristics to the impermanent body.

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[1] Caraka uses the term *hetvābhāsa* as a synonym for *ahetu*, see *Caraka Saṃhitā* (3.8.59), trans. Sharma 1981-94, 1, 368. Cf. Prets 2000, 374 note 21.

An obvious example of insufficient difference between the reason and property in the proposition is where the first two members of a proof are for instance:

(1) The self is permanent                          Proposition
(2) Because of not being impermanent          Reason

Here the person who doubts whether the self is or is not permanent does not know that the self is not impermanent. That is, the person who doubts the proposition in this proof must decide whether the self is permanent (and not impermanent), or whether the self is impermanent (and not permanent). Consequently this person does not know that the self is not impermanent, and therefore does not know that the reason applies to the subject. Thus, this reason is not able to remove doubt about the proposition. Similarly, the reason 'having different characteristics to the impermanent body' is not sufficiently different from 'being distinct from the body and permanent' to remove doubt about the proposition.

Caraka's example above suggests that even though there is some difference between the reason and the property in the proposition, there is not sufficient difference. A correct reason in Caraka's system is therefore one that is not merely different from the property in the proposition, but one that is sufficiently different from the property in the proposition to allow the person who doubts the proposition to know that the reason provides the required grounds to establish that the subject has the property in the proposition.

2. Reason similar to (the grounds for) doubt (*saṃśaya-sama*)

The second fallacious reason is one where the reason is similar to the grounds for doubt. Doubt is described (above) as a state of indecision that arises because there is evidence both for and against some view. The person who doubts the proposition is therefore someone who believes that there is evidence both for and against the subject having the property. The second type of fallacious reason is one where the reason is at fault because it provides evidence not only for, but also evidence against, the subject having the property. The reason is therefore similar to the grounds for doubting that the subject has the property. The purpose of a reason is to eliminate doubt, whereas this reason is actually a cause for doubt.

The example that Caraka gives is one where the first two members of a proof are:

(1) This man is a physician                        Proposition
(2) Because of knowing part of the Āyurveda[1]      Reason

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[1] Āyurveda is the name for the traditional Indian medical system.

The person who doubts this proposition believes that there is evidence both for and against this man being a physician. The reason in this proof, 'knowing part of the Āyurveda', is also evidence both for and against the man in question being a physician. The reason is evidence for this man being a physician because physicians do know (at least) part of the Āyurveda, and the reason is also evidence against this man being a physician because some who are not physicians also know part of the Āyurveda. Thus the reason is grounds to doubt whether the man in question is or is not a physician.

A correct reason in Caraka's system is one that eliminates doubt that the subject has the property for the person who is in doubt about the proposition. That is, the reason must provide grounds for, but not grounds against, the subject having the property, and these grounds must be known by the person who doubts the proposition. If the reason fails to provide the correct grounds then the person who doubts the proposition cannot know that the reason does provide such grounds. In Caraka's example, the reason 'those who know part of the Āyurveda' provides grounds both for and against the man in question being a physician, and this reason therefore fails to provide the correct grounds. The reason is therefore a fallacious reason similar to the grounds for doubting the proposition.

### 3. Reason similar to the subject (varṇya-sama)

The third fallacious reason is one where the instance of the reason is an object similar to the subject. That is, the instance of the reason used as the example is similar to the subject in that both the example and the subject require proofs in order to establish that each has the property in question for the person who doubts the proposition. The fact that the subject requires a proof that it has the property is of course acceptable since that is the very purpose of a proof. But the person who doubts the proposition must know that the example has the property without resorting to a proof. If a proof is required to establish that the example has the property, then the proof that the subject has the property would have to be put aside while a separate proof was dealt with first. Further, if the example in the second proof also required its own proof that it has the property in the second proof, then yet another proof would be required, and so on infinitely. The consequence of this is that nothing would ever be proven, since every proof would require yet another prior proof. Thus, one of the requirements for a successful proof is that the person who doubts the proposition must know, without a proof, that the instance of the reason given as the example has the property in the proposition.

All this suggests a fault with the example and not a fault with the reason, whereas Caraka's discussion here concerns the third type of fallacious reason. However, a faulty example disqualifies the reason because the example is a representative instance of the grounds that the reason provides to eliminate doubt about the proposition. If the person who doubts the proposition needs a proof to establish that the instance of the reason given as the example has the property in question, then this person does not yet know that this particular instance of the reason has that property. Thus the person who doubts the proposition does not yet know that the reason provides adequate grounds for, but not grounds against, the subject having the property in question. In this way the reason fails in its purpose of eliminating doubt about the proposition. Consequently, this reason is a fallacious reason where the instance of the reason used as the example is an object requiring a proof just like the subject.

Caraka's example of the third type of fallacious reason is one where the first three members of the proof are:

| | |
|---|---|
| (1) Intellect (*buddhi*) is impermanent | Proposition |
| (2) Because of being intangible | Reason |
| (3) Like sound (*śabda*) | Example |

In this proof 'sound' is an instance of the reason (intangible) used as the example and which must be known to have the property, impermanent. That is, the person who doubts that intellect is impermanent must know without a proof that sound is impermanent, if an infinite regress is to be avoided. The use of sound to illustrate this type of fallacious reason indicates that, according to Caraka, the person who doubts that intellect is impermanent would definitely require a proof to establish that sound is impermanent.

An obvious case where a proof is required to establish that the example has the property in question is where intellect is used as both the subject and the example in the proof above. That is, the person who doubts whether the subject (intellect) does or does not have the property (impermanent), would require a proof to establish that the example (intellect) has the property (impermanent). A correct example must therefore be an instance of the reason that is different from the subject. But an example that is merely different from the subject does not guarantee that the person who doubts that the subject has the property will know, without a proof, that the example has this property. If the person who needs a proof that the subject has the property is to know that the example has the property without a proof, then the fact that the example has the property must be more obvious than the fact that the subject has the property.

According to Caraka, sound is not more obviously impermanent than is intellect, and anyone who requires a proof that intellect is impermanent would therefore require a proof that sound is impermanent. The reason why Caraka considers sound to be in greater need of a proof than intellect is because in Caraka's day the issue of whether or not sound is impermanent was very much debated. Followers of the Mīmāṃsā school argued that sound is permanent while Buddhists and others argued that sound is impermanent. Caraka's point here is that in order for the reason to be effective in eliminating doubt about the proposition, the reason must provide adequate grounds to eliminate that doubt. These grounds are the instances of the reason known to have the property specified in the proposition. The example is taken as illustrating these grounds and the person who doubts the proposition must know, without a proof, that the example has the property in question. Failure to know that the example has the property calls into question the adequacy of the grounds to eliminate doubt for the person who doubts the proposition. A reason that fails to provide suitable grounds fails to effectively eliminate doubt and such a reason is consequently a fallacious reason. The fault with this type of reason is that an instance of the reason is like the subject in that it requires a proof that it has the property.

These three fallacious reasons demonstrate the three ways in which a reason can fail to perform its function to eliminate doubt that the subject has the property for the person who doubts the proposition. A reason which is free from these three faults is presumably a correct reason in Caraka's system. A correct reason must be free from attracting the same doubt as that surrounding the subject, it must be grounds for, but not grounds against, the subject having the property, and it must be free from attracting the need of a proof like the subject. This completes the discussion on the three types of fallacious reason.

## Grounds for defeat (terms 37-44)

Delayed statement (*atītakāla*) is a statement presented after the appropriate moment for its use has elapsed. This statement, even though it would have been acceptable at a previous point in the debate, is considered a fault when it is presented at a later stage in the debate because it lacks relevance to the current point of the debate.

Criticism (*upālambha*) is finding fault with the reason, such as one of the three faults described under fallacy above. For example, in a proof where the first two members are:

(1) The self is distinct from the body and permanent          Proposition
(2) Because of having different characteristics to the impermanent body    Reason

the reason is criticised for not being sufficiently different from the point at issue. This is an example of the first of the three fallacious reasons.

Refutation (*parihāra*) is the rebuttal of criticism (*upālambha*) by amending the faulty reason. For example, in response to the criticism that the reason is not sufficiently different from the point at issue, a new reason could be presented:

(1) The self is distinct from the body and permanent      Proposition
(2) Because a body with a self always has signs
     of life, but never has any without a self              Reason

This new reason is free from the defect of not being sufficiently different from the point at issue and in this way the former criticism is refuted.

Abandoning the proposition (*pratijñāhāni*) is to renounce the original position. An original proposition is not considered to have been abandoned until its opposite has been explicitly accepted. For instance, once a proposition like 'the self is permanent' has been accepted, it is not considered to have been abandoned until the debate reaches the point where the opposite proposition, 'the self is impermanent', is explicitly accepted.

Admission (*abhyanujñā*) is to concede an opponent's position, whether or not it agrees with one's own position. Wrong reason (*hetvantara*) is to give an incorrect reason instead of the correct one. Irrelevant statement (*arthāntara*) is to change the topic and discuss an unrelated issue.

Points of defeat (*nigraha-sthāna*) determine the point at which a debate is lost. Caraka first describes three examples:

1. saying things that cannot be understood even if stated three times,

2. asking irrelevant questions when they should not be asked, and

3. not asking relevant questions when they should be asked.

Following these three examples, Caraka lists 12 more terms without descriptions:

4. abandoning the proposition (*pratijñā-hāni*), i.e. to renounce the original position,

5. admission (*abhyanujñā*), i.e. to concede an opponent's position,

6. mis-timed statement (*kālātīta-vacana*), (no description),[1]

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[1] A similar term, mis-timed proof (*aprāpta-kāla*), is listed as a point of defeat in the *Upāyahrdaya* (number 16) without a description, and it is described in the *Nyāya Sūtra* as a point of defeat occurring when the members of a proof are presented in the incorrect order. See *Nyāya Sūtra* (5.2.11), trans. Jhā 1915-19, **4**, 328-330.

7. fallacy (*ahetu*), i.e. to use a fallacious reason (note number 14),

8. incompleteness (*nyūna*), i.e. to omit relevant information,

9. redundancy (*adhika*), i.e. to include irrelevant information,

10. unsuccessful (*vyartha*), (no description),[1]

11. meaningless speech (*anarthaka*), i.e. to use a string of syllables making no sense,

12. repetition (*punarukta*), (no description),[2]

13. contradictory speech (*viruddha*), i.e. to make incompatible statements,

14. wrong reason (*hetvantara*), i.e. to use an incorrect reason, and

15. irrelevant statement (*arthāntara*), i.e. to change the topic of debate.

All but three of the last 12 terms (number 6, 10 and 12) are terms that Caraka has already explained in this section on faults, fallacies and grounds for defeat. The difference between numbers 7 and 14 is unclear. All 15 terms are considered to be errors sufficiently serious to constitute defeat in a debate. This completes Caraka's discussion on the 44 terms used in debate.

## 4.4    Caraka's proof compared with Aristotle's syllogism

The five-part proof in the *Caraka Saṃhitā* is often compared to an Aristotelian syllogism. Vidyābhūṣaṇa claims that the five-part proof found in the *Caraka Saṃhitā* was greatly influenced by, if not based on, the syllogism as propounded by Aristotle. He says:

> From the stages in the development of the syllogism in Hindu Logic, as indicated above, it will appear that Aristotle's works migrated into India during three distinct periods. The first period extends roughly from 175 BC to 30 BC, when the Greeks occupied the north-western parts of India and had their capital at Śākala, officially called Euthydemia (modern Sialkot) in the Punjab. The work of Aristotle of which we find a trace in this period is the Art of Rhetoric, which was evidently a favourite subject of study among the Indian Greeks, and from which the syllogism of five members as illustrated in the Caraka-saṃhitā, referred to above, seems to have been derived. It is worthy of note that the first trace in India of Aristotle's syllogism is met with in a work the author of which was the chief physician to King Kaniṣka, who reigned in the Punjab, if not exactly in the city of Śākala, at any rate near to it.[3]

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[1] There is no mention of this term in the *Upāyahṛdaya* or the *Nyāya Sūtra*.

[2] This term is listed as a point of defeat in the *Upāyahṛdaya* (number 17) without a description, and it is described in the *Nyāya Sūtra* as a point of defeat occurring when words or ideas are repeated without reason. See *Nyāya Sūtra* (5.2.14-15), trans. Jhā 1915-19, **4**, 333-335.

[3] Vidyābhūṣaṇa 1918, 486; repr. Vidyābhūṣaṇa 1920, 511-512. See also McEvilley 2002, 510-511.

Vidyābhūṣaṇa claims that Caraka's description of proof (*sthāpanā*) and counter-proof (*prati-sthāpanā*)[1] corresponds to Aristotle's description in his *Rhetoric* of demonstrative enthymeme and refutative enthymeme, respectively.[2] Aristotle divides enthymeme into one that proves and one that disproves,[3] but Caraka's proof and counter-proof do not correspond to these. An enthymeme is an incomplete argument, i.e. one with a missing premise that the hearer is supposed to supply. Aristotle defines an enthymeme as a syllogism made up "of few propositions, fewer often than those which make up the normal syllogism. For if any of these propositions is a familiar fact, there is no need even to mention it; the hearer adds it himself."[4] Caraka's proofs and counter-proofs, on the other hand, must be complete with no parts missing. Caraka describes incompleteness (*nyūna*), the first type of defective speech (*vākya-doṣa*), as omitting any of the five parts of a proof, or providing only one reason when many are required,[5] and he also lists incompleteness as a point of defeat (*nigraha-sthāna*).[6]

The five-part proof is more often compared to a syllogism in general rather than to a syllogism with missing premises. This also is a mistake, but a less obvious one. In order to make an accurate comparison between Caraka's proof and Aristotle's syllogism it is necessary to first define these two more accurately.

## 4.4.1 Caraka's proofs defined

Caraka does not clearly define the five parts of a successful proof. This must be gathered together from his discussion on other terms. A proof consists of exactly five parts: proposition, reason, example, application, and conclusion. A successful proof must contain only these five parts, arranged in the correct order. In addition, each part must be free from fault in order for the proof to successfully establish its proposition. A proof that lacks any of these features does not establish its proposition.

A proposition consists of a subject and a property. A correct proposition must be in doubt. For a proposition to be in doubt, it must not exclude the possibility of its being doubted. That is, the subject and the property must be sufficiently different from one another

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[1] Terms 9 and 10 in *Caraka Saṃhitā* (3.8.31-32), trans. Sharma 1981-94, 1, 360-361.

[2] Vidyābhūṣaṇa 1918, 473-474; repr. Vidyābhūṣaṇa 1920, 500-501. See also Matilal 1985, 2-3.

[3] *Rhetoric* 1396b 23 (Book 2.22), trans. Smith, Ross eds 1924.

[4] *Rhetoric* 1357a 16ff. (Book 1.2), trans. Smith, Ross eds 1924.

[5] Term 33 in *Caraka Saṃhitā* (3.8.54), trans. Sharma 1981-94, 1, 365-366.

[6] Term 44 in *Caraka Saṃhitā* (3.8.65), trans. Sharma 1981-94, 1, 368-369.

to ensure that it is possible to doubt whether the subject does or does not have the property in question. This requirement does not mean that the proposition must always be doubted by everyone, only that it could be doubted by someone at some time. A proposition that could never be doubted by anyone at any time is an incorrect proposition since it requires no proof.

The purpose of a reason is to provide evidence to eliminate doubt about the proposition. The requirements for a correct reason are three. Firstly the reason must provide grounds for, but not grounds against, the subject having the property. That is, there must be instances of the reason that have the property specified in the proposition, but no instances of the reason that do not have this property. Secondly, this must be known by the person who doubts the proposition. That is, the reason must not only be different from the subject, it must be sufficiently different from the subject to allow the person who doubts whether the subject has the property to know that instances of the reason have the property, and no instances of the reason do not have the property. The reason must also be sufficiently different from the property to allow the person who doubts that the subject has the property to know that the subject is an instance of the reason at the time of considering the application, i.e. before they decide that the subject has the property (see application below). Thirdly, the person must know that the reason provides the necessary grounds either by perception, inference, tradition or analogy, since only these four are reliable. That is, the person who doubts that the subject has the property must not require a proof to establish that an instance of the reason used as the example has the property, or there would be an infinite regress.

An example is an instance of the reason that has the property. A correct example is an illustrative instance of the reason that is known to have the property by the person who doubts the proposition, and this must be known without relying on a proof. Thus the example must firstly be an instance of the reason that is sufficiently different from the subject to allow the person who doubts whether the subject has the property to know that the example has the property. Secondly, the fact that the example has the property must be more obvious than the fact that the subject has the property in order for the person who requires a proof to establish that the subject has the property to know that the example has the property without requiring a proof.

The application contains all four elements used in a proof: the subject, property, reason and example. These elements are presented in a statement that the example is an instance of the reason that has the property, and this also applies to the subject. In order for this to apply

to the subject, the subject must be an instance of the reason. In a correct application, the subject must be known to be an instance of the reason by the person who doubts the proposition. Thus the reason must be sufficiently different from the property to allow the person who doubts the proposition to know that the subject is an instance of the reason before they decide that the subject has the property.

A conclusion consists of a property. A correct conclusion must be the same as the property in the proposition, and the resolution must be made that this property applies to the subject, i.e. the subject has the property. When this resolution is made the doubt about the proposition is completely eliminated and the proof has successfully established the proposition.

A proof in the system of logic preserved in the *Caraka Saṃhitā* does not operate with propositions. The success of a proof is determined by the logical relationship that exists between the elements used in the proof and the epistemological considerations associated with the psychological process of establishing the proposition. These elements must be logically related to one another, and yet sufficiently different from one another to allow each to play its part in the psychological process of moving from the initial doubt about the proposition to the final resolution about the conclusion.

The purpose of a proof is to establish its proposition. A successful proof satisfies the person who is in doubt about the proposition that the proposition is in fact beyond doubt. A proof does this by providing the justification for a person who doubts the proposition to abandon their doubt and resolve that the subject does in fact have the property in question. The person who makes this resolution can be confident that their decision is the correct one by considering the logical relationship that exists between the four elements used in the proof.

## 4.4.2  Aristotle's demonstrations defined

The five-part proof (*sthāpanā*) described in the *Caraka Saṃhitā* is best compared not with syllogisms in general but with a particular type of syllogism, one that Aristotle calls a demonstration. Aristotle begins his presentation of syllogisms in the *Prior Analytics*:

A premiss then is a sentence affirming or denying one thing of another.[1]

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[1] *Prior Analytics* (1.1.24a15-16), trans. Smith, Ross, eds 1908.

An example of a premiss is, 'humans are mortal'. A premiss contains terms:

> I call that a term into which the premiss is resolved, i.e. both the predicate and that of which it is predicated.[1]

A term can be either the subject or the predicate of a premiss. Both humans and mortal are terms in the premiss 'humans are mortal'. Premisses are used to form syllogisms:

> A syllogism is discourse in which, certain things being stated, something other than what is stated follows of necessity from their being so. I mean by the last phrase that they produce the consequence, and by this, that no further term is required from without in order to make the consequence necessary.[2]

A syllogism is a statement consisting of two parts. In the first part, certain things are stated which make it necessary for something not stated to follow as a consequence. That is, what is stated in the second part is not stated in the first part, but it follows as a necessary consequence from what has been stated in the first part.

> Aristotle then begins his description of the different types of syllogism:

> After these distinctions we now state by what means, when, and how every syllogism is produced; subsequently we must speak of demonstration. Syllogism should be discussed before demonstration, because syllogism is the more general: the demonstration is a sort of syllogism, but not every syllogism is a demonstration.[3]

That is, here in the *Prior Analytics* Aristotle describes syllogisms and then in the *Posterior Analytics* he describes a particular type of syllogism called a demonstration.

> Aristotle describes syllogisms in three figures. The first figure has four moods:

> If A is predicated of all B, and B of all C, A must be predicated of all C.
> If A is predicated of no B, and B of all C, it is necessary that no C will be A.[4]

> Let all B be A and some C be B. Then ... it is necessary that some C is A.
> If no B is A, but some C is B, it is necessary that some C is not A.[5]

> It is evident also that all the syllogisms in this figure are perfect [for they are completed by means of the premisses originally taken] and that all conclusions are proved by this figure, viz. universal and particular, affirmative and negative. Such a figure I call the first.[6]

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[1] *Prior Analytics* (1.1.24b16-17), trans. Smith, Ross, eds 1908.

[2] *Prior Analytics* (1.1.24b18-22), trans. Smith, Ross, eds 1908.

[3] *Prior Analytics* (1.4.25b26-31), trans. Smith, Ross, eds 1908. See also Bochenski 1961, 72 ff.

[4] *Prior Analytics* (1.4.25b37-26a1), trans. Smith, Ross, eds 1908.

[5] *Prior Analytics* (1.4.26a24-26), trans. Smith, Ross, eds 1908.

[6] *Prior Analytics* (1.4.26b27-33), trans. Smith, Ross, eds 1908.

Aristotle uses 'predicated of' and the copula 'is' interchangeably. The statement 'A is predicated of all B' is thus 'all B is A'. An example of the first figure is:

> If all humans are mortal, and all Greeks are humans, then all Greeks are mortal.

There are three terms in this syllogism: mortal, humans and Greeks. Aristotle gives these three terms names:

> I call that term middle which is itself contained in another and contains another in itself: in position also this comes in the middle. By extremes I mean both that term which is itself contained in another and that in which another is contained.[1]

In the example syllogism above, the term humans is called middle because it is contained in the extreme term mortal and also contains the extreme term Greeks. The two extreme terms are also given names:

> I call that term the major in which the middle is contained and that term the minor which comes under the middle.[2]

The extreme term mortal is major because it contains the middle term, and the extreme term Greeks is minor because it is contained in the middle term. Next Aristotle explains what he means by one term being contained or included in another:

> That one term should be included in another as in a whole is the same as for the other to be predicated of all of the first. And we say that one term is predicated of all of another, whenever no instance of the subject can be found of which the other term cannot be asserted: 'to be predicated of none' must be understood in the same way.[3]

That is, human is included in the term mortal since mortal can be predicated of all humans, and mortal can be predicated of all humans since there is no instance of human of which mortal cannot be asserted.

Aristotle's syllogisms are in the form of implications. These consist of an antecedent and a consequent. The middle term never occurs in the consequent. In the first figure the middle term is always the subject in the premiss where the major term is predicate, and predicate in the premiss where the minor term is subject. The consequent or conclusion contains two terms, the major and the minor term. Following the first figure, Aristotle presents two other figures which are not required for a comparison with Caraka's proof since they are not used in demonstrations.

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[1] *Prior Analytics* (1.4.25b35-37), trans. Smith, Ross, eds 1908.

[2] *Prior Analytics* (1.4.26a22-23), trans. Smith, Ross, eds 1908.

[3] *Prior Analytics* (1.1.24b27-30), trans. Smith, Ross, eds 1908.

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In the *Posterior Analytics* Aristotle describes the demonstration:

> By demonstration I mean a syllogism productive of scientific knowledge, a syllogism, that is, the grasp of which is *eo ipso* such knowledge. Assuming then that my thesis as to the nature of scientific knowing is correct, the premisses of demonstrated knowledge must be true, primary, immediate, better known than and prior to the conclusion, which is further related to them as effect to cause. Unless these conditions are satisfied, the basic truths will not be 'appropriate' to the conclusion. Syllogism there may indeed be without these conditions, but such syllogism, not being productive of scientific knowledge, will not be demonstration.[1]

Aristotle also says that a demonstration is a syllogism in the first figure:

> Of all the figures the most scientific is the first. Thus, it is the vehicle of the demonstration of all the mathematical sciences, ... for the syllogism of the reasoned fact is either exclusively or generally speaking and in most cases in this figure ... the first figure has no need of the others, while it is by means of the first that the other two figures are developed, ... Clearly, therefore, the first figure is the primary condition of knowledge.[2]

Aristotle defines a demonstration as a syllogism in the first figure with premisses that meet three criteria. The premisses must be: (i) true and primary, i.e. basic and necessary truths, (ii) immediate, i.e. known independent of demonstration, better known than the conclusion, and known before the conclusion is known, and (iii) related to the conclusion in the appropriate manner. If these conditions are not met the syllogism is not a demonstration and will not result in scientific knowledge.

The epistemic requirements of a demonstration have some things in common with the epistemic requirements of Caraka's proofs. This makes the demonstration a better basis for comparison with a proof than syllogisms in general.

## 4.4.3  Proofs compared with demonstrations

The terms found in a syllogism of the first figure can be used to form a proof, and this process can be reversed, i.e. the elements of a proof can be used to form a syllogism in the first figure. For instance, the terms used in a syllogism in the first mood, 'if all humans are mortal, and all Greeks are humans, then all Greeks are mortal', i.e. mortal, human, and Greeks, can be used to form the following five-part proof:

| | |
|---|---|
| (1) Greeks are mortal | Proposition |
| (2) Because of being human | Reason |

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[1] *Posterior Analytics* 1.2.71b16-24), trans. Smith, Ross, eds 1908.

[2] *Posterior Analytics* (1.14.79a16-32), trans. Smith, Ross, eds 1908.

(3) Like Egyptians                                                                           Example
(4) Just as Egyptians are human and mortal, so are Greeks    Application
(5) Therefore, mortal                                                                  Conclusion

The process involves identifying the three terms used in the syllogism and placing them in the correct place in a proof. The middle term, humans, is used in the reason and is also a property in the application. The minor term, Greeks, becomes the subject in the proposition and also appears in the application. The major term, mortal, becomes the property in the proposition, in the application, and in the conclusion. The universal 'all' used in the syllogism is dropped and an example (Egyptians) is added in the proof.

The same process is involved in the other three moods in the first figure. The only difference is that in the second and fourth moods, the negative in 'no B is A' is first moved from the middle term B to the major term A and the universal 'all' is added to the middle term, i.e. 'all B is not A'. In the third and fourth moods, the particular 'some' remains with the minor term C, i.e. 'some C is B'. Proofs can then be formed with the terms from the other three moods in the same way as was done with the first mood. This process can be reversed to form syllogisms from the elements used in a proof.

Although it is possible to form a syllogism using the elements from a proof, the Indian proof does not correspond to an Aristotelian syllogism as is so often claimed. For instance, Blakey claims that:

> In comparing the European syllogism with the Hindu logic, it has been observed, that the three last propositions correspond exactly to our syllogism, with this single difference– that the first, or major term, contains invariably an *example*.[1]

Barlingay also claims that the only difference between the Indian and Greek syllogisms is that the Indian syllogism includes an example (*dṛṣṭānta*) whereas the Greek syllogism does not:

> Statement of the dṛṣṭānta in the body of the syllogism, then, is the only characteristic difference which distinguishes the Indian type of syllogism from the Greek.[2]

Sharma claims that the last three members (example, application and conclusion) of the Nyāya (Indian) syllogism correspond to the Aristotelian syllogism:

> Hence if we leave out the first two members of the Nyāya syllogism which are contained in the last two, we find that it resembles the Aristotelian syllogism in the First Figure.[3]

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[1] Blakey 1851, 384.

[2] Barlingay 1962, 164.

[3] Sharma 1960, 199.

Stcherbatsky claims that it is just the last two members (application and conclusion) that correspond to an Aristotelian syllogism:

> At a later date the Mīmāṃsakas, probably under the influence of the Buddhist critique, made the concession that either the first three members or the last three were sufficient to establish the conclusion. In the last three, if we drop the example [dṛṣṭānta], we will have a strictly Aristotelian syllogism, its first figure.[1]

However, the last two or three members of a proof do not meet the criteria for a syllogism as defined by Aristotle. The example member can be included or ignored as it does not play a decisive role in proving that the Indian proof does not correspond to an Aristotelian syllogism. The last two members from the proof above are:

(4) Just as Egyptians are human and mortal, so are Greeks    Application
(5) Therefore, mortal                                        Conclusion

In order for this to qualify as an Aristotelian syllogism it must contain the two essential parts of a syllogism. The conclusion in this proof is an abbreviation of 'mortal applies to Greeks', i.e. Greeks are mortal. It must therefore belong in the second part of a syllogism, the conclusion, and it must follow as a necessary consequence from what is stated in the first part. The application presents a difficulty. The first part of a syllogism must not state what is stated in the second, and the application states that what applies to Egyptians, i.e. they are human and mortal, also applies to Greeks. The problem lies in the second part of the application:

Part 1:   Just as Egyptians are human and mortal,      Application (Part 1)
          so are Greeks (human and mortal)             Application (Part 2)
Part 2:   Therefore, mortal (applies to Greeks)        Conclusion

The statement that Greeks are human and mortal in the second part of the application cannot be placed in Part 1 of a syllogism because it includes the statement that Greeks are mortal. But if it is placed in Part 2 then Part 1 lacks a statement that Greeks are human. Part 1 also lacks the statement that all humans are mortal. Without these two statements in Part 1, the statement that Greeks are mortal in Part 2 does not follow as a consequence from what is stated in Part 1. Thus a proof does not constitute a syllogism as defined by Aristotle. Adding more of the five parts of the Indian proof does not help to produce an Aristotelian syllogism.

The proof as described in the *Caraka Saṃhitā* does not correspond to an Aristotelian syllogism. Rather, it is related to the early Indian systems of forming arguments with ten

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[1] Stcherbatsky 1930-32, **1**, 26.

components. Changing a proof in an attempt to make it conform to the pattern of a syllogism not only fails to form a legitimate syllogism but it also prevents a proof from successfully establishing its proposition. A proof that establishes its proposition does so for the person who is in doubt about the proposition. This person considers the proof with the aim of deciding whether the subject of the proposition does or does not have the property in question. Thus the proposition must be stated first and must be borne in mind by the person who is considering the remaining four parts of the proof. The process of considering the proof is a psychological process with requirements relevant only to the person who doubts the proposition. A proof must end with the resolution that the property in the conclusion does in fact apply to the subject. In this way the doubt about the proposition is eliminated.

It is a mistake to apply the criteria required of an Aristotelian syllogism to Caraka's proofs or to Indian logic in general. It is even misleading to use Aristotelian terminology to explain Indian logic. Müller acknowledged this as early as 1853 when he said that if he had explained Indian logic using Aristotelian terminology then "all that is peculiar to Indian philosophy would have been eliminated, and the remainder would have looked like a clumsy imitation of Aristotle."[1] This view is supported by Kitagawa who says: "to interpret Indian logic using the terminology of Aristotelian logic, ... is not to represent Indian logic as it is, but merely to review Aristotelian logic as applied to Indian logic."[2]

## 4.5    Greek influence in Indian medicine

It could be argued that even though Caraka's proofs do not conform to the requirements of a syllogism, it is still very likely that the Greeks did influence Caraka's system of proofs because the Indian medical tradition (Āyurveda) in which Caraka's proofs are found was itself strongly influenced by the Greeks. That is, Caraka must have known about Greek medicine and he therefore probably knew about Greek logic as well. Caraka could have been inspired by Greek logic and may well have attempted to bring the same degree of rigour to Indian logic as he found in Greek logic.

The problem with this argument is that there is no real evidence that Greek medicine influenced Indian medicine. Many argue that the similarities between the Greek and Indian

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[1] Müller 1853, 68.

[2] Kitagawa 1960, 390.

medical systems show that the Indians borrowed their ideas from the Greeks. Rawlinson for instance claims that Caraka borrowed from Hippocrates and Galen:

> The medical works of Caraka and Suśruta borrow largely from Hippocrates and Galen, and if, as is usually stated, Caraka was court-physician to Kanishka, this is easily explicable.[1]

One piece of evidence often used to argue for Indian borrowing from the Greeks is the supposed similarity between the oath described in the *Caraka Saṃhitā* and the Hippocratic oath. Vogel claims that the two oaths are exactly the same:

> The oath which, according to Hippocrates, Greek physicians had to take at the time of entering on their professional duties, shows an almost verbal agreement with the rules prescribed for the Indian medical men as found in the works of Suśruta and Caraka.[2]

Jairazbhoy also claims that Caraka's oath is the same as the Hippocratic oath:

> Another striking correspondence in Caraka is the prescribing of rules for the Indian doctor, which resembles very minutely the oath which the Greek physician, according to Hippocrates [d.c.370 BC], had to take upon entering his duties. The resemblance is not only in ideas but also in sentiments and expressions, as the juxtaposing of passages from Caraka and Hippocrates indicates.[3]

However, on closer inspection the two oaths are found not to be as similar as claimed. Regarding the size of the English translations of each oath, the Hippocratic oath has a little less than 400 words[4] whereas Caraka's oath is nearly twice that size.[5] Regarding the contents of each oath, the similarities are that both mention respect for one's teacher, to always benefit patients, not to attempt to seduce others, not divulge anything that should be kept secret about patients, and to live a morally pure life. The differences are that the Hippocratic oath includes the undertakings to teach one's own sons, the sons of one's teacher, and disciples bound by the oath, but no one else, not to give poisons or abortive remedies, and to refrain from surgery. These are not mentioned in the *Caraka Saṃhitā*. Caraka's oath includes many things not mentioned in the Hippocratic oath, e.g. remaining celibate (while a student), keeping a beard, not eating meat, not possessing weapons, refraining from excessive drinking, not to treat certain people such as those disliked by the king or by other powerful people, not to treat

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[1] Rawlinson 1937, 23; cf. Rawlinson 1916, 172.

[2] Vogel 1912, 40.

[3] Jairazbhoy 1963, 79.

[4] Edelstein 1967, 6.

[5] *Caraka Saṃhitā* (3.8.13-14), trans. Sharma 1981-94, **1**, 354-356. See Mehta 1949, **1**, 164-168, for other oaths in the Indian medical literature.

the wicked or those close to death, to refrain from boasting and to devote oneself to medicine. There is nothing in Caraka's oath to suggest that it was influenced by the Hippocratic oath and what similarities do exist between the two oaths are not surprising given that both oaths were taken by those intent on a career in medicine.

Another common argument is that both the Greek and Indian medical systems are based on the theory of humours. The Greek system proposes four chief fluids of the body, i.e. blood, phlegm, choler (yellow bile), and melancholy (black bile), and the predominance of one was thought to determine a person's physical and mental qualities. The Indian system proposes a theory of three faults (*tri-doṣa*) where imbalances in the amounts of wind (*vāta, vāyu*), bile (*pitta*) or phlegm (*kapha, śleṣman*) are believed to cause diseases.[1]

Vogel claims that since both humoral systems are very similar, India must have borrowed its version of the system from Greece:

> The Ayur-Veda, or medical science of ancient India, is based on the theory of the four humours, which, slightly modified, was borrowed from the Greeks. There is reason to assume that the loan took place in the period intervening between Hippocrates and Galienus, in other words between the 4th century BC and the 2nd century AD. It will be noticed that this very nearly coincides with the period of the close contact between India and Hellenistic Asia sketched above.[2]

Although there are similarities between the two humoral systems and there was close contact between Indians and Greeks as Vogel describes, the Indian medical system in general and the humoral theory in particular are found in Buddhist sources that pre-date the arrival of the Greeks in India. There are numerous references to medical treatment found in the early Buddhist works preserved in Pāli.[3] Zysk explains that the Buddhist "monastic organisation provided a suitable vehicle for the first codification of medical knowledge",[4] and it thus "played a significant role in the institutionalization of medicine".[5] Zysk, following Frauwallner,[6] dates the *Vinaya* (corpus of regulations for life as a renunciant) as belonging to

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[1] Zysk 1991, 29. Scharfe 1999, 618-625 lists and discusses Caraka's explanation of the three humours in the *Caraka Saṃhitā*. Caraka does not mention blood as a humour.

[2] Vogel 1912, 40.

[3] *Aṅguttara Nikāya* (2.87, 5.110), *Majjhima Nikāya* (1.187, 1.422, 3.90, 3.241), *Saṃyutta Nikāya* (4.229-230). See list of sources in Scharfe 1999, 612-615, and in Meulenbeld 1999-2000, **IIA**, 820-821. See also Yashpal 1949; and Zysk 1982.

[4] Zysk 1990, 123.

[5] Zysk 1991, 6. See review in Wezler 1995.

[6] Frauwallner 1956, 67.

the first half of the fourth century BC, and says "we can safely conclude that the crystallisation of the classical system of India medicine was already well under way by that time."[1] That is, before the period of close contact between the Greeks and Indians as described by Vogel. Zysk says the "Buddhist monastic medicine represents the earliest extant codification of medical doctrines" in India.[2] Regarding the Indian humoral system Zysk explains:

> Central to *āyurveda* is an etiology based on three "peccant" humors, or *doṣa*s: wind, bile, and phlegm. Evidence of a complete formulation of this theory can be traced in Buddhist Pāli literature, where the three humors and their combination are mentioned as causes of disease.[3]

Caraka's humoral system has clear antecedents in Buddhist literature and thus the presence of the humoral theory in the *Caraka Saṃhitā* does not constitute evidence of Greek influence.

Opinions vary on the origin of the humoral system and on the influence between the Indian and Greek medical systems. Some argue that Indian medicine influenced Greek medicine.[4] Jairazbhoy points out that a number of Indian medicinal plants are included in the pharmacological treatise *De materia medica* by the Greek physician Pedanius Dioscorides (c.40 AD - c.90 AD) written around the year 77 AD.[5] Others argue only that it is possible for Indian medicine to have influenced Greek medicine, or that there may have been borrowing on both sides.[6] Keith claims that evidence tells conclusively against Greek borrowing from India.[7] The evidence for Indian influence in Greek medicine is uncertain, but it is clear that there is no compelling evidence for Greek influence in Indian medicine.[8]

## Conclusion

Caraka wrote at a time when the opportunity for Greek influence certainly existed, but there is no evidence of any such influence to be found in the *Caraka Saṃhitā*. There is no evidence of Greek influence in either the logic or in the medical system that Caraka describes. There are Indian antecedents that can account for the origin of Caraka's views on both of

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[1] Zysk 1982, 79.

[2] Zysk 1991, 84.

[3] Zysk 1991, 119.

[4] Conger 1952, 109-110; Majumdar 1954, 3, 629; and Mukhopadhyaya 2000, 243.

[5] Jairazbhoy 1963, 77-80. Supported by Mukhopadhyaya 2000, 245.

[6] See Hoernle 1907b, iv; Müller 1933, 327; Basham 1954, 499; and Zysk 1991, 119.

[7] Keith 1908, 139.

[8] MacDonell 1900, 426; Smith, 1919, 143; and Clark 1937, 353.

these subjects. Most of the information on logic is found in the description of the 44 terms. Caraka is probably not the author of this list of terms because Caraka's own views on epistemology seem to vary slightly from the views on epistemology found in the list of 44 terms. In the discussion on rebirth, Caraka presents four means of examination: authoritative statements (or tradition), perception, inference, and ratiocination. Here ratiocination is described as being separate from inference, a view unique to Caraka, and no mention is made of analogy. In the list of 44 terms, Caraka discusses the four traditional means of valid cognition: perception, inference, tradition, and analogy. This suggests that when Caraka describes the 44 terms he is following the accepted system of his time rather than one of his own invention.

The five-part proof in the *Caraka Saṃhitā* is discussed only in the list of 44 terms. This form of argument is related to a ten-membered argument used by other ancient logicians in India. The five psychological states associated with a proof (doubt, purpose, scepticism, inquiry, and resolution), plus the five actual members of a proof (proposition, reason, example, application, and conclusion), correspond to the ten components that Vātsyāyana claims ancient Indian logicians used (see above). The ten-membered system probably originated in the ancient system of debate and was then split into two sets of five. The five psychological members were set aside as not being part of the actual proof and this left the five traditional members that make up a proof. Many other terms in Caraka's list also appear to have originated in the tradition of debate in ancient India. There is no clear evidence of Greek influence in either Caraka's logic or his system of medicine and there are good reasons to accept both as having purely Indian origins. Early works on logic and debate follow the pattern of describing lists of terms. The next such work in chronological order after the *Caraka Saṃhitā* is the *Upāyahṛdaya* (Essential Methods).

# Chapter five: A lost Buddhist text

## 5.1    Background to the work

This chapter examines the *Upāyahṛdaya* (Essential Methods), one of the earliest
surviving works on Indian logic. The main purpose of this discussion is to establish the next
stage in the development of Indian logic after the *Caraka Saṃhitā*. The *Upāyahṛdaya* was
written by a Buddhist and it describes a system of logic similar to the one found in the *Caraka
Saṃhitā*. Both works are based on a list of technical terms. In fact, many of the terms found in
the *Caraka Saṃhitā* are also described in the *Upāyahṛdaya*, except that the *Upāyahṛdaya*
supplies more information on some terms. The comparison between the logical terminology
in the *Upāyahṛdaya* and the *Caraka Saṃhitā* presented below shows that both works follow
the same system of logic. This suggests that there was a common system of logic in ancient
India, probably followed by a number of schools. Further, the way these terms are described
indicates the *Upāyahṛdaya* represents a later stage in the development of Indian logic than the
one found in the *Caraka Saṃhitā*.

The *Upāyahṛdaya* was written at a time in Indian history when the possibility for Greek
influence certainly existed. However, there is no evidence of any Greek influence in the work.
It presents a development of the same system that Caraka describes. This system has its
origins in the ancient Indian tradition of debate and not in anything introduced by the Greeks.
This adds further weight to the argument that Indian logic developed on its own, independent
of any foreign influence.

The *Upāyahṛdaya* was written around the first or second century AD. The Sanskrit
original is lost, but a Chinese translation, the *Fang pien hsin lun*,[1] has been preserved. The
*Upāyahṛdaya* was brought to the attention of the scholarly (English speaking) world only in
1905 when Śāstri referred to it under the title *Upāyakauśalya* and mentioned that it was a
great polemical work devoted to an exposition of the Nyāya (logic).[2] In 1929 Tucci
retranslated the Chinese translation back into Sanskrit and gave it the name *Upāyahṛdaya*.[3]
The original title of the work is unknown and the work could be called the *Prayogasāra*. In

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[1] Nanjiō 1247.

[2] Śāstri 1905b, 178.

[3] Tucci 1929b.

any event, its title should not be the *Upāyakauśalyahṛdaya*,[1] nor should it be confused with a completely unrelated work, the *Upāyakauśalya Sūtra*.[2]

The editor of the Sung version of the Chinese Tripiṭaka (Buddhist Canon) attributed the *Upāyahṛdaya* to Nāgārjuna, the famous Buddhist dialectician who founded the Madhyamaka (Middle Way) system of philosophy. Scholarly opinion is divided over this attribution. Both Śāstri and Vidyābhūṣaṇa accepted that the work is by Nāgārjuna,[3] whereas Ui rejected the attribution and claimed instead that the work is by some unknown Buddhist following the Abhidharma tradition who came after the *Caraka Saṃhitā*.[4] Tucci says there are "no grounds either for affirming or for denying its attribution to Nāgārjuna."[5] Warder argues that the *Upāyahṛdaya* belongs to the Bahuśrutīya school, an offshoot of the Mahāsaṃghika school of Buddhism.[6] Nakamura follows Ui in not accepting that the work is by Nāgārjuna,[7] and Lindtner in his study on Nāgārjuna's writings lists the *Upāyahṛdaya* in the category of works most probably not by Nāgārjuna.[8] Ramanan also accepts that the *Upāyahṛdaya* is not by Nāgārjuna since it has hardly any bearing on the principal theme of Nāgārjuna's works.[9] Kajiyama initially thought that the work was not by Nāgārjuna, but subsequently changed his mind. He originally said: "It is now ascertained that this text belongs, not to Nāgārjuna, but to some Hīnayāna author perhaps anterior to Nāgārjuna."[10] However, he later objected to Ui's claim that the work was not by Nāgārjuna,[11] and more recently, he criticised Ui's reasons for claiming that the work is not by Nāgārjuna and concluded: "Thus I find no reason to cancel the ascription of the text to Nāgārjuna made by the editor of the Sung version of the Chinese

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[1] Tucci 1929a, 451-452; and Tucci 1929b, xi.

[2] Trans. in Chang 1983, 427-468; and in Tatz 1994.

[3] Śāstri 1905b, 178; and Vidyābhūṣaṇa 1920, 259.

[4] In 1925, see Ichimura 1992, 14; and Ichimura 1995, 20.

[5] Tucci 1929a, 452.

[6] Warder 1970, 395 note 1; see p. 267 for a description of the views of the Bahuśrutīya school.

[7] Nakamura 1980, 243.

[8] Lindtner 1982, 17 note 44; see also p. 71 note 110.

[9] Ramanan 1966, 34-35.

[10] Kajiyama 1965, 129.

[11] Ichimura 1995, 20.

Tripiṭaka."[1] Ichimura agrees with Śāstri, Vidyābhūṣaṇa and Kajiyama in accepting that the *Upāyahṛdaya* was written by Nāgārjuna.[2]

The author of the *Upāyahṛdaya* remains in some doubt, although there is general agreement that he was a Buddhist. The period during which the work was composed is suggested by the logical terminology found in the work. The *Upāyahṛdaya* uses many of the same terms found in both the *Caraka Saṃhitā* and the *Nyāya Sūtra* (Logic Aphorisms), described in the next chapter. None of these three works actually refers to the other by name, but their respective descriptions of common terms suggests that the *Upāyahṛdaya* probably came after the *Caraka Saṃhitā*, but before the *Nyāya Sūtra*. This places the *Upāyahṛdaya* around the first or second century AD with as much certainty as surrounds the dates of the other two works.

A comprehensive description of all the logical material in the *Upāyahṛdaya* has yet to be published, although some of its contents have been summarised a number of times.[3] The only significant study of the work is by Kajiyama,[4] who focuses on the author's identity. There are no extant commentaries on this work and the text itself lacks explanatory detail. It is written in a very compact style so often used in ancient Indian works. This style leaves it to the reader to deduce the logical significance of the points being made. The following account not only describes all the logical terminology found in the work, but it also explains the logical significance of these terms. This account is based on Tucci's Sanskrit reconstruction.[5]

The *Upāyahṛdaya* is divided into four chapters. The first chapter describes eight terms:

1. instance (*udāharaṇa*),
2. theory (*siddhānta*),
3. commendable speech (*vākya-praśaṃsā*),
4. defective speech (*vākya-doṣa*),
5. inference (*anumāna*),
6. appropriate speech (*samayocita-vākya*),
7. fallacious reason (*hetvābhāsa*), and
8. adoption of a fallacious reason (*duṣṭa-vākyānusaraṇa*).

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[1] Kajiyama 1991, 109.

[2] Ichimura 1992, 14; and Ichimura 1995, 20.

[3] Vidyābhūṣaṇa 1920, 259-261; Tucci 1929b, ix-xxx; Solomon 1976-78, **1**, 185-189 and 245-247; Kajiyama 1991, 109-113; and Matilal 1998, 74-80.

[4] Kajiyama 1991.

[5] English translation by Michael Spurr 2003 (unpublished).

Chapter two describes:

> 9. points of defeat (*nigraha-sthāna*).

Chapter three discusses philosophical issues, and chapter four describes:

> 10. refutations (*duṣana*).

## 5.2    Eight logical terms

### Instance (1)

The first term, instance (*udāharaṇa*),[1] is described as something understood by both ordinary people and the learned alike,[2] exactly as it is in the *Caraka Saṃhitā*.[3] One small difference is that Caraka uses the term example (*dṛṣṭānta*) whereas the *Upāyahṛdaya* uses instance (*udāharaṇa*) for the third part of a proof. The *Upāyahṛdaya* describes two types of instance: affirmative or similar instance (*anvayi-udāharaṇa*) and negative or dissimilar instance (*vyatireki-udāharaṇa*), whereas Caraka mentions only one type which corresponds to the first of these two, the affirmative instance.

The five parts of a proof are not discussed in the *Upāyahṛdaya*, but a proof consisting of the usual five parts is presented in the beginning of the fourth chapter. It is unclear whether the author of the *Upāyahṛdaya* accepts that all five parts are required in a proof.[4] There is neither an endorsement nor a specific denial of the five-part proof in the *Upāyahṛdaya*. Certainly the first three parts of a proof would be accepted by the author, and the application and conclusion parts are not required in order to explain the two types of instance (example). The first three parts of a proof are for instance:

| | |
|---|---|
| (1) Sound is impermanent | Proposition |
| (2) Because of being a product | Reason |
| (3) Like a pot, and unlike ether | Instances (examples) |

A pot is the affirmative or similar instance since it is an instance of the reason that has the property in the proposition, i.e. a pot is a product that is impermanent. Ether is the negative or dissimilar instance since it is an instance of the opposite of the reason that does not have the property in the proposition, i.e. ether is a non-product that is permanent. It is

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[1] Vidyābhūṣaṇa 1920, 259.

[2] Warder 1971, 133 and 395; and Kajiyama 1991, 109.

[3] Term 12 (*dṛṣṭānta*) in *Caraka Saṃhitā* (3.8.34), trans. Sharma 1981-94, 1, 361.

[4] Tucci 1929b, xix note 2, claims the application and conclusion parts of a proof were admitted by the author. See also Warder 1971, 133.

unclear whether the author accepts that both instances (examples) are required in a successful proof or whether either one of the two instances would be sufficient. The person who doubts the proposition must decide whether or not the subject has the property, i.e. whether or not sound is impermanent. To do this, the subject is compared with the two instances. If the proposition is to be affirmed then sound would be something produced like a pot, and if the proposition is to be negated then sound would be something unproduced like ether.

**Theory (2)**

The second term is theory (*siddhānta*). Four types are listed:

1. universal theory (*sarvatantra-siddhānta*) – accepted by all schools,

2. restricted theory (*partitantra-siddhānta*) – held only by particular schools,

3. implied theory (*adhikaraṇa-siddhānta*) – implied by another statement, and

4. hypothetical theory (*abhyupagama-siddhānta*) – assumed for the sake of argument.[1]

These are exactly the same as the four types of theory described in the *Caraka Saṃhitā*.[2] Theories are established by the four means of valid cognition (*pramāṇa*): perception (*pratyakṣa*), inference (*anumāna*), analogy (*upamāna*) and scriptural tradition (*āgama*). The last two of these four terms are slightly different from the ones used by Caraka. Firstly, the term *upamāna* (analogy) is spelt "*aupamya*" in the *Caraka Saṃhitā*, and secondly, the terms *aitihya* (tradition) and *āptopadeśa* (authoritative statement) are used in the *Caraka Saṃhitā* whereas the *Upāyahṛdaya* uses *āgama* (scriptural tradition). The meanings of these terms, however, are the same as their counterparts in the *Caraka Saṃhitā*.

**Commendable speech (3)**

Commendable speech (*vākya-praśaṃsā*) is described as being free from both deficiency (*nyūna*) and redundancy (*adhika*) in the example, the reason and the proposition (i.e. in the first three parts of a proof), and which is also not repetitive (*punar-ukta*), meaningless (*anartha-ukta*) or incoherent (*apārthaka*).[3] This description of commendable speech is consistent with proofs being composed of only three rather than five parts.

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[1] Vidyābhūṣaṇa 1920, 259.

[2] Term 16 in *Caraka Saṃhitā* (3.8.37), trans. Sharma 1981-94, **1**, 362.

[3] Ichimura 1995, 24; and Solomon 1976-78, **1**, 246.

**Defective speech (4)**

Defective speech (*vākya-doṣa*) is the opposite of the former term. Speech is defective if it involves any of the faults listed in commendable speech. The *Caraka Saṃhitā* describes these same two terms as either involving or being free from five faults: deficiency, redundancy, meaninglessness, incoherence and contradiction.[1] The description of these two terms in the *Upāyahṛdaya* is practically the same as that in the *Caraka Saṃhitā* except that the *Upāyahṛdaya* does not include contradiction (*viruddha*) in its list of faults,[2] and the spelling of some Sanskrit terms varies slightly between the two works.

**Inference (5)**

Inference (*anumāna*) is divided into three types:

1.  as before (*pūrvavat*) is an inference from previous observation, e.g. inferring from the sight of some physical characteristic (a scar) previously observed on a child to the conclusion that the same person is present (as an adult),

2.  as the remainder (*śeṣavat*) is an inference from a known instance to the remainder, e.g. inferring from the taste of one drop of sea water to the conclusion that all the sea water is salty, and

3.  as observed in similar (instances) (*sāmānyato-dṛṣṭa*) is an inference from what is observed in other similar cases, e.g. inferring from the observation of the sun in different locations to the conclusion that the sun, like other bodies that occupy different locations, is moving.[3]

Caraka also divides inference into three, but he does not provide names for his three types of inference. He simply says that inference is of three types and is related to the three times.[4] The terms and examples in the *Upāyahṛdaya* do not reflect a classification of inference based on time. The first type, as before, is an inference from what has been observed in the past to a conclusion about a present object; the second type, as the remainder, is an inference from what has been observed in one part to a conclusion about what is present

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[1] Terms 33 and 34 in *Caraka Saṃhitā* (3.8.54-55), trans. Sharma 1981-94, **1**, 365-366.

[2] Contradiction (*viruddha*) is included in fallacious reasons (*hetvābhāsa*) described below.

[3] Tucci 1929b, xvii-xviii; Schuster 1972, 381; Solomon 1976-78, **1**, 380; Matilal 1985, 30; and Gokhale 1992, 226-227. Cf. Vidyābhūṣaṇa 1920, 260.

[4] *Caraka Saṃhitā* (1.11.21-22), trans. Sharma 1981-94, **1**, 72. Cf. trans. in Schuster 1972, 391 note 46.

in the whole; and the third type, as observed in similar instances, is an inference from what has been observed in a number of cases to a conclusion about the present case.[1]

The third type of inference differs from the first two in that its conclusion is about something not perceptible by, i.e. visible to, the person making the inference. In the example, the sun's movement cannot be seen by the person making the inference. It is known only through inference by comparing what is perceptible, namely the sun's occupying different locations, with what has been seen in other cases of bodies occupying different locations. In other cases, e.g. a person walking, movement is visible in a body that occupies different locations and thus the sun, which is seen to occupy different locations, is also known to be moving.

The classification scheme for inference in the *Upāyahṛdaya* is quite different from that used in the *Caraka Saṃhitā*. The *Caraka Saṃhitā* classifies inference based on time, i.e. from the perception of some evidence in the present to a conclusion about something in either the present, past or future, respectively. The *Upāyahṛdaya* classifies inference based on the way the evidence is related to the conclusion, i.e. whether the inference is from past to present, from part to whole, or from similar cases to one case. This system of classification is reflected in the names given to each type of inference. These are: (i) as before, i.e. as in the past, so in the present, (ii) as the remainder, i.e. as in a part, so in the whole, and (iii) as observed in similar (instances), i.e. as in other similar cases, so in this case. The only similarity between the classification system in the *Upāyahṛdaya* and the *Caraka Saṃhitā* is that both divide inference into three types.

**Appropriate speech (6)**

The next term, appropriate speech (*samayocita-vākya*), is described as speech relevant for the topic and for the occasion. For instance, when discussing tomorrow's weather it is appropriate to speak about today's sky.[2] This term is not mentioned in the *Caraka Saṃhitā*.

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[1] Warder 1971, 135.

[2] Vidyābhūṣaṇa 1920, 260.

**Fallacious reason (7)**

Fallacious reasons (*hetvābhāsa*) are divided into eight:[1]

1. Verbal equivocation (*vāk-chala*)

A reason involving verbal equivocation is one that plays on the meanings of words. For instance, the word "*nava*" in Sanskrit can mean new or nine. In response to the statement that someone has a new (*nava*) blanket the opponent presents the proof 'this man does not have nine (*nava*) blankets, because of having only one blanket'. And in response to the reply that there is only one blanket, but it is a new blanket made of newly woven threads, the opponent presents the proof 'this blanket is not made of nine threads, because of having many (hundreds of) threads'. Other examples of verbal equivocation in the *Upāyahṛdaya* use the same Sanskrit word *nava* interpreted in other ways, as well as an example of equivocation that involves interpreting words in their literal sense when they were used in their figurative sense. For example, in response to the statement that the mountain is on fire, the opponent claims that the mountain is not on fire because grass and trees are burning rather than the mountain itself. These examples seem to suggest the variety of ways that verbal equivocation can occur.

2. Universal equivocation (*sāmānya-chala*)

A reason involving universal equivocation is one that over-generalises the meanings of words, e.g. the term *emptiness* is used in Buddhist ontology to mean that objects are empty of a certain characteristic or mode of existence. In response to the statement that the elements are empty, the opponent presents the proof 'the elements have no characteristics, because they are empty, like ether'. Here the meaning of the term empty has been extended to exclude all forms of existence rather than excluding just a certain mode of existence. This example is followed by a short discussion on the Buddhist theory of production.

Only one example of universal equivocation is provided and the work says specifically that equivocation is two-fold, verbal and universal equivocation. This implies that the author of the *Upāyahṛdaya* does not accept a third type of equivocation. The *Caraka Saṃhitā* also discusses the same two types of equivocation, except that Caraka describes these two types of equivocation as faulty statements rather than as faulty reasons.[2]

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[1] See Vidyābhūṣaṇa 1920, 260; Warder 1971, 133 and 136; Solomon 1976-78, **1**, 246-247, and 280; and Kajiyama 1991, 109-110.

[2] Term 35 in *Caraka Saṃhitā* (3.8.56), trans. Sharma 1981-94, **1**, 366-367.

3. Similar to (the grounds for) doubt (*saṃśaya-sama*)

A reason that is similar to the grounds for doubt is one that provides grounds to doubt the proposition. The purpose of a reason in a proof is to provide the grounds to eliminate doubt about the proposition, whereas this type of reason acts as a cause to doubt the proposition. For instance, in response to the question whether a tall upright object seen in dim light is a man or a post, an opponent may present the proof 'that object is a man, because of standing erect'. The person considering this proof is in doubt as to whether or not the object in question is a man. The reason (standing erect) is only more evidence to doubt the proposition (this object is a man) rather than being grounds to eliminate doubt about the proposition.

This term is also used by the author of the *Upāyahṛdaya* to name one of the refutations (*dūṣaṇa*), equivalence in doubt (*saṃśaya-sama*), (number 15 below). This type of refutation argues against a faulty proof on the grounds that the reason in the proof is evidence both for and against the subject having the property in the proposition. The *Caraka Saṃhitā* also uses this term (*saṃśaya-sama*) to name one of its three fallacious reasons.[1] Caraka's description is similar to the description here in the *Upāyahṛdaya*.

4. Mis-timed (*kālātīta*)

A reason that is mis-timed is one that is presented after the opportune moment for its use has elapsed. For instance, someone first presents the proof, 'the Vedas are permanent, because of consisting of sound'. In reply to this, an opponent argues that it is unacceptable to claim that the Vedas are permanent on the grounds that they consist of sound when the defendant has not yet proved that sound is permanent. In order to meet this objection the defendant next presents a second proof, 'sound is permanent, because of being formless, like ether'. However, the reason in this second proof (being formless) is mis-timed. That is, the opportune moment for its use has elapsed. The defendant should have used this reason to prove that sound is permanent first and then use the fact that sound is permanent to prove that the Vedas are permanent and not the other way around. The author of the *Upāyahṛdaya* says in conclusion there is no point attempting to establish later what should have been established earlier, just as there is no point seeking water after the house has burnt down.

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[1] Term 36 in *Caraka Saṃhitā* (3.8.57), trans. Sharma 1981-94, **1**, 367.

Caraka describes a similar term, delayed statement (*atītakāla*), in the same way, i.e. as a statement presented after the appropriate moment for its use has elapsed.[1] Caraka also lists mis-timed statement (*kālātīta-vacana*) as a point of defeat, but without a description.[2] The *Upāyahṛdaya* describes another term, mis-timed proof (*aprāpta-kāla*), as one of the points of defeat (number 16 below).

5. Similar to the point at issue (*prakaraṇa-sama*)

A reason that is similar to the point at issue is one that is not sufficiently different from the proposition to effectively eliminate doubt about the proposition. For instance, the reason in the proof, 'the self is permanent, because of being distinct from the body, just as a pot is impermanent because of being distinct from ether', is a reason that is similar to the point at issue. The author of the *Upāyahṛdaya* argues that if the self is permanent because of its being distinct from the body, then a pot would be permanent since it is also distinct from a (human) body. And if being distinct from the body is not sufficient reason for a pot to be permanent, then being distinct from the body would not be sufficient reason for the self to be permanent. The point at issue in this proof is whether the self is distinct from the body and permanent or whether the self is not distinct from the body and impermanent. A reason that merely insists on one of these two alternatives without providing any additional information does not provide the necessary grounds to eliminate doubt about the proposition. Caraka also describes a reason similar to the point at issue in the same way, even using a similar example.[3]

6. Similar to the subject (*varṇya-sama*)

A reason that is similar to the subject is one where the instance of the reason used as the example stands as much in need of a proof that it has the property in the proposition as does the subject. For instance, in the proof, 'ether is permanent, because of being intangible, like mind (*mana*) and consciousness (*vjiñāna*)', the example (either mind or consciousness) is an instance of the reason (intangible) that stands in need of a proof that it is permanent. The fact that the subject requires a proof to establish that it has the property in the proposition is of course acceptable since that is the very purpose of a proof. But the example must be an instance of the reason that is known to have the property in question by the person who

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[1] Term 37 in *Caraka Saṃhitā* (3.8.58), trans. Sharma 1981-94, **1**, 367-368.

[2] Term 44 in *Caraka Saṃhitā* (3.8.65), trans. Sharma 1981-94, **1**, 368-369.

[3] Term 36 in *Caraka Saṃhitā* (3.8.57), trans. Sharma 1981-94, **1**, 367.

doubts the proposition without requiring a proof. If a proof is required in order to establish that the example has the property in question then this would lead to an infinite regress. Caraka also describes a reason similar to the subject in the same way, as the third fallacious reason.[1]

### 7. Inconclusive (*sa-vyabhicāra*)

An inconclusive reason is one that is not limited to those things that have the property specified in the proposition. For instance, in the proof 'the four great elements (earth, water, fire and air) are impermanent, because of being apprehended by the senses, like the five objects (of the senses)', the reason is inconclusive. That is, the reason 'being apprehended by the senses' is not limited to those things that are impermanent. This is because the sense mentioned in the reason is not limited to the five physical senses but also includes the mental sense. The author of the *Upāyahṛdaya* argues that the mental sense can apprehend things that are not impermanent. For instance, the hair of a tortoise and the smell of salt are apprehended by the mind (mental sense), but these are not impermanent since they do not even exist. The inconclusive reason is an obvious fault, but the two examples of things that are apprehended by the mental sense are somewhat unusual. The author of the *Upāyahṛdaya* must understand the reason 'being apprehended by the senses' to mean 'being an object of the senses', and the imagined hair of a tortoise and the smell of salt must qualify as legitimate objects of the mental sense. Caraka describes the same term (*sa-vyabhicāra*) as scepticism, the third epistemic term which is associated with the example, the third member of the proof.[2]

### 8. Contradictory (*viruddha*)

A contradictory reason is one that provides grounds that are opposite to the property to be proven. There are two types of contradictory reason. The first involves a contradictory example (*dṛṣṭānta-viruddha*), i.e. where the instance of the reason used as the example is contrary to the property in the proposition. For instance, in the proof, 'the self is permanent, because of being formless, like a bull', the example, a bull, is not permanent (the property in the proposition). The example is presented in a proof as a representative instance of the grounds that the reason provides to eliminate doubt about the proposition. If the example is faulty then the reason is considered to be a faulty reason. The second type of contradictory

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[1] Term 36 in *Caraka Saṃhitā* (3.8.57), trans. Sharma 1981-94, **1**, 367.

[2] Term 24 in *Caraka Saṃhitā* (3.8.45), trans. Sharma 1981-94, **1**, 364.

reason is one involving contradictory reasoning (*yukti-viruddha*). For instance, claiming that the actions of government, tending animals, hunting etc. are those of a priest, or learning, meditation and the like are those of a warrior. These activities are the very opposite of the customary activities of priests and warriors, respectively. This term is also discussed in the *Upāyahṛdaya* as one of the points of defeat (number 20 below) and as one of the refutations (number 13 below). Caraka describes this same term, contradictory speech (*viruddha*), as a statement inconsistent with an example or an established conclusion of a proof, or incompatible with the basic tenets of one's own system.[1] He also lists this term as a point of defeat.[2]

All eight terms used here in the *Upāyahṛdaya* as names of fallacious reasons are also found in the *Caraka Saṃhitā*, although Caraka describes only three of these (numbers 3, 5 and 6) as fallacious reasons (*hetvābhāsa*) or what he calls fallacies (*ahetu*). The remaining five terms are not described by Caraka as fallacious reasons. Caraka describes numbers 1 and 2 as the two types of equivocation. Number 4, mis-timed reason (*kālātīta*), appears in the *Caraka Saṃhitā* as delayed statement (*atītakāla*). Number 7, inconclusive reason, is described by Caraka as scepticism or uncertainty, and number 8, contradictory reason, is understood as contradiction and listed twice in the *Caraka Saṃhitā*; first as a type of defective speech and second as a point of defeat. The *Upāyahṛdaya* does not include this term (*viruddha*) in its list of defective types of speech (see above).

**Adoption of a fallacious reason (8)**

The last of the eight terms in chapter one is the adoption of a fallacious reason (*duṣṭa-vākyānusaraṇa*). This fault is committed when any of the eight types of fallacious reasons is used in a proof. Caraka does not discuss this term.

## 5.3 Points of defeat

Chapter two of the *Upāyahṛdaya* describes a number of points of defeat (*nigraha-sthāna*). This list appears to be indicative of the types of errors that are considered to be grounds for defeat rather than an exhaustive enumeration of every situation that would be a reason to forfeit a debate. Caraka lists 15 points of defeat,[3] seven of which appear as points of

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[1] Term 33 in *Caraka Saṃhitā* (3.8.54), trans. Sharma 1981-94, **1**, 365-366.

[2] Term 44 in *Caraka Saṃhitā* (3.8.65), trans. Sharma 1981-94, **1**, 368-369.

[3] Term 44 in *Caraka Saṃhitā* (3.8.65), trans. Sharma 1981-94, **1**, 368-369.

defeat in the *Upāyahṛdaya*.[1] Five of these are named with the same terms and two are simply described in the same way. Some other points are similar in both works although it is unclear whether or not they are the very same point. If the points that are merely similar are included then over half of Caraka's points of defeat are included in the *Upāyahṛdaya*.

Approximately 20 points of defeat are discussed in the *Upāyahṛdaya*, although in one section a list ends with "and so forth" which indicates that the number of points is not fixed. Various claims are made in modern publications regarding the number of points of defeat in the *Upāyahṛdaya*.[2] The list of points is not organised into groups in the *Upāyahṛdaya*, but four groups of points are suggested by their order in the list. These are: errors in debate, errors in questions, errors in speech, and errors related to the proposition.

### Errors in debate (1-9)

The first nine points of defeat are related to errors in debate.

1. Faulty example. This occurs when the example (*dṛṣṭānta*) in a proof is unacceptable. For instance, in the proof, 'sound is permanent, because of being formless, like ether', the example (ether) is unacceptable. In this proof, one property of ether (permanence) is attributed to the subject (sound) on the basis that ether and sound share the property in the reason (formlessness). This is unacceptable, just as in the proof 'sound is tangible, because of being produced, like a pot', it is unacceptable to attribute one property of a pot (tangibility) to the subject (sound) on the basis that a pot and sound share the property in the reason (being produced). Here the example (a pot) is faulty because a pot is a form whereas sound is formless and thus the tangibility of one cannot be attributed to the other. Similarly, in the former proof the example (ether) is faulty because ether is not produced whereas sound is produced and thus the permanence of one cannot be attributed to the other. When an unacceptable example is used in a proof then this fault constitutes a point of defeat and the debate is forfeited.

In the proof like 'sound is impermanent, because of being produced, like a pot', the example (a pot) is not at fault even though it is a form whereas sound is formless. That is,

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[1] Points of defeat 1, 3, 8, 9, 11, 12 and 13 in the *Caraka Saṃhitā* appear in the *Upāyahṛdaya* as 6, 3, 13, 14, 15, 17 and 20, respectively.

[2] See Vidyābhūṣaṇa 1920, 260; Warder 1971, 134; Solomon 1976-78, **1**, 246; and Kajiyama 1991, 109.

even though sound is audible and a pot is not, a pot is still a suitable example in a proof that establishes the impermanence of sound, since both a pot and sound are products.

2. Counter statement (*vākya-vaiparītya*). This occurs when one party attempts to establish a proposition using a reason and an example that count against the position in question rather than supporting it.

There are seven more points of defeat listed without descriptions.

3. Not questioning what should be questioned.

4. Inability to answer a question that should be answered.

5. Not understanding a statement even though it has been explained three times.

6. Making a statement that cannot be understood by others even though it has been explained three times.

7. Not understanding the point at issue and describing it incorrectly.

8. Wrongly accusing an opponent of a fault.

9. Not understanding what is understood by everyone else.

Numbers 3 and 6 here are both listed in the *Caraka Saṃhitā* as points of defeat (i.e. as numbers 3 and 1, respectively).

## Errors in questions (10-11)

The next two points of defeat concern errors in asking and answering questions. There are three types of questions, those related (or equivalent) to the statement (*vacana-sama*, or *vākya-sama*), those related to the meaning (*artha-sama*) and those related to the reason (*hetu-sama*).

10. Asking questions that are not related to any of these three types of questions.

11. Giving inadequate answers to any of these three types of questions.

## Errors in speech (12-17)

The next seven points of defeat are related to defective speech. These points appear in the *Upāyhṛdaya* without descriptions.

12. Speaking so quickly that others cannot understand.

13. Incompleteness (*nyūna*).

14. Redundancy (*adhika*).

15. Meaningless speech (*nirarthaka*).

16. Mis-timed proof (*aprāpta-kāla*).

17. Repetition (*punarukta*), and so forth are points of defeat.

Numbers 13-15 appear in Caraka's list of defective speech.[1] Caraka also lists these three and number 17 as points of defeat. This list appears to be indicative of such faults rather than an exhaustive list since it ends with "and so forth".

### Errors related to the proposition (18-20)

The next two points of defeat are discussed together in the *Upāyhṛdaya*.

18. Contradicting the proposition (*pratijñā-virodha*), i.e. to use a reason that counts against the proposition rather than supporting it.

19. Renouncing the proposition (*pratijñā-sannyāsa*), i.e. to give up a position by accepting its opposite.

It is unclear whether the author of the *Upāyahṛdaya* means for these two points to be independent points of defeat or whether contradicting the proposition in fact counts as an instance of renouncing the proposition.

20. Contradiction (*viruddha*) is also a point of defeat. This term is discussed on two other occasions in the *Upāyhṛdaya*. It is discussed as one of the eight fallacious reasons (*hetvābhāsa*) and also as one of the twenty refutations (*duṣaṇa*). Caraka lists contradiction as a defect of speech and also as a point of defeat.

Chapter three of the *Upāyahṛdaya* discusses philosophical issues such as the Buddhist refutations of the existence of the self (*ātman*) and refutations of the non-existence of liberation (*nirvāṇa*).[2] This material is omitted here.

## 5.4    Refutations

### Background

Chapter four of the *Upāyahṛdaya* describes 20 refutations (*duṣaṇa*) of a faulty proof.[3] The author of the *Upāyahṛdaya* takes one particular proof and then describes 20 reasons why the proposition in this proof is not established. This discussion provides a good indication of the criteria required for a proof to be successful according to the author of the *Upāyahṛdaya*. The Sanskrit term used to name these 20 refutations is *duṣaṇa*. This term does not appear in the *Caraka Saṃhitā*, although Caraka describes another similar term, *uttara* (rejoinder), as a

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[1] Term 33 in *Caraka Saṃhitā* (3.8.54), trans. Sharma 1981-94, **1**, 365-366.

[2] Kajiyama 1991, 109.

[3] Cf. Vidyābhūṣaṇa 1920, 261, where only eight are listed.

statement that denies similarity when similarity has been asserted, or vice versa.[1] Caraka's example of a rejoinder is a statement supported by a counter-example that is used to refute another statement. Caraka's rejoinders (*uttara*) appear to be the same as the refutations (*dusana*) described in the *Upāyahṛdaya*. Caraka does not discuss any types of rejoinder, but two of Caraka's terms appear in the list of 20 refutations found in the *Upāyahṛdaya*. These are contradiction (*viruddha*) and equivalence in doubt (*saṃśaya-sama*), both of which Caraka describes as faulty reasons.

The Sanskrit word "*dusana*" (refutation) is what Tucci uses to translate the Chinese word "*hsiang-yin*". Kajiyama says: "the Chinese word 'hsiang-yin' is most likely to correspond to the Sanskrit prasaṅga or prasaṅga-jāti."[2] The word "*prasaṅga*" is often translated as "consequence" and is used to refer to an unacceptable corollary of an opponent's position. The word "*jāti*" is usually translated as "futile rejoinder". The *Nyāya Sūtra* (Logic Aphorisms) uses futile rejoinder (*jāti*) to name a type of refutation that the author of the *Nyāya Sūtra* considers to be an unsuccessful attempt to refute a faultless proof. Almost half of the twenty refutations listed in the *Upāyahṛdaya* are included in the list of futile rejoinders in the *Nyāya Sūtra*. This suggests that refutation (*dusana*) in the *Upāyahṛdaya* has been simply renamed futile rejoinder (*jāti*) in the *Nyāya Sūtra*.

There is an important difference between the refutations in the *Upāyahṛdaya* and the futile rejoinders in the *Nyāya Sūtra*. The author of the *Upāyahṛdaya* understands all the refutations in its list as successful refutations of a faulty proof, whereas the author of the *Nyāya Sūtra* understands all the futile rejoinders in its list as unsuccessful refutations of faultless proofs. However, some modern commentators appear to have taken the connotation of a futile rejoinder (*jāti*) as it is understood in the *Nyāya Sūtra* and applied it to the refutations (*dusana*) in the *Upāyahṛdaya*, and then attempted to describe the refutations in the *Upāyahṛdaya* as unsuccessful refutations, unsuccessful that is not just in their own opinion but unsuccessful in the opinion of the author of the *Upāyahṛdaya*.[3] This is not to say that these refutations may not be criticised or described as unsuccessful. However, what is completely unacceptable is to describe these refutations as unsuccessful and present this description as the way in which the author of the *Upāyahṛdaya* understands such refutations.

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[1] Term 15 in *Caraka Saṃhitā* (3.8.36), trans. Sharma 1981-94, **1**, 361.

[2] Kajiyama 1991, 108 note 7; cf. Katsura 2000b, 225-226.

[3] Kajiyama 1991, 108-109.

Tucci[1] and Vidyābhūṣaṇa[2] list these refutations without explanation, while Solomon[3] and Matilal[4] each describe only those refutations that are unique to the *Upāyahṛdaya*, i.e. they leave aside those refutations whose names appear in both the *Upāyahṛdaya* and the *Nyāya Sūtra*. Kajiyama also discusses a selection of these refutations in an attempt to prove that the author of the *Upāyahṛdaya* is Nāgārjuna.[5] Here all 20 refutations are described.

A proof is presented at the beginning of the fourth chapter of the *Upāyahṛdaya* as the main target for these twenty refutations. This proof is:

| | |
|---|---|
| (1) The self (*ātman*) is permanent | Proposition |
| (2) Because of being imperceptible by the senses | Reason |
| (3) Like ether (*ākāśa*) | Example |
| (4) All that is imperceptible is permanent | Application |
| (5) Therefore, permanent (applies to the self) | Conclusion |

This proof has five parts although only the first three parts are required to explain the following refutations. These three parts contain the four elements in a proof, the subject, property, reason and the example or instance. The self or *ātman* is sometimes translated as soul. Permanent is also understood as eternal. In order for the self to be permanent it must exist and a denial of its existence is also a denial of its being permanent. An object that is imperceptible by the senses cannot be seen, heard, smelt, tasted or touched. Imperceptible is sometimes translated as insensible. Ether or *ākāśa* is sometimes translated as space or sky.

The order in which these twenty refutations appear in the *Upāyahṛdaya* suggests a grouping into three categories: refutations concerning the example (1-3), the reason (4-12), and the subject (13-20).

**Refutations based on the example (1-3)**

The view that the author of the *Upāyahṛdaya* argues against in the first three refutations is that the proposition in the proof above is established on the basis that the example (ether) and the subject (the self) share the property specified in the reason (being imperceptible by the senses). That is, some claim that since the example and subject share the property specified in the reason, they must also share other properties. In particular, they must share the property

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[1] Tucci 1929b, xxi-xxii.

[2] Vidyābhūṣaṇa 1920, 261.

[3] Solomon 1976-78, **1**, 185-189.

[4] Matilal 1998, 61-80.

[5] Kajiyama 1991, 110-113, and comparative list p. 117.

specified in the proposition (being permanent) which the example is known to possess. Thus, the subject must have this property, and in this way the proposition (the self is permanent) is successfully established.

The first two refutations argue that the example sharing the property specified in the reason is not a reliable basis upon which to conclude that the subject has this same property. These refutations are called:

1. Equivalence in attribution (*utkarṣa-sama*)

2. Equivalence in exclusion (*apakarṣa-sama*)

The first refutation argues that if one property of the example can be attributed to the subject then so can another, and the second refutation argues the converse of this. That is, if one property that the example lacks can be excluded from the subject then so can another.

The first refutation argues that if it is acceptable to attribute one property of the example to the subject then it is equally acceptable to attribute another property of example to the subject. For instance, in the proof, 'the self is permanent, because of being imperceptible by the senses, like ether', the property of permanence that the example possesses is attributed to the subject in order to establish the proposition. But if this is acceptable, then another property of the example, the property of being unconscious for instance, can also be attributed to the subject. Thus the proposition in the proof, 'the self is unconscious, because of being imperceptible by the senses, like ether', could be established in the same way. If it is claimed that the property of being unconscious cannot be attributed to the self, then equally the property of permanence cannot be attributed to the self, and thus the original proposition (the self is permanent) is not established.

The second refutation simply argues the converse of the first. That is, if it is acceptable to exclude from the subject one property that the example lacks then it is equally acceptable to exclude from the subject another property that the example lacks. For instance, in the proof, 'the self is permanent, because of being imperceptible by the senses, like ether', the property of impermanence that the example lacks is excluded from the subject in order to establish the proposition. But if this is acceptable, then another property that the example lacks, the property of being conscious for instance, can also be excluded from the subject. Thus the proposition in the proof, 'the self is unconscious, because of being imperceptible by the senses, like ether', could be established in the same way. If it is claimed that the property of

being conscious cannot be excluded from the self, then equally the property of being impermanent cannot be excluded from the self, and thus the original proposition (the self is permanent) is not established.

The point made in these two refutations is that simply knowing that the example and the subject share the property specified in the reason is not a reliable basis upon which to conclude that the example and subject also share the property specified in the proposition. If it is argued that this is a reliable basis upon which to establish the proposition then unacceptable propositions could be (wrongly) established in the same way.

### 3. Equivalence in difference and non-difference (*bhedābheda-sama*)

The third refutation builds on the first two refutations by arguing that if the example's having a property is the basis upon which to conclude that the subject also has this property, then the example itself would be disqualified from being an acceptable example. That is, the example in a proof must be different from the subject in order for the person who doubts the proposition to know that the example has the property in the proposition while still doubting whether the subject has this same property. Also, the example must be similar to the subject because the person who doubts the proposition must know that both the example and the subject have the property specified in the reason. Thus, an example in a proof that is either identical to the subject or totally unlike the subject is not an acceptable example.

The third refutation argues that the proposition in the proof, 'the self is permanent, because of being imperceptible by the senses, like ether', is not established because ether is not an acceptable example. Ether is unacceptable because it would be either identical to, or totally distinct from, the self. That is, if the example's having a property is a reliable basis upon which to conclude that the subject has the same property then the subject must have all the properties that the example has. Further, if the example's lacking a property is a reliable basis upon which to conclude that the subject does not have this same property then the example must have all the properties that the subject has. Hence, the example and subject would have exactly the same properties and would be identical. Alternatively, if the example is not identical to the subject then the example must have some properties that the subject does not have. But then there would be no way of knowing whether or not the property in the proposition is one of these properties that the example has but the subject does not have. If this reasoning is extended to all the example's properties then there would be no properties that the example is known to share with the subject. Thus the example in this proof is either

identical to or totally distinct from the subject. In either case the example would be disqualified and the proposition (the self is permanent) would not be established.

This third refutation raises an objection similar to that raised in the first two refutations. That is, the fact that the example shares a property with the subject is not a reliable basis upon which to establish the proposition. In contrast to the first two refutations, this third refutation argues that if this is the way that propositions are established then it would not be possible to establish propositions even in successful proofs. These three refutations criticise those who accept that the proposition above (the self is permanent) is established through the similarity between the example and the subject, although these three refutations are not limited just to this particular proof. They would apply to any proof. The following refutations, however, apply specifically to the proof above. That is, they argue that this particular proof fails to meet the logical requirements of a successful proof.

## Refutations based on the reason (4-12)

The next six refutations argue against the view that the reason in the proof above establishes the proposition. This view holds that the reason (being imperceptible by the senses) establishes the proposition (the self is permanent) because the reason establishes the presence of this property (being permanent) in the example (ether) and, since the subject also has the property specified in the reason, the reason establishes the presence of this same property (permanence) in the subject. It is claimed that in this way the proposition is successfully established.

The fourth and fifth refutations argue that the reason in the proof above is not able to establish the proposition because it is inconclusive. These two refutations are called:

4. Refutation with a brief answer to a detailed question (*praśnabāhulyam-uttarālpatā*)

5. Refutation with a detailed answer to a brief question (*praśnālpatā-uttarabāhulyam*)

The fourth refutation merely points out that the reason in the proof, 'the self is permanent, because of being imperceptible by the senses, like ether', is inconclusive and thus it fails to establish the proposition. The fifth refutation makes the same point but it provides the details to support its claim that the reason is inconclusive. According to the author of the *Upāyahṛdaya*, there are two kinds of things not perceptible by the senses. Firstly (individual) atoms are not perceptible by the senses because of their very small size, and atoms are impermanent. The second kind is like ether which is permanent. Since some things that are

not perceptible by the senses are permanent and others impermanent, the fact that the self is not perceptible by the senses is not conclusive evidence that the self is permanent and thus the proposition in this proof (the self is permanent) is not established. These two refutations show that one requirement for the reason to successfully establish the proposition is that all things that have the property in the reason must also have the property specified in the proposition.

The next two refutations argue firstly that although the reason does apply to both the example and the subject, this is not sufficient to establish the proposition. Secondly, if it is claimed that this is sufficient then unacceptable propositions could be (wrongly) established. These two refutations are called:

6. Equivalent cause (*hetu-sama*)

7. Equivalent effect (*kārya-sama*)

The sixth refutation argues that the reason in the proof, 'the self is permanent, because of being imperceptible by the senses, like ether', does not demonstrate the similarity between ether and the self and thus it does not establish the proposition. This is because the reason in a successful proof must demonstrate that both the example and the subject are similar in terms of having the property specified in the proposition. The mere fact that the reason applies to both the example and the subject is not sufficient to establish this. The reason in a successful proof must apply only to those things that have the property specified in the proposition, i.e. being imperceptible by the senses must apply to only permanent things. Since the reason in this proof applies to things permanent (like ether) as well as to things impermanent (like atoms) it is not able to establish the proposition (the self is permanent) in this proposition.

The seventh refutation argues that if it is claimed that the reason in this proof does establish the proposition then unacceptable propositions could be established in the same way. For instance, in the proof, 'the self and ether are impermanent, because of being composed of the five great elements, like a pot', the reason applies to the example (a pot) and to the subject (the self and ether). Further, a pot is impermanent and thus the self and ether must also be impermanent. Since the proposition in this proof is not established even though the reason does apply to both the example and the subject then similarly, the proposition in the proof, 'the self is permanent, because of being imperceptible by the senses, like ether', is not established even though the reason applies to both the example and the subject in this proof.

These two refutations show that not only must both the subject and example have the property specified in the reason, but also the reason must demonstrate that both the example and the subject are similar in terms of having the property specified in the proposition.

The next two refutations are called:

8. Equivalence in pervasion (*vyāpti-sama*)
9. Equivalence in non-pervasion (*avyāpti-sama*)

These two refutations argue against the claim that not only does the reason establish the proposition in the proof, 'the self is permanent, because of being imperceptible by the senses, like ether', but the reason's synonym, i.e. having an unlimited extension (in space), also establishes the proposition in this proof. That is, since ether is imperceptible by the senses it is permanent, and the self is like ether in that they both have an unlimited extension. Thus the self is permanent.

These two refutations argue that being imperceptible by the senses is not synonymous with having an unlimited extension. The eighth refutation argues that all things (collectively) extend (throughout the world) without limit, but all things are not imperceptible by the senses. Thus the fact that the self has an unlimited extension is not conclusive evidence that the self is permanent. The ninth refutation argues the converse. That is, (individual) atoms are imperceptible by the senses but atoms do not have an unlimited extension, since they (each) have no extension at all. Further, atoms are impermanent and thus the fact that the self is imperceptible by the senses is not conclusive evidence that the self is permanent. Thus neither the reason (being imperceptible by the senses) nor its synonym, having unlimited extension, is able to establish the proposition that the self is permanent. These two refutations show that an inconclusive reason is not made conclusive by adding other properties that qualify the reason.

The next three refutations argue that the reason in the proof above cannot establish its proposition because if the proposition in this proof is true then it would be impossible for any reason to establish a proposition. That is, the author of the *Upāyahṛdaya* argues that if the reason successfully establishes the proposition in the proof, 'the self is permanent, because of being imperceptible by the senses, like ether', then the opponent's ontological views would be correct. But if the opponent's ontological views are correct then the process of establishing a proposition would be impossible. Since the process of establishing a proposition is possible, the opponent's ontological views must be incorrect. If the opponent's ontological views are

incorrect then the view that a self exists is also incorrect. Because it is impossible to establish an incorrect proposition, the proposition that the self is permanent can never be established.

These three refutations differ from the other refutations in that they do not describe specific failings in the criteria required for a proof to be successful, rather they describe how the proof would fail if the proposition were correct. That is, those who accept the existence of the self do so because they accept the objective reality of not just persons, but of all things. This includes the components of a proof. Thus they claim that the proposition, reason and so forth all have an ontological status that the author of the *Upāyahṛdaya* argues would make it impossible for a reason to establish a proposition. This is the topic of the next three refutations. The first refutation is called:

10. Equivalence in time (*kāla-sama*)

The tenth refutation argues that an objectively real reason does not establish the proposition in the proof, 'the self is permanent, because of being imperceptible by the senses, like ether', because there is no time at which such a reason could possibly establish this proposition. The opponent's ontological views are that the reason which establishes, the activity of establishing and the proposition which is established are all objectively real objects. But an objectively real reason would have to exist either before, after, or at the same time as the proposition is established. However, none of these three options is possible and thus an objectively real reason could not establish the proposition.

The first option is not possible because if the reason exists before the proposition is established then at the time of establishment there would no longer be any reason in existence to establish the proposition. The second option is not possible because if the reason exists after the proposition is established then at the time of establishment there would not yet be any reason in existence to establish the proposition. The third and final option is not possible because if the reason exists at the very same time as the established proposition exists then, since reason and establish proposition exist simultaneously, the reason could not be the cause of the establishment, just as one cow's horn cannot be the cause of the other horn.

The next two refutations argue that if the reason and the established proposition had the ontological status claimed by the opponent then the very nature of these two entities would make it impossible for one to be the cause of the other. The two refutations are called:

11. Equivalence in non-convergence (*aprāpti-sama*)

12. Equivalence in convergence (*prāpti-sama*)

These two refutations argue that an objectively real reason could not establish the proposition in the proof, 'the self is permanent, because of being imperceptible by the senses, like ether', because such a reason would have to cause the proposition to be established either by connecting or by not connecting with the established proposition. However, it would be impossible for such a reason to establish the proposition in either situation.

The eleventh refutation argues that if the reason does not connect with the established proposition then the reason could not establish the proposition, just as a fire cannot burn an object, or a sword cut an object, without connecting with that object. The twelfth refutation argues that if the reason does connect with the established proposition then the reason and established proposition would coalesce to form one entity and this would make it impossible for one to act upon the other. Thus, an objectively real reason could not establish the proposition whether it did or did not connect with the established proposition.

Since on the one hand a reason is something that establishes its proposition, and on the other hand an objectively real reason could not establish its proposition, the reason in this proof cannot have any objective reality. Similarly, the activity of establishment and the proposition which is established also lack objective reality. Further, this reasoning can be extended to prove that all things lack objective reality. In particular, the objectively real entity called the self could not exist in any way, permanent or otherwise. Thus, the proposition in this proof (the self is permanent) is incorrect, and since incorrect propositions cannot be established, the reason in this proof cannot establish the proposition.

These three refutations show firstly that a reason cannot establish a false proposition and secondly, a reason could not establish a proposition like 'reasons cannot establish their propositions' since a consequence of the proposition being true is that the very reason that establishes this particular proposition would then lack the ability to establish a proposition.

## Refutations based on the subject (13-20)

The following eight refutations focus on the subject in a faulty proof. The first two refutations are called:

13. Contradiction (*viruddha*)
14. Non-contradiction (*aviruddha*)

The thirteenth refutation argues that there is a predominance of evidence to support the self being impermanent and it is therefore a contradiction to claim that the self is permanent. That is, it is a contradiction to claim on the one hand that (most) everything that exists is

impermanent and then on the other hand claim that the self is not like most everything else and is therefore permanent. For instance, it is a contradiction to call a blanket that is mostly burnt an "unburnt blanket". Thus, the self should be impermanent like (most) everything else.

The term contradiction (*viruddha*) is described by Caraka as one of the five faults listed under defective speech.[1] Caraka also lists this term under his points of defeat.[2] The author of the *Upāyahṛdaya* does not include this term amongst the faults listed under defective speech, but does discuss the term in fallacious reasons and also lists it as one of the points of defeat.

The fourteenth refutation argues that the proposition in the proof, 'the self is permanent, because of being imperceptible by the senses, like ether', is not established because the subject is not like the example. That is, if the self were like ether then they should have common properties, not contradictory properties. Thus if ether is not conscious then the self should not be conscious, and if the self is conscious then ether should also experience pleasure and pain. Since the subject and example possess contradictory properties, the proposition in this proof is not established.

These two refutations show firstly that a claim regarding the subject cannot contradict the predominance of evidence and secondly, the subject must be like the example and thus the subject and example cannot possess contradictory properties.

The next two refutations are called:

15. Equivalence in doubt (*saṃśaya-sama*)

16. Equivalence in non-doubt (*asaṃśaya-sama*)

The fifteenth refutation argues that in the proof, 'the self is permanent, because of being imperceptible by the senses, like ether', the proposition is not established because the doubt about whether or not the subject has the property in the proposition is not completely eliminated by the reason. That is, the reason (being imperceptible by the senses) is like the property of existence in that it applies to things that are permanent (like ether) and it also applies to things that are impermanent (like atoms). Thus, the doubt concerning the subject, i.e. whether it is permanent or impermanent, is not completely removed by this reason. Consequently, the proposition is not established.

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[1] Term 33 in *Caraka Saṃhitā* (3.8.54), trans. Sharma 1981-94, **1**, 365-366.

[2] Term 44 in *Caraka Saṃhitā* (3.8.65), trans. Sharma 1981-94, **1**, 368-369.

This same term is described by Caraka as the second of his three fallacious reasons, i.e. where the reason is similar to the grounds for doubt.[1] The *Upāyahṛdaya* also includes this term as the third of its eight fallacious reasons (see above).

The sixteenth refutation argues that the proposition in the proof, 'the self is permanent, because of being imperceptible by the senses, like ether', is not established because the required doubt about whether or not the subject has the property in question would be absent in this proof. That is, in order for the proposition to be established, the person who doubts the proposition must know that the subject has the property specified in the reason while still doubting whether or not the subject has the property in the proposition. But for this person to know that the self is not perceptible by the senses, they must apprehend the obstruction that prevents the self from being perceived by the senses. Since no such obstruction is ever apprehended, there would be no evidence that the self even exists. If no self was thought to exist then the question as to whether or not the self is permanent would not be doubted. Since there would be no doubt concerning the subject in this proof, the proposition would not require a proof.

These two refutations show firstly that the proposition in a proof must be in doubt and secondly, in order for this proposition to be established, all doubt concerning the subject, i.e. whether or not it has the property in question, must be completely removed by the reason.

The next refutation is called:

17 Equivalent counter-example (*prati-dṛṣṭānta-sama*)

This refutation argues that the proposition in the proof, 'the self is permanent, because of being imperceptible by the senses, like ether', is not established because if it were established then unacceptable propositions could be (wrongly) established the same way. For instance, the proposition in the proof, 'tree roots and underground water are permanent, because of being imperceptible by the senses, like ether', would also be established. Since tree roots and underground water are not permanent, the proposition in the latter proof is not established. Thus, the proposition in the former proof is also not established.

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[1] Term 36 in *Caraka Saṃhitā* (3.8.57), trans. Sharma 1981-94, 1, 367.

The next two refutations argue against invoking scriptural authority in order to establish the proposition that the self is permanent. These two refutations are called:

18. Equivalent scriptures (*śruti-sama*)

19. Different scriptures (*śruti-bhinna*)

The eighteenth refutation argues against the claim that the self must be permanent because the opponent's scriptures speak of a self that is imperceptible by the senses. Since there are Buddhist scriptures that declare there is no self, and Jaina scriptures that say the self is impermanent, (different) scriptures make incompatible claims. Thus, scriptural authority is inconclusive and cannot establish that the self is permanent.

The nineteenth refutation argues against the claim that only the opponent's scripture is authoritative and this one scriptures testifies to the fact that the self is permanent. That is, there is as much reason to accept one scripture as there is to accept another, and where one scripture says the self is permanent another says the self is impermanent. Thus, scriptural authority is inconclusive and cannot establish that the self is permanent.

The final refutation is called:

20. Equivalence in non-generation (*anutpatti-sama*)

This refutation argues against the claim that the self is proven to be permanent by its very existence. This position is untenable just as is the real production of a tree. That is, a tree for instance is not produced after it exists since at that time the tree needs no production. Also, a tree is not produced before it exists, since at that time there is no tree (in the seed) which could be the object of any production. Without an object for production there can be no real production. Thus a tree is not really produced either after it comes into existence or before. Similarly, the reason (being imperceptible by the senses) cannot establish the self whether the self exists or not. That is, if the self does not exist then being imperceptible by the senses cannot cause this non-existent self to come into existent. Alternatively, if the self does exist then being imperceptible by the senses cannot prove the self exists.

## 5.5    A common system of logic

The *Upāyahṛdaya* describes ten main terms, all but two of which (numbers 6 and 8) have counterparts in the *Caraka Saṃhitā*. The corresponding terms from the *Caraka Saṃhitā* are listed on the right with the term numbered according to its place in the list of 44 terms.

| Upāyahṛdaya | Caraka Saṃhitā |
|---|---|
| 1. instance (*udāharaṇa*) | 12. example (*dṛṣṭānta*) |
| 2. theory (*siddhānta*) | 16. theory (*siddhānta*) |
| 3. commendable speech (*vākya-praśaṃsā*) | 34. commendable speech (*vākya-praśaṃsā*) |
| 4. defective speech (*vākya-doṣa*) | 33. defective speech (*vākya-doṣa*) |
| 5. inference (*anumāna*) | 19. inference (*anumāna*) |
| 6. appropriate speech (*samayocita-vākya*) | |
| 7. fallacious reason (*hetvābhāsa*) | 36. fallacy (*ahetu*) |
| 8. adoption of fallacious reason (*duṣṭa-vākyānusaraṇa*) | |
| 9. points of defeat (*nigraha-sthāna*) | 44. points of defeat (*nigraha-sthāna*) |
| 10. refutation (*dūṣaṇa*) | 15. rejoinder (*uttara*) |

Three of the terms in the *Upāyahṛdaya* (numbers 1, 7 and 10) correspond to slightly different terms in the *Caraka Saṃhitā*, but their respective descriptions are the same or very similar. There are over 50 more terms described as the subdivisions of the ten main terms in the *Upāyahṛdaya*. About a third of these are also found in the *Caraka Saṃhitā*, often with very similar descriptions. The four means of valid cognition (*pramāṇa*) described in the *Caraka Saṃhitā* are also found in the *Upāyahṛdaya*.

Tucci lists these terms in the introduction to his Sanskrit reconstruction of the *Upāyahṛdaya*,[1] and correlates them with the terms described in the *Caraka Saṃhitā* and the *Nyāya Sūtra* (described in the next chapter). The similarity in terminology shows that the system of logic in the *Upāyahṛdaya* is the same as that found in the other two works. One significant difference between the *Upāyahṛdaya* and the *Caraka Saṃhitā* is that the *Upāyahṛdaya* discusses twenty refutations which are conspicuously absent in the *Caraka Saṃhitā*. These are much discussed in the *Nyāya Sūtra* and later works, and they would no doubt have been included in the *Caraka Saṃhitā* if Caraka had known about them. This point, as well as the degree of organisation in the logical ideas found in these three works, indicates that their chronological order is probably the *Caraka Saṃhitā* first, followed by the *Upāyahṛdaya* second, and then the *Nyāya Sūtra* last. The *Upāyahṛdaya* therefore represents an intermediary stage in the development of Indian logic linking the earlier and later stages of the same system. This system of logic is also found in two other works from this period. These are the *Vaiśeṣika Sūtra* and the *Nyāya Sūtra*, both discussed in the following chapter.

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[1] Tucci 1929b, xvi.

# Chapter six: Ancient Indian philosophy

## Introduction

This chapter examines logic as it is described in the *Vaiśeṣika Sūtra* (Category Aphorisms) and the *Nyāya Sūtra* (Logic Aphorisms). These two works share a common system of metaphysics and their respective schools of thought later merged into one. The *Vaiśeṣika Sūtra* contains only a small amount of material on logic, whereas the *Nyāya Sūtra* deals extensively with logic and debate. The *Nyāya Sūtra* describes many of the same technical terms that appeared in the *Caraka Saṃhitā* and it also replies to many of the refutations found in the *Upāyahṛdaya*. The five-membered proof is traditionally associated with the *Nyāya Sūtra*, although its origins actually lie in the ancient tradition of debate.

Ancient Indian logicians used a system of debate that involved ten steps. Examples of ten-step arguments are found in the *Kathāvatthu* which uses a five-step argument in support of some position and then a five-step argument against the same position. Bhadrabāhu and Vātsyāyana each describe a different set of ten steps that were used to form arguments. Randle argues that the five-membered proof is related to these systems of ten steps:

> A truer parallel is to be found in the ten-membered debate (miscalled 'syllogism') as stereotyped by the *Jaina* logician Bhadrabāhu, and probably in the ten-membered method which Vātsyāyana attributes to certain methodologists (naiyāyika).[1]

Vātsyāyana's ten steps appear in the *Caraka Saṃhitā* as the five-part proof and its associated five psychological states. The five-part proof that Gotama describes in the *Nyāya Sūtra* is the same as that found in the *Caraka Saṃhitā*. The development of the five-part proof from the earlier ten steps occurred completely within the Indian tradition of debate with no sign of any Greek influence. McEvilley rejects this explanation of the origin of the five-part proof. He argues that:

> It has repeatedly been suggested that "Gotama's" five-limbed syllogism was derived from the ten-limbed pattern of debate that was more rhetorical than systematically inferential. This model has been taken as supporting the evolution of the syllogism out of the earlier debate in a purely Indian context, not needing outside influence.

> One problem with this view is that from a philological standpoint the *Nyāya Sūtras* do not seem to preserve a developmental record of a coherent tradition. They do not show a development from a set of debating rules to a set of syllogistic rules so much as a conflation of textual records on these two subjects.[2]

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[1] Randle 1930, 14.

[2] McEvilley 2002, 515.

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The development from a set of debating rules to a set of syllogistic rules that McEvilley refers to here is not found by examining the *Nyāya Sūtra* alone. It appears when the logical terminology described in the *Nyāya Sūtra* is compared with similar material found in earlier Indian works. The analysis carried out in this chapter supports the evolution of the five-part proof out of an earlier system of debate in a purely Indian context, i.e. without the need to invoke outside influence.

First the description of inference in the *Vaiśeṣika Sūtra* is compared with its description in the *Upāyahṛdaya* and the *Caraka Saṃhitā*. Next the logical material in the *Nyāya Sūtra* is compared with similar material in the *Vaiśeṣika Sūtra*, the *Upāyahṛdaya* and the *Caraka Saṃhitā*. All the terms that have counterparts in earlier works are described in the order in which they occur in the *Nyāya Sūtra*. There are nearly 90 of these terms described in the *Nyāya Sūtra* and over half of these correspond to terms in earlier Indian works. This shows that the system of logic described in the *Nyāya Sūtra*, and the five-membered proof in particular, are not new to the *Nyāya Sūtra* but came from an earlier Indian tradition. This tradition has its origins in the ancient tradition of debate that pre-dates the arrival of Greeks in India. This undermines McEvilley's main argument that Greek influence is required in order to explain the advent of Indian logic in general and the five-membered proof in particular.

## 6.1    The *Vaiśeṣika Sūtra*

### Introduction

The *Vaiśeṣika Sūtra*[1] is attributed to Kaṇāda whose dates are unknown. The fact that material now found in the *Vaiśeṣika Sūtra* was known to Buddhists at the beginning of the current era suggests the work must have existed by about 100-150 AD.[2] The *Vaiśeṣika* system itself may date from an earlier time.[3] Bronkhorst notes that five versions of the *Vaiśeṣika Sūtra* have been preserved, all of which belong to a time well after the early centuries of the current era. The *sūtras* (aphorisms) in these versions vary, and their order appears to have been changed to facilitate different interpretations.[4]

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[1] Translated by Gough 1873; Sinha 1911; and Nozawa 1993 (Chapters 1 and 2 only). Summarised by Hattori in Potter ed. 1965-99, **2**, 212-220.

[2] Hattori in Potter ed. 1965-99, **2**, 211.

[3] Warder 1968, 330, places the *Vaiśeṣika Sūtra* before the *Caraka Saṃhitā* but after the *Kathāvatthu*.

[4] Bronkhorst 1996, 11.

Schuster argues that there may be strata of earlier and later material in the *Vaiśeṣika Sūtra*.[1] The work as it now exist is arranged in ten lessons (*adhyāya*) or chapters, each of which consists of two daily portions (*āhnika*) or lectures. Some editions do not divide the last three chapters into two portions. The numbering of the sūtras is not always consistent amongst the various editions.

The *Vaiśeṣika Sūtra* is a work on metaphysics rather than on logic. The main topic of the work is the six categories (*padārtha*) or things to which words refer. These are: substance (*dravya*), attribute or quality (*guṇa*), action (*karma*), universal (*sāmānya*), particularity (*viśeṣa*) and inherence (*samavāya*).[2] These six are also listed in the *Caraka Saṃhitā* in the same order (see above).[3] There are nine substances: earth (*pṛthivī*), water (*āpas*), fire (*tejas*), air (*vāyu*), ether (*ākāśa*), time (*kāla*), space or spatial direction (*diś*), self or soul (*ātman*), and mind or the internal organ (*manas*).[4] Substances are real things that possess attributes. There are 17 types of attribute such as colour, taste, etc.[5] Attributes exist only in substances and do not themselves possess attributes.

**Inference**

The *Vaiśeṣika Sūtra* does not discuss the five-membered proof,[6] nor does it describe a list of terms. The significance of this work lies in its description of inference. Kaṇāda mentions only two means of valid cognition, perception and inference.[7] Both the *Caraka Saṃhitā* and the *Upāyahṛdaya* accept four means of valid cognition; perception and inference, as well as verbal testimony and analogy.[8] Kaṇāda accepts the legitimacy of both verbal testimony and analogy but includes them in inference.[9] Kaṇāda describes perception as cognition that is brought about by the contact of the soul (*ātman*), the sense organ (*indriya*),

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[1] Schuster 1972, 366-367.

[2] *Vaiśeṣika Sūtra* (1.1.4), trans. Sinha 1911, 9. Cf. Aristotle's list of ten categories in Smith, Ross eds 1908-54, **1**, *Categoriae*, 1a25-26.

[3] Terms 2-7 in *Caraka Saṃhitā* (3.8.29), trans. Sharma 1981-94, **1**, 361.

[4] *Vaiśeṣika Sūtra* (1.1.5), trans. Sinha 1911, 17.

[5] *Vaiśeṣika Sūtra* (1.1.6), trans. Sinha 1911, 19; only 17 are listed in the *Vaiśeṣika Sūtra* itself, seven more are added in the commentaries.

[6] *Vaiśeṣika Sūtra* (9.2.2), trans. Sinha 1911, 307, mentions 'member' (*avayava*) of a proof without further elaboration.

[7] *Vaiśeṣika Sūtra* (10.1.3), trans. Gough 1873, 300.

[8] Note that Caraka also accepts reasoning (*yukti*) in place of analogy (*aupamya, upamāna*) as one of his four means of valid cognition.

[9] Verbal testimony is mentioned at 9.2.3 (trans. Sinha 1911, 310) and analogy at 9.2.5 (trans. Sinha 1911, 316).

the mind (*manas*) and the object (*artha*).[1] This definition of perception is the same as that found in the *Caraka Saṃhitā*.[2] Inference is described in the *Vaiśeṣika Sūtra* as cognition of an entity produced by perceiving a sign or mark (*liṅga*).[3] Kaṇāda explains that the term used here (*liṅga*) is no different from reason (*hetu*), description (*apadeśa*), proof (*pramāṇa*) and instrument (*karaṇa*).[4]

There are two types of inference described in the *Vaiśeṣika Sūtra*. First there is the inference of something that can be seen (*dṛṣṭa-liṅga*). For instance, the perception of horns, hump, tail with a hairy end, and a dewlap, causes the inference that the object in question is a cow, i.e. the inference of the cow universal.[5] The second type of inference is of something that cannot be seen (*a-dṛṣṭa-liṅga*). For instance, the perception of touch causes the inference that air (or wind) exists, i.e. the sensation of something tactile causes the inference that some substance is present.[6]

The second type of inference is distinguished from the first by the fact that it is an inference of an imperceptible entity that is known only generally, whereas the first is an inference of a perceptible entity which is known specifically. In the example, air cannot be directly perceived by the senses and the inference is not of a particular substance, but only of some substance (in general) that can account for the sensation of touch. Another term for the second type of inference is literally 'seeing from the general' (*sāmānyato-dṛṣṭa*).[7] Kaṇāda uses this term in his discussion on the inference of air,[8] and again in his discussion on the inference of the soul (or self).[9] Kaṇāda describes the soul as imperceptible, and the inference of the soul as an inference only of some substance (in general) that can account for the substratum in which the qualities of desire and so forth inhere.

This same term (*sāmānyato-dṛṣṭa*) is also used in the *Upāyahṛdaya* to name the last of its three types of inference. The example used in the *Upāyahṛdaya* is the inference that the

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[1] *Vaiśeṣika Sūtra* (3.1.18), trans. Sinha 1911, 121. See trans. in Bronkhorst 1994, 668; and Hattori 1966, 107.

[2] *Caraka Saṃhitā* (1.11.20), trans. Sharma 1981-94, **1**, 72.

[3] *Vaiśeṣika Sūtra* (9.2.1), trans. Sinha 1911, 304. See also Solomon 1976-78, **1**, 377; and Schuster 1972, 342.

[4] *Vaiśeṣika Sūtra* (9.1.4), trans. Sinha 1911, 314.

[5] *Vaiśeṣika Sūtra* (2.1.8), trans. Sinha 1911, 61.

[6] *Vaiśeṣika Sūtra* (2.1.9), trans. Sinha 1911, 62.

[7] See Matilal 1971, 101-102; and Nozawa 1991.

[8] *Vaiśeṣika Sūtra* (2.1.16), trans. Sinha 1911, 69.

[9] *Vaiśeṣika Sūtra* (3.2.7), trans. Sinha 1911, 132.

sun is moving although this movement is not directly perceived by the senses (see above). The other two types of inference found in the *Upāyahṛdaya* are; as before (*pūrvavat*), an inference from previous observation, and as the remainder (*śeṣavat*), an inference from a known instance to the remainder. The last of these terms, as the remainder, is alluded to by Kaṇāda in his discussion on the inference of ether.[1] Kaṇāda's argument is that since sound (*śabda*) is an attribute it must inhere is some substance. Sound is not an attribute of any of the other eight substances, therefore it must be an attribute of ether, the only remaining substance. That is, the existence of ether is inferred from elimination (*pariśeṣāt*), i.e. the exclusion of other alternatives, leaving ether as the only remaining substance.

## Relationship

Inference in the *Vaiśeṣika Sūtra* is based on real relations between objects. That is, in order for a reason (or mark) to be reliable it must be something that is neither identical with, nor completely unrelated to, what is inferred.[2] Thus, the reason and what is inferred must be two different things that are related in some way. This relationship is described as something that is universally known.[3] The *Vaiśeṣika Sūtra* lists four types of relation in chapter three:[4]

> 1. Conjunct (*saṃyogi*)
>
> 2. Inherent (*samavāyi*)
>
> 3. Co-inherent (*ekārtha-samavāyi*)
>
> 4. Contradiction (*virodhi*)

A similar list appears in chapter nine:[5]

> 1. Effect (*kārya*) or cause (*kāraṇa*)
>
> 2. Conjunct (*saṃyogi*)
>
> 3. Contradiction (*virodhi*)
>
> 4. Inherent (*samavāyi*)

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[1] *Vaiśeṣika Sūtra* (2.1.27), trans. Sinha 1911, 76.

[2] *Vaiśeṣika Sūtra* (3.1.7-8), trans. Sinha 1911, 107-108. Cf. trans. in Hattori 1966, 97.

[3] *Vaiśeṣika Sūtra* (3.1.14), trans. Sinha 1911, 111. See trans. in Gangopadhyaya 1991, 208.

[4] *Vaiśeṣika Sūtra* (3.1.9), trans. Sinha 1911, 109. See trans. Gough 1873, 82; Faddegon 1918, 296; Hattori in Potter ed. 1965-99, 2, 215; Hattori 1966, 97; and Schuster 1972, 387 note 13.

[5] *Vaiśeṣika Sūtra* (9.2.1/9.18), trans. Sinha 1911, 304. See trans. Gough 1873, 280; Faddegon 1918, 296; Randle 1930, 148-149; Hattori in Potter ed. 1965-99, 2, 219; and Schuster 1972, 386 note 5. See also Solomon 1976-78, 1, 370-371.

The only difference between these two lists, apart from their order, is that where the first list has co-inherent, the second has effect or cause. Gangopadhyaya treats these two as referring to different types of relation and so describes five types;[1] whereas Schuster treats them as the same, so making four types.[2] Examples of the four types are:

1. Conjunct, i.e. where one thing is related to another as its conjunct, e.g. as body is related to skin. Body and skin are neither the cause nor the effect of one another, but one is the constant conjunct of the other.

2. Inherent, i.e. where one thing is related to another as an essential property, e.g. as extension is related to ether. The nature of ether is to be extended and thus extension is not related to ether as its constant conjunct, but as something inherent in ether.

3. Co-inherent, i.e. where two things are related in some third thing, e.g. the colour of brown sugar and the taste of brown sugar. That is, since both colour and taste are inherent in brown sugar, each is related to the other through their co-inherence in brown sugar. The two things related in this way can be two effects or two causes.

4. Contradiction, i.e. where two things cannot be together for some reason. There are four types of contrary relationship described in the *Vaiśeṣika Sūtra*.[3] Each has an associated type of inference:

(i) Presence from absence, i.e. inferring the presence of something contrary to a cause from the absence of its effect, e.g. inferring the presence of the wind that drives away rain clouds from the absence of rain.

(ii) Absence from presence, i.e. inferring the absence of something contrary to a cause from the presence of its effect, e.g. inferring the absence of the wind that drives away rain clouds from the presence of rain.

(iii) Absence from absence, i.e. inferring the absence of one thing from the absence of another that constantly accompanies it, e.g. inferring the absence of fire from the absence of soot on a pot. Since soot and fire always go together, it would be a

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[1] Gangopadhyaya 1991, 208-209.

[2] Schuster 1972, 344 and 387 note 13.

[3] *Vaiśeṣika Sūtra* (3.1.11-13), trans. Sinha 1911, 110-111. Note that Gough 1873, 84-86; Sinha 1911, 110-111; Ui 1917, 157-158; and Gangodhyaya 1991, 209, each mention only three types (number three 'absence from absence' is omitted). Hattori 1966, 97-98; Schuster 1972, 344, 387 note 13, and 388 note 15; and Solomon 1976-78, **1**, 371 mention all four types.

contradiction for one to be present without the other, and thus the absence of one is inferred from the absence of the other.

(iv) Presence from presence, i.e. inferring the presence of one thing from the presence of another contrary thing, e.g. inferring the presence of a (hidden) mongoose from the presence of an agitated snake. Since these two animals are incompatible, the presence of one is inferred from the present state of the other.

## Incorrect reasons

The relationship between the reason and what is inferred is a requirement for a reason to be correct. If this relationship does not hold then the reason is incorrect and inference does not occur. The description of incorrect reasons (*anapadeśa*) in the *Vaiśeṣika Sūtra* is in *sūtras* 3.1.14-17 according to the translations by Gough[1] and Sinha,[2] and in *sūtras* 3.1.9-12 according to the translations by Hattori[3] and Schuster.[4] These *sūtras* are interpreted in two different ways. They are interpreted as meaning; (i) that there are only two types of incorrect reason, or (ii) that there are three types of incorrect reason. The relevant *sūtras* according to the first interpretation are (paraphrased):

> Correct reasons [*apadeśa*] are those where the required relationship [*prasiddha*] holds between the reason and what is inferred (3.1.14/9). Consequently, where this relation does not hold [*aprasiddha*] the reason is an incorrect reason [*anapadeśa*]. There are two types of incorrect reason: (i) non-existent or unreal [*asat*], and (ii) doubtful or dubious [*sandigdha*] (3.1.15/10). The examples of these two types are: (i) this is a horse because of having horns (3.1.16/11), and (ii) this is a cow because of having horns (3.1.17/12).

This first interpretation indicates that the difference between correct and incorrect reasons is determined by the relationship between the reason and what is to be inferred. Incorrect reasons are defined as those lacking this relationship. The first type of incorrect reason (having horns) is not related to being a horse, since no horses have horns. The second type of incorrect reason (having horns) is not related to being a cow, since animals other than cows also have horns. The difference between the two types of incorrect reason is that in the first the relationship is non-existent whereas in the second the relationship is doubtful. Neither type of reason results in inference.

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[1] Gough 1873, 86-101.

[2] Sinha 1911, 111-121.

[3] Hattori 1966, 98.

[4] Schuster 1972, 388 note 18, and commentary on 3.1.9-10 in note 19.

The second interpretation of these *sūtras* differs from the first in that it distinguishes three types of incorrect reason, the two mentioned above plus one more. The third type is taken from the beginning of *sūtra* 3.1.15/10. That is, '*aprasiddha*' is not interpreted as defining all incorrect reasons (*anapadeśa*), but as describing one particular type of incorrect reason. This type of incorrect reason is often named contradictory (*viruddha*), the other two being called unproven (*asiddha*) and doubtful (*sandigdha*). This second interpretation is the more common interpretation of these *sūtras* in spite of the fact that it is left with the problem of having only two examples. Faddegon rejects this second interpretation describing it as based on a wrong explanation of *sūtra* 3.1.15.[1] Keith, Randle and Solomon all describe Kaṇāda's system of incorrect reasons as consisting of only two types.[2]

**Conclusion**

The *Caraka Saṃhitā* classifies inference into three types based on time, i.e. from the perception of some evidence in the present to a conclusion about something in either the present, past or future, respectively. The *Upāyahṛdaya* also classifies inference into three, but it bases its classification on the way the evidence is related to the conclusion, i.e. whether the inference is from past to present, from part to whole, or from similar cases to one particular case. This method of classifying inference is similar to the classification of inference in the *Vaiśeṣika Sūtra*. It classifies inference into two and then makes an in-depth analysis of the relations between objects. The significance of relationship for Kaṇāda is that it provides the justification for inference. That is, inference occurs provided the reason is related to the conclusion in any of four ways. If this relationship fails to hold then the reason is incorrect and no inference occurs. The *Vaiśeṣika Sūtra* presents its discussion on inference within a system of metaphysics that advocates real relationships existing between real objects. This system of metaphysics is also found in the *Nyāya Sūtra*.

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[1] Faddegon, B. 1918, 303. Note his comment on 302: "With reference to sūtra 15 we may notice that it contains two parts: a definition of the term *anapadeśa* and a division of this *anapadeśa* into two kinds *asan* and *sandigdhaḥ*, sūtra 16 contains the example of the former kind and sūtra 17 of the latter."

[2] Keith 1921, 133; Randle 1930, 189-191; and Solomon 1976-78, **1**, 279-280.

## 6.2 The *Nyāya Sūtra*

### Introduction

The *Nyāya Sūtra* (Logic Aphorisms)[1] consists of short pithy statements on logic and philosophy. The work is attributed to Gautama (or Gotama), also known as Akṣapāda, whose dates are unknown.[2] Gautama and Akṣapāda are usually accepted as referring to the same person. Vidyābhūṣaṇa, however, does not accept this. He claims that Gautama was the author of an earlier work that was later redacted by Akṣapāda and called the *Nyāya Sūtra*, just as Ātreya was the author of the an earlier work later redacted by Caraka and called the *Caraka Saṃhitā*.[3] Vidyābhūṣaṇa's claim has not received any support from modern commentators.[4]

The *Nyāya Sūtra* is thought to have taken its present form around 200 AD.[5] This date is based on its references to Buddhist ideas which are thought to date from around that time. The work as it now exits is arranged in five lessons (*adhyāya*) or chapters, each consisting of two daily portions (*āhnika*) or lectures. The contents of the work can be arranged in six parts:

1. Chapter 1: describes 16 terms
2. Chapter 2: describes doubt (*saṃśaya*), term 3, and valid cognition (*pramāṇa*), term 1
3. Chapters 3 and 4 Part 1: mainly on the objects of valid cognition (*prameya*), term 2
4. Chapter 4 Part 2: discusses philosophical issues
5. Chapter 5 Part 1: describes the 24 kinds of futile rejoinder (*jāti*), term 15
6. Chapter 5 Part 2: describes the 22 points of defeat (*nigraha-sthāna*), term 16

The first chapter makes up one complete section on its own. It describes 16 terms related to logic and debate. Many of these terms are similar to those described in the *Caraka Saṃhitā*. The *Nyāya Sūtra* refers once to medical scriptures, but only as an example of trustworthy scriptures.[6] There is nothing to indicate that this reference is specifically to the *Caraka Saṃhitā* as is suggested by Vidyābhūṣaṇa.[7] Shekhawat also claims that the *Nyāya*

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[1] The *Nyāya Sūtra* is translated, along with Vātsyāyana's commentary the *Nyāya Bhāṣya,* in Jhā 1915-19; Chattopadhyaya, Gangopadhyaya 1967-68; and Gangopadhyaya 1982; and is summarised by Potter ed. 1965-99, **2**, 221-238. For a summary of the *Nyāya Bhāṣya* see Potter ed. 1965-99, **2**, 240-274.

[2] Śāstri 1905b, 177, claims Akṣapāda (Gautama) lived before the Buddha.

[3] Vidyābhūṣaṇa 1920, 49-50 and 498.

[4] Randle 1930, 12 note 1. Cf. Chakravartti 1910, 294.

[5] McEvilley 2002, 510 has: "perhaps the first century BC".

[6] *Nyāya Sūtra* (2.1.68), trans. Jhā 1915-19, **2**, 283-295.

[7] Vidyābhūṣaṇa 1920, 50.

*Sūtra* is indebted to the *Caraka Saṃhitā*. He describes the *Nyāya Sūtra* as "being a mere rearrangement of these fundamental concepts and principles worked out in the [Vimāna] Sthāna,"[1] i.e. the section containing the list of 44 terms in the *Caraka Saṃhitā*. Dasgupta suggests that both may be indebted to a third. He says: "It seems therefore in a high degree probable that both Caraka and the *Nyāya Sūtras* were indebted for their treatment of these terms of disputation to some other earlier work."[2]

Chapters 2-5 discuss issues related to these terms, but there is no discussion on terms 4-14, plus these chapters discuss topics not mentioned in the first chapter. Chapter 5 differs from chapters 2, 3 and 4 in that it simply describes examples of the last two terms, terms 15 and 16. Chapter 5 is therefore like a continuation of the first chapter. This has led some to argue that the first and last chapters form the nucleus of the original work to which chapters 2, 3 and 4 were later added.[3]

Chapter 5 is in two parts, the first of which describes 24 futile rejoinders (term 15). Almost half of these are also found in the list of refutations in the *Upāyahṛdaya*. The *Caraka Saṃhitā* does not provide a list of rejoinders. The second part of chapter 5 describes 22 points of defeat (term 16). The *Upāyahṛdaya* lists approximately 20 points of defeat,[4] 11 of which are included in the *Nyāya Sūtra* as points of defeat. The *Caraka Saṃhitā* lists 15 points of defeat,[5] six of which are included in the *Nyāya Sūtra*. Prets (following Meuthrath) says that the original version of the *Nyāya Sūtra* did not consist of the first and all of the last chapter, but in fact consisted of chapter 1 and just the second part of chapter 5, and the first part of chapter 5 is a later addition.[6] Śāstri claims that all three parts, i.e. the first chapter (with the exception of a few sūtras), chapter 5 part 1, and chapter 5 part 2, are in fact three separate treatises, each with a different author.[7]

Chapters 2, 3 and 4 discuss mainly philosophical issues and also contain replies to Buddhist arguments. Tucci claims that these three chapters originally existed as part of a

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[1] Shekhawat 1996, 77.

[2] Dasgupta 1922-55, **1**, 301.

[3] See for instance Randle 1930, 343; and Warder 1971, 136. Cf. Warder 1968, 330, where chapters 2-4 are considered earlier than chapters 1 and 5.

[4] *Upāyahṛdaya* chapter two, in Tucci 1929b, 18-21.

[5] *Caraka Saṃhitā* (3.8.65), trans. Sharma 1981-94, **1**, 368-369.

[6] Prets 2001, 548.

[7] Śāstri 1905a, 246-247.

Vaiśeṣika treatise before they were incorporated into the *Nyāya Sūtra*.[1] This claim is rejected by Bronkhorst,[2] but Tucci's general conclusion is a useful one. He describes the *Nyāya Sūtra* as a combination of two sections, the first (chapters 1 and 5) containing material on logic and debate posterior to that preserved is the *Caraka Saṃhitā* and the *Upāyahṛdaya*, and a second section (chapters 2, 3 and 4) containing material on philosophical issues which were added later in response to Buddhist objections.[3] The logical material from chapters 1 and 5 describes 16 terms. These terms are not arranged into groups, but related terms appear together and this suggests a classification of these 16 terms under eight topics:

1. Epistemology, term 1

2. Objects of knowledge, term 2

3. Proofs, terms 3-9

4. Debate, terms 10-12

5. Faulty reasons, term 13

6. Equivocation, term 14

7. Futile rejoinders, term 15

8. Points of defeat, term 16

## 6.2.1   Epistemology (term 1)

The first term in the *Nyāya Sūtra* is pramāṇa which is usually translated as means of valid cognition. Valid cognition is understood as a knowledge event that correctly cognises an object. The means of such events refers to the instruments with which objects are correctly cognised. The *Nyāya Sūtra* lists four such instruments: perception (*pratyakṣa*), inference (*anumāna*), analogy (*upamāna*) and word (*śabda*) or verbal testimony. These four are the ways in which knowledge of reality is acquired. They therefore constitute the pre-eminent standard against which the truth of claims about the world can be determined.

The *Nyāya Sūtra* takes the term 'means of valid cognition' as its starting point for a discussion on logic and debate. This is in contrast to the *Caraka Saṃhitā* which begins its discussion with the term 'debate'. Caraka mentions perception, inference, tradition (*aitihya*)

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[1] Tucci 1929b, xxviii.

[2] Bronkhorst 1985b, 123.

[3] Tucci 1929b, xxx.

and analogy (*aupamya*) as the four ways in which a reason is known.[1] He also says that whatever is revealed with these four is reality (*tattva*).[2] This corresponds to what the *Nyāya Sūtra* says about the four means of valid cognition. Caraka discusses each of these four separately in his list of terms, but he does not say that they are the means of valid cognition. Caraka claims that authoritative statements (*āptopadeśa*), perception, inference and reasoning (*yukti*) are the means of valid cognition.[3] The *Upāyahṛdaya* accepts the same four means of valid cognition as does the *Nyāya Sūtra*, whereas the *Vaiśeṣika Sūtra* accepts only the first two, perception and inference.

## Perception (1.1)

The *Nyāya Sūtra* describes perception (*pratyakṣa*) as knowledge that (i) arises from contact between the sense organs and their objects, (ii) is not associated with a name (*avyapadeśya*), i.e. arises without the aid of verbal representation, (iii) is not erroneous (*avyabhicāri*), i.e. not contradicted by later experience, and (iv) is of a definite character (*vyavasāyātmaka*), i.e. devoid of uncertainty.[4]

Caraka's definition of perception mentions contact between four things: the self, sense organs, mind and sense objects,[5] whereas the *Nyāya Sūtra* mentions contact between only two things, sense organs and sense objects, and omits contact between the self and the mind. This difference is discussed in the *Nyāya Sūtra* and in its commentaries.[6] The *Nyāya Sūtra* also adds three more conditions not mentioned by Caraka. These include conditions which exclude erroneous and doubtful cognitions and thereby ensures that perception complies with the definition of a means of valid cognition. The *Upāyahṛdaya* and the *Vaiśeṣika Sūtra* also accept perception as a means of valid cognition.

## Inference (1.2)

The *Nyāya Sūtra* declares that inference (*anumāna*) is preceded by perception and is of three kinds: (i) as before (*pūrvavat*) or the prior, (ii) as the remainder (*śeṣavat*) or the

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[1] Caraka's term for analogy is spelt "*aupamya*" while the *Nyāya Sūtra* spells the same term "*aupāna*".

[2] *Caraka Saṃhitā* (3.8.33), trans. Sharma 1981-94, **1**, 361.

[3] *Caraka Saṃhitā* (1.11.33), trans. Sharma 1981-94, **1**, 74.

[4] *Nyāya Sūtra* (1.1.4), trans. Jhā 1915-19, **1**, 111-152.

[5] *Caraka Saṃhitā* (1.11.20), trans. Sharma 1981-94, **1**, 72. See translation in Filliozat 1993, 104.

[6] *Nyāya Sūtra* (2.1.20-23), trans. Jhā 1915-19, **2**, 77-87. See also Jhā 1915-19, **1**, 111-112, and 121-125; and Vidyābhūṣaṇa 1920, 92-93.

subsequent, and (iii) as observed in similar (instances) (*sāmānyato-dṛṣṭa*) or corresponding to a general class.[1] The first chapter of the *Nyāya Sūtra* does not provide any examples of these three, nor does it explain the meanings of these three terms. This has given rise to various interpretations of the three types of inference.[2]

Vātsyāyana's commentary on the *Nyāya Sūtra* offers two different interpretations of this passage.[3] Vātsyāyana may mean these to be two equally acceptable interpretations or possibly two rival interpretations. The fact that he provides two interpretations indicates that there was uncertainty regarding the meaning of these terms even in Vātsyāyana's day (fifth century AD).[4] The first interpretation of the passage states that:

1. 'as before' refers to an inference from what preceded, i.e. from cause to effect, e.g. inferring from the sight of gathering clouds to the conclusion that rain will fall,

2. 'as the remainder' refers to an inference from what follows, i.e. from effect to cause, e.g. inferring from the sight of a swollen river to the conclusion that rain has recently fallen (upstream), and

3. 'as observed in similar (instances)' refers to an inference from what is observed in other similar cases, i.e. from present similarity, e.g. (concerning moving bodies) inferring from the observation of the sun in different positions to the conclusion that the sun is moving.

These same three terms according to Vātsyāyana's second interpretation are:

1. 'as before' refers to an inference by recalling previous experiences, i.e. just as one object has been seen to always accompany another object before, e.g. inferring from the sight of smoke to the conclusion that fire is present,

2. 'as the remainder' refers to an inference by elimination, i.e. the exclusion of other alternatives leaves the remainder, e.g. inferring from the fact that sound must be

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[1] *Nyāya Sūtra* (1.1.5), trans. Jhā 1915-19, **1**, 153-196. The third type of inference, as observed in similar (instances), is also mentioned in the *Vaiśeṣika Sūtra* (2.1.16), trans. Sinha 1911, 69.

[2] Tucci 1929b, xvii-xviii; Schuster 1972, 377-386; and Matilal 1985, 30-33.

[3] *Nyāya Bhāṣya* on 1.1.5 trans. Jhā 1915-19, **1**, 153-155. See also Schuster 1972, 393 note 59, for a translation of the second interpretation.

[4] Cf. Keith 1921, 88.

either a substance, quality, or activity, and its not being either a substance or activity, to the conclusion that sound is a quality,[1] and

3.  'as observed in similar (instances)' refers to an inference from what is observed in other similar cases, i.e. from other objects with a common characteristic, e.g. (existing only in substances) inferring from the fact that desire, etc., are attributes and must therefore abide in a substance, to the conclusion that the self exists (as the required substance).[2]

The first of these two interpretations distinguishes between three types of inference on the basis of the three times (the future, past and present) and not on the basis of cause and effect. That is, the first type of inference is an inference from present evidence (gathering clouds) to the future (rain); the second is an inference from present evidence (a swollen river) to the past (rain); and the third is an inference from present evidence (the sun's occupying different positions) to the present (movement of the sun). Vātsyāyana describes the first two types of inference as being from cause to effect and from effect to cause respectively, but he makes no mention of cause and effect in the third type of inference. However, all three of Vātsyāyana's examples involve cause and effect. In the first case, the reason (gathering clouds) is the cause of the conclusion (rain); in the second case, the reason (a swollen river) is the effect of the conclusion (rain); and in the third case the reason (the sun's occupying different positions) is the effect of the conclusion (movement of the sun).[3] However, these three types of inference are not distinguished from one another on the basis of cause and effect.[4] If they were then the third type of inference would be no different form the second. The distinction between them is made on the basis of time, i.e. whether the object inferred is in the future, past or present.

At the end of his discussion on these two interpretations Vātsyāyana says:

> [The difference between perception and inference is that] perception pertains to things present, while inference pertains to things present as well as not present [i.e. past and future]. "How so?" As a matter of fact, inference is applicable to all three points of time: by means of inference we apprehend things past, present and future: for instance, we infer [a] that 'such and such a thing will happen', – [b] that 'such and such a thing is present', –

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[1] A similar argument is in the *Vaiśeṣika Sūtra* (2.1.27), trans. Sinha 1911, 76; see also 2.2.23-24 trans. Sinha 1911, 95-96.

[2] Cf. *Vaiśeṣika Sūtra* (3.2.7-12), trans. Sinha 1911, 132-136.

[3] Cf. Dhruva 1920, 252 and 255.

[4] Cf. Sinha 1911, 306-307.

and also [c] that 'such and such a thing existed.' The past and the future are 'not present', [hence we speak of inference as pertaining to the present as well as the not-present].[1]

Also, in each of these cases, i.e. inferring a past, future or present object, the object inferred is not known by perception. In the first two cases, i.e. when inferring a past or future object, the rain that has fallen and that will fall, are not visible in the present when the inference is made simply because neither the past nor the future rain exists in the present. In the third case, i.e. inferring a present object, the sun's movement is not visible to those making the inference because the movement is very gradual, although the sun's movement does exist in the present. In the first two cases the object inferred, i.e. the past and future rain, is something which is normally perceptible, but just not perceptible at the time when the inference is made (in the present). In the third case, the object (the sun's movement) is not perceptible, i.e. is not visibly noticeable at any time.

Understanding Vātsyāyana's first interpretation as distinguishing on the basis of time rather than on the basis of cause and effect also receives support from the *Nyāya Sūtra* itself. Chapter two discusses objections raised against the three types of inference.[2] The objector claims that the conclusion in each case, i.e. past rain, future rain and a present peacock, could be explained by obstruction, destruction and resemblance (respectively). That is, the objector rejects the following claims: (i) that a swollen river is conclusive evidence of past rain, (ii) that running ants are conclusive evidence of coming rain, and (iii) that a peacock's call is conclusive evidence of the presence of a peacock. The reasons for these three objections are: (i) because a river could rise due to an obstruction (dam), (ii) because ants could be running due to the destruction of their nest, and (iii) because what sounds like a peacock could be the mere resemblance of a peacock's call. In reply to these objections the *Nyāya Sūtra* says: not so, because the actual reasons are not simply a swollen river, running ants, and a peacock's call. The reasons are in fact qualified in each case. That is, when inferring past rain, the reason is a swollen river that is flowing swiftly and carrying debris; when inferring future rain, the reason is running ants that are moving their eggs in an orderly fashion without fear; and when inferring the presence of a peacock, the reason is a peacock's call that is the genuine sound of a peacock.

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[1] *Nyāya Bhāsya* on 1.1.5 trans. Jhā 1915-19, **1**, 155. Cf. trans. in Schuster 1972, 392 note 51.

[2] *Nyāya Sūtra* (2.1.37-38), trans. Jhā 1915-19, **2**, 212-218.

The point here is that these three types of inference are: (i) from the present to the past, (ii) from the present to the future, and (iii) from the present to the present. The three examples are distinguished by time, not by cause and effect. In fact, the example of running ants being a sign of future rain does not suggest that running ants actually causes rain, only that both running ants and rain have a common cause and thus the fact that ants are running is a sign of coming rain. Immediately after this discussion on the objections to these three types of inference there is a discussion on the three times, past, present and future.[1] This discussion on time is a natural continuation of the threefold division of inference based on time.[2]

This discussion of the three types of inference in the second chapter of the *Nyāya Sūtra* matches Vātsyāyana's first interpretation – the only difference is that two of the examples in the second chapter are different from those that Vātsyāyana provides in his first interpretation, and the order in which the first two types of inference are discussed is reversed. The first of Vātsyāyana's two interpretations understood as a classification of inference based on time matches the system of classifying inference in the *Caraka Saṃhitā*. Caraka says: "Inference is based on prior perception. It is of three types and is related to the three times."[3] Caraka does not name the three types of inference, but he does provide examples of each type. These are: (i) inferring the presence of a hidden fire from the perception of smoke (present to present), (ii) inferring the past act of sexual intercourse from the perception of a foetus (present to past), and (iii) inferring future fruit from the perception of a seed (present to future).[4] A minor difference between Caraka's system and Vātsyāyana's first interpretation is that the order in which Caraka presents his three types of inference is different from that used in the *Nyāya Sūtra* and in Vātsyāyana's commentary. Thus, the system of dividing inference into three based on time can be dated well before the fifth century AD when Vātsyāyana wrote his commentary. It is clearly used in the *Caraka Saṃhitā* (c.100 AD) and it was probably the intention of the author of the first chapter of the *Nyāya Sūtra*.[5]

The second of Vātsyāyana's interpretations does not distinguish between the three types of inference on the basis of time or on the basis of cause and effect. These three types of

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[1] *Nyāya Sūtra* (2.1.39-43), trans. Jhā 1915-19, 2, 219-229.

[2] See Matilal 1985, 38-39.

[3] *Caraka Saṃhitā* (1.11.21-22), trans. Sharma 1981-94, 1, 72. Cf. trans. in Schuster 1972, 391 note 46.

[4] See Schuster 1972, 354.

[5] Katsura 1986, 3.

inference are distinguished on the basis of the relationship that exists between the evidence and what is inferred. The first type of inference is based on the constant conjunction of two objects (e.g. smoke and fire) such that the presence of one object (smoke) is evidence for the presence of the other (fire); the second is an inference based on the fact that the exclusion of some objects (e.g. substance and activity) from a group of objects (e.g. substance, quality and activity) is evidence for the presence of the remainder (quality);[1] and the third is based on the fact that an object (e.g. desire) shares characteristics (e.g. existing only in a substance) with other objects of its type (attributes) such that the presence of the object in question (desire) is evidence for the presence of the shared characteristic (existing only in a substance).

The system of classifying inference on the basis of the relationship between the evidence and what is inferred is also found well before Vātsyāyana's time. Schuster[2] argues that Vātsyāyana's second interpretation was influenced by a Sāṃhkya work entitled the *Ṣaṣṭitantra* (Science of Sixty Topics)[3] written by Vṛṣagaṇa (Vārṣagaṇya, c.100-300 AD).[4] Vṛṣagaṇa's work is now lost but its contents have been reconstructed by Frauwallner.[5] The *Ṣaṣṭitantra* may well have been based on an earlier work or system with the same name. According to Frauwallner's reconstruction, seven types of relation (*sambandha*) were fundamental to inference.[6] Inference is defined as depending on the perception of one aspect of an established relation in order to infer the other aspect.[7] The *Ṣaṣṭitantra* describes two types of inference: (1) that based on a specific perception in one situation (*viśeṣato-dṛṣṭa*), and (2) that based on a specific perception in more than one situation (*sāmānyato-dṛṣṭa*) i.e. inference based on general correlation. The second of these is also divided into two: (i) as before (*pūrvavat*) or from cause to effect, e.g. from the perception of gathering clouds to the conclusion of imminent rain, and (ii) as the remainder (*śeṣavat*) or from effect to cause, e.g. from the perception of a swollen river to the conclusion of that rain has recently fallen.[8] The

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[1] Katsura 2000a, 4.

[2] Schuster 1972, 361-363.

[3] The work is summarised in Potter ed. 1965-99, **4**, 125-128.

[4] Dhruva 1920, 274 has c.150 BC.

[5] Frauwallner 1958.

[6] Listed in Katsura 1986, 4; Potter ed. 1965-99, **4**, 95; Oetke 1996, 448; Walser 1998, 195-196; and in Ganeri 2000, 148 note 4.

[7] Potter ed. 1965-99, **4**, 135 and 136. Cf. Walser 1998, 194-195.

[8] Potter ed. 1965-99, **4**, 95-96; and Walser 1998, 197-198.

similarities with Vātsyāyana's second interpretation of three types of inference are clearly evident in the ancient Sāṃhkya system as it appears in the *Ṣaṣṭitantra*.

The *Nyāya Sūtra* and Vātsyāyana's commentary also share points in common with the systems of classifying inference in the *Upāyahṛdaya* and the *Vaiśeṣika Sūtra* (both discussed above). The *Upāyahṛdaya* classifies inference into three and uses the very same three terms as those in the *Nyāya Sūtra*: as before (*pūrvavat*), as the remainder (*śeṣavat*), and as observed in similar (instances) (*sāmānyato-dṛṣṭa*). These three are explained in the *Upāyahṛdaya* as inference from past to present, from part to whole, and from similar cases to this case. Vātsyāyana's second interpretation of these three is from effect to cause, from the exclusion of others to the remainder, and from similar cases to this case. The *Vaiśeṣika Sūtra* also uses the term 'as observed in similar (instances)' (*sāmānyato-dṛṣṭa*) to name one of its two types of inference. The fact that the *Upāyahṛdaya* was written by a Buddhist suggests that rival schools during this early period shared a similar system of logic. The *Vaiśeṣika Sūtra*, on the other hand, is philosophically closely aligned with the *Nyāya Sūtra* and their similarities come as no surprise.[1]

The tradition of dividing inference into three types is also found in a Jaina work called the *Anuyogadvāra* (Means of Examination) written by Āryarakṣita (c.100 AD). Dhruva argues that the author simply reproduced or rearranged the contents of another work with the same title that dates from the beginning of the third century BC.[2] The *Anuyogadvāra* divides inference into three:

1. as before (*puvvava*) i.e. from marks previously observed, e.g. inferring from the sight of a scar previously observed on a child to the conclusion that the same person is present (as an adult),

2. from the other (*sesava*) i.e. from one member of a related pair to the other; this is further divided into five types: (i) inferring a cause from its effect (*kajjeṇam*), e.g. a peacock from its call, (ii) inferring an effect from its cause (*kāraṇeṇam*), e.g. a piece of cloth from (the weaving of) threads, (iii) inferring a substance from its attribute (*guṇeṇam*), e.g. salt from its taste, (iv) inferring a whole from its parts

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[1] Ui 1917, 16 note 1; and Thakur 1963, describe the many points of correspondence between the *Vaiśeṣika Sūtra* and Vātsyāyana's commentary on the *Nyāya Sūtra*. See also Keith 1921, 21 note 1.

[2] Dhruva 1920, 265.

(*avayavenam*), e.g. an elephant from (seeing only) its trunk, and (v) inferring the abode from what abides therein (*āsayenam*), e.g. water from (flying) cranes, and

3.   from similar cases (*ditta-sāhammava*) i.e. from what is observed in other similar cases. This is further divided into two types: (i) inferring from what is common to all of a group (*sāmanna-dittham*), e.g. as one man is, so are many, and as many are, so is one, and (ii) inferring from the distinguishing trait of a certain individual in a group (*visesa-dittham*), e.g. as (recognising) one's friend in a crowd.[1]

Dhruva[2] also claims that these same three terms, i.e. *pūrvavat* (as before), *sesavat* (as the remainder) and *sāmānyato-drsta* (as observed in similar instances), originated in the ancient Mīmāmsā school and can be found in the *Mīmāmsā Sūtra* (attributed to Jaimini).[3] This work is the earliest treatise of the school and is dated around the second century BC. The terms *pūrva* (the prior or primary) and *sesa* (the remainder or subsidiary) are used to mean the prior and posterior part of a sentence or a relation of a primary thing to its subsidiary. The term *sāmānya* (likeness or participation in a common class) is used as the basis of an argument from parallel instances.[4]

The similar ways in which inference is classified indicates that there was an exchange of ideas between the different schools of thought. The works containing classifications of inference cover the whole spectrum of schools in ancient India. There is the *Caraka Samhitā* and the *Sastitantra* from the Sāmhkya school, the *Upāyahrdaya* from the Buddhist school, the *Vaisesika Sūtra* from the Vaisesika school, and the *Anuyogadvāra* from the Jaina school, and the *Mīmāmsā Sūtra* from the Mīmāmsā school. The *Nyāya Sūtra* appears to have taken over the classification scheme for inference used by other schools. There is no indication of any Greek influence in these ways of classifying inference.

### Analogy (1.3)

The *Nyāya Sūtra* describes analogy (*upamāna*) as a means to knowledge gained through comparison with a well-known (*prasiddha*) object.[5] For instance, when an unfamiliar animal,

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[1] Dhruva 1920, 258-260; Solomon 1976-78, **1**, 379-380; and Schuster 1972, 384-385. The *Anuyogadvāra* also divides inference into three as in the *Nyāya Sūtra*, and into two as in the *Sastitantra*.

[2] Dhruva 1920, 261-264.

[3] Dhruva 1920, 262, lists the passages in the *Mīmāmsā Sūtra* that contain these terms. See Matilal 1985, 40-41.

[4] See Schuster 1972, 390 note 45.

[5] *Nyāya Sūtra* (1.1.6), trans. Jhā 1915-19, **1**, 196-199.

such as a *gavaya* (wild cattle), is known to resemble familiar ones, like domestic cattle, then the unfamiliar animal is recognised as a *gavaya* (for the first time) when it is noticed that it resembles a (domestic) cow. In this way knowledge that the animal in question is a *gavaya* is gained through analogy.

The *Caraka Saṃhitā* describes analogy (*aupamya*) in the same way, but with a slightly different spelling of the term.[1] The *Upāyahṛdaya* accepts analogy as a separate means of valid cognition as does the *Nyāya Sūtra*, whereas the *Vaiśeṣika Sūtra* includes analogy in inference.[2] The *Nyāya Sūtra* discusses objections to analogy in chapter two and specifically rejects the claim that analogy should be included in inference.[3]

## Verbal testimony (1.4)

Word (*śabda*) or verbal testimony is described in the *Nyāya Sūtra* as the assertions (*upadeśa*) of credible persons (*āpta*).[4] The *Caraka Saṃhitā* calls the assertions of credible persons 'authoritative statements' (*āptopadeśa*),[5] and calls sources of knowledge such as the Vedas 'tradition' (*aitihya*).[6] Both terms, authoritative statements and tradition, are used synonymously in the *Caraka Saṃhitā*. Further, the *Nyāya Sūtra* says explicitly that tradition (*aitihya*) is no different from word (*śabda*).[7] The *Upāyahṛdaya* uses a slightly different term, 'scriptural tradition' (*āgama*), for the same source of knowledge. Despite the variation in terminology, all three authors would agree that authoritative sources are sources of knowledge separate from perception, inference and analogy. The *Vaiśeṣika Sūtra* includes word (*śabda*) or verbal testimony in inference.[8] The *Nyāya Sūtra* takes up this point and argues that word is definitely a separate source of valid cognition from inference.[9]

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[1] Term 21 in *Caraka Saṃhitā* (3.8.42), trans. Sharma 1981-94, **1**, 363.

[2] *Vaiśeṣika Sūtra* (9.2.5), trans. Sinha 1911, 316.

[3] *Nyāya Sūtra* (2.1.44-48), trans. Jhā 1915-19, **2**, 230-238.

[4] *Nyāya Sūtra* (1.1.7), trans. Jhā 1915-19, **1**, 199-208.

[5] *Caraka Saṃhitā* (1.11.18-19 and 3.4.4), trans. Sharma 1981-94, **1**, 72 and 325.

[6] Term 20 in *Caraka Saṃhitā* (3.8.41), trans. Sharma 1981-94, **1**, 363. See also *Caraka Saṃhitā* (1.11.27), trans. Sharma 1981-94, **1**, 73.

[7] *Nyāya Sūtra* (2.2.2), trans. Jhā 1915-19, **2**, 300-304.

[8] *Vaiśeṣika Sūtra* (9.2.3), trans. Sinha 1911, 310.

[9] *Nyāya Sūtra* (2.1.49-52), trans. Jhā 1915-19, **2**, 239-249.

The *Nyāya Sūtra* divides word into two: (i) words referring to the observable (*dṛṣṭārtha*), and (ii) words referring to the unobservable (*adṛṣṭārtha*).[1] Caraka uses the term 'word' (*śabda*) not to mean one of the sources of knowledge, but to mean an assertion.[2] Caraka lists four types of assertions, the first two of which are exactly the same as the two types found in the *Nyāya Sūtra*. The *Nyāya Sūtra* seems to have combined together what Caraka understood as two different terms, and then applied the division of one to the other.

## 6.2.2   Objects of knowledge (term 2)

The second of the sixteen terms is 'object of valid cognition' (*prameya*). This term refers to everything that exists. That is, the four means of valid cognition, viz. perception, inference, analogy and verbal testimony, are the means by which all existent objects are correctly cognised. All existent things are therefore objects cognised by valid cognition. However, the *Nyāya Sūtra* lists only 12 objects of valid cognition: self (*ātman*), body (*śarīa*), sense organs (*indriya*), sense objects (*artha*), intellect (*buddhi*), mind (*manas*), activity (*pravṛtti*), fault (*doṣa*), rebirth (*pretyabhāva*), effect (*phala*), suffering (*duḥkha*), and liberation (*apavarga*).[3] These twelve are obviously not presented as an exhaustive list of the categories (*padārtha*) of all phenomena as was done in the *Vaiśeṣika Sūtra*, but as a list of those objects that should be correctly understood. These twelve objects of valid cognition are things that Buddhists also consider important to understand.

The second sūtra in the *Nyāya Sūtra* also appears to resemble Buddhist ideas. The second sūtra says (paraphrased):

> The cessation of false knowledge [*mithyājñāna*] removes faults [*doṣa*], the cessation of faults removes activity [*pravṛtti*], the cessation of activity removes birth [*janma*], the cessation of birth removes suffering [*duḥkha*], the cessation of suffering is liberation [*apavarga*].[4]

Śāstri claims "that some later writer has interpolated the second sūtra with a view to add philosophical sections to the work."[5] This *sūtra* resembles the Buddhist theory of dependent origination (*paṭicca-samuppāda*)[6] which is described in such works as the *Nidāna Saṃyutta*

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[1] *Nyāya Sūtra* (1.1.8), trans. Jhā 1915-19, **1**, 208-210.

[2] Term 17 in *Caraka Saṃhitā* (3.8.38), trans. Sharma 1981-94, **1**, 362-363.

[3] *Nyāya Sūtra* (1.1.9), trans. Jhā 1915-19, **1**, 210-216.

[4] *Nyāya Sūtra* (1.1.2), trans. Jhā 1915-19, **1**, 83-97.

[5] Śāstri 1905a, 248.

[6] Sanskrit *pratītya-samutpāda*, also translated as dependent arising.

(Connected Discourses on Causation),[1] the *Mahātaṇhāsaṅkhaya Sutta* (Great Discourse on the Destruction of Craving),[2] the *Mahānidāna Sutta* (Great Discourse on Origination),[3] the *Catuṣpariṣatsūtra* (On the Foundation of the Buddhist Order),[4] and in the *Śālistamba Sūtra* (Stalk of Rice Sūtra).[5] These (and other) sources describe a twelve-stage process that closely resembles the process described in six stages in the second sutra of the *Nyāya Sūtra*.

Śāstri argues that a Buddhist writer not only added the second sūtra of the first chapter but also changed the list of twelve objects of valid cognition in order to convert a logical treatise by Akṣapāda into a system of philosophy. Śāstri says:

> The Buddhist tradition, as we know it from China and Japan, distinctly says that the Logic of Akṣapāda was their handbook in logic, and that they added to and subtracted from it. ... That the science of Akṣapāda was, for a long time, in the hands of the Buddhists, and, therefore, not in great favour with the Brāhmanist, will appear from the following considerations. The Rāmāyaṇa, the Mahābhārata, the Purāṇas, and even the Dharmaśāstras dislike those who studied the Tarkaśāstra. The Vedantasūtras distinctly say that this science was not accepted by the orthodox. They are known as little removed from the Buddhists – the Buddhists are nihilists, they are half nihilists [ardhavaināśika]. That there was an unholy alliance between the Nyāya and the Buddhists in the early centuries of Buddhism, is not open to grave doubts.[6]

Tucci is less emphatic about the origins of the system of logic in chapters one and five of the *Nyāya Sūtra*. He says:

> We must confess that we do not know anything about their origin and the fact that they are of Buddhist origin can neither be affirmed nor denied by the sources at our disposal.[7]

## 6.2.3 Proofs (terms 3-9)

The next seven terms are:

3. doubt (*saṃśaya*),

4. purpose (*prayojana*),

5. example (*dṛṣṭānta*),

6. theory (*siddhānta*),

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[1] The first chapter of *Nidānavagga* (Book of Causation) in the *Saṃyutta Nikāya*, trans. Rhys Davids 1917-30, **2**, 1-94; and Bodhi 2000, **1**, 533-620.

[2] Sutta 38 of *Majjhima Nikāya*, trans. Horner 1954-59, **1**, 311-324; and Bodhi 1995, 349-361.

[3] Sutta 15 of *Dīgha Nikāya*, trans. Rhys Davids, Rhys Davids 1899-1921, **2**, 50-70; and Walshe 1987, 223-230.

[4] Trans. Kloppenborg 1973, 6-98, especially 13-14.

[5] Trans. Ross Reat 1993; and Schoening 1995. Summary in Potter ed. 1965-99, **8**, 194-197.

[6] Śāstri 1905a, 249. See also Vidyābhūṣaṇa 1917, 159-161, and Vidyābhūṣaṇa 1920, 36-37. Solomon 1976-78, **1**, 366 has source references. See also Dasgupta 1922-55, **1**, 303.

[7] Tucci 1929b, xxiv-xxv.

7. member (*avayava*) of a proof,

8. reasoning (*tarka*), and

9. decision (*nirnaya*).

Five of these seven terms (3-5, 8 and 9) correspond to five similar terms in the *Caraka Samhitā*.[1] Each of Caraka's five terms is associated with one of the five parts of a proof. The *Nyāya Sūtra* also describes the same five-part proof (under the term 'member'). Caraka's five terms probably represents the original system for the corresponding terms in the *Nyāya Sūtra*.

| Members of a proof | Caraka Samhitā | Nyāya Sūtra |
|---|---|---|
| 1. proposition (*pratijñā*) | doubt (*samsaya*) | doubt (*samsaya*) |
| 2. reason (*hetu*) | purpose (*prayojana*) | purpose (*prayojana*) |
| 3. instance (*udāharana*) | scepticism (*savyabhicāra*) | example (*drstānta*) |
| 4. application (*upanaya*) | inquiry (*jijñāsā*) | reasoning (*tarka*) |
| 5. conclusion (*nigamana*) | resolution (*vyavasāya*) | decision (*nirnaya*) |

Each of the five members of a proof has its associated epistemic term, i.e. doubt for the proposition, purpose (or intention) for the reason, and so on. The *Nyāya Sūtra* discusses two more terms (theory and member) in the middle of these five and also uses different terms in some places, but it is clear that these five terms in the *Nyāya Sūtra* correspond to the five epistemic terms in the *Caraka Samhitā*. Also, the *Nyāya Sūtra* does not describe the relationship between each member of a proof and its associated epistemic term. This relationship is implied by the context and description of the terms involved. The discussion below follows the order of terms as they appear in the *Nyāya Sūtra*.

## Doubt (term 3)

The third term is doubt (*samsaya*). The *Nyāya Sūtra* describes doubt as entertaining conflicting views about an object while its specific characteristics remain unknown.[2] Both the *Caraka Samhitā*,[3] and the *Vaiśesika Sūtra*,[4] discuss doubt. Caraka does not describe any types of doubt, whereas the *Vaiśesika Sūtra* describes three types, i.e. doubt arising from seeing something (only) in general, from not seeing its distinguishing properties, or from recalling an alternative property. The description of doubt in the *Nyāya Sūtra* is unclear and it is

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[1] Terms 22-26 in *Caraka Samhitā* (3.8.43-47), trans. Sharma 1981-94, **1**, 363-364.

[2] *Nyāya Sūtra* (1.1.23), trans. Jhā 1915-19, **1**, 299-314. Note that page numbers are misprinted from 337 onwards in Jhā's translation. See also *Nyāya Sūtra* (2.1.1-7), trans. Jhā 1915-19, **2**, 1-21.

[3] Term 22 in *Caraka Samhitā* (3.8.43), trans. Sharma 1981-94, **1**, 363.

[4] *Vaiśesika Sūtra* (2.1.17-20), trans. Sinha 1911, 89-93. See also trans. in Schuster 1972, 352 and 390 note 36.

understood in various ways.[1] Some interpret this description as proposing three and some as proposing five types of doubt. The three types of doubt are:

1. recognising common properties (*samāna-dharma-upapatti*), e.g. noticing that an object is tall and upright, properties common to both a man and a post, and then doubting which this object is,

2. recognising unique properties (*aneka-dharma-upapatti*), e.g. noticing that sound is produced by something breaking, a property unique to sound, and then doubting whether sound is therefore a substance, quality or action, and

3. conflicting claims (*vipratipatti*), e.g. noticing that one source claims that the soul exists, whereas another claims the opposite, and then doubting whether the soul exits.

The first of these three appears to be the same as the first type of doubt in the *Vaiśeṣika Sūtra*, whereas the other two are not exactly the same. Those who interpret this description as proposing five types of doubt add two more to the three above:

4. uncertainty regarding apprehension (*upalabdhi-avyavasthā*), e.g. noticing that water is apprehended in a pond where it exists and in a mirage where it does not exist, and then doubting whether water exists where it is presently apprehended, and

5. uncertain regarding non-apprehension (*anupalabdhi-avyavasthā*), e.g. noticing that water is not apprehended in a radish where it exists nor in dry land where it does not exist, and then doubting whether water exists where it is presently not apprehended.

Some interpret the discussion on doubt not as a classification of doubt but as a description of the various circumstances in which doubt arises. Doubt is the first of the five epistemic terms associated with the five members of a proof. It is related to the proposition, the first member of a proof. That is, the proposition in a proof must be in doubt since a proposition that is not in doubt needs no proof.

**Purpose (term 4)**

The fourth term is purpose (*prayojana*). The *Nyāya Sūtra* describes purpose as the object that is the aim of an action.[2] The *Caraka Saṃhitā* describes purpose in similar terms.[3] Purpose or intention is the second epistemic term and it is related to the reason, the second

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[1] Potter ed. 1965-99, **2**, 170-172.

[2] *Nyāya Sūtra* (1.1.24), trans. Jhā 1915-19, **1**, 299-301.

[3] Term 23 in *Caraka Saṃhitā* (3.8.44), trans. Sharma 1981-94, **1**, 363-364.

member of a proof. That is, the purpose of the reason is to eliminate doubt concerning the proposition. The person considering the reason does so with the intention of eliminating doubt about the proposition.

## Example (term 5)

The fifth term is example (*dṛṣṭānta*). The *Nyāya Sūtra* describes example as something understood by both ordinary people and the learned alike.[1] The *Caraka Saṃhitā* also describes the example in a proof the very same way.[2] However, the *Nyāya Sūtra* should not be describing the example member of a proof at this point in the text. The example member is described below under the term instance (*udāharaṇa*) along with the other members of a proof. If the *Nyāya Sūtra* is following the pattern of terms as they are in the *Caraka Saṃhitā* then it should be describing scepticism (*savyabhicāra*) at this point. The *Caraka Saṃhitā* discusses scepticism as a state of uncertainty.[3] Scepticism is the third epistemic term in the *Caraka Saṃhitā* and it is associated with the example in a proof.

In contrast to the *Caraka Saṃhitā*, the *Nyāya Sūtra* here discontinues the description of the five epistemic terms associated with a proof to discuss two other terms, theory and member. After the members of a proof (discussed next), the *Nyāya Sūtra* returns to the two remaining epistemic terms associated with a proof (reasoning and decision).

## Theory (term 6)

The sixth term is theory (*siddhānta*). The *Nyāya Sūtra* describes theory as a philosophical doctrine.[4] Four kinds of theory are described in the following *Nyāya Sūtra*:

1. universal theory (*sarvatantra-saṃsthiti*),

2. restricted theory (*partitantra-saṃsthiti*),

3. implied theory (*adhikaraṇa-saṃsthiti*), and

4. hypothetical theory (*abhyupagama-saṃsthiti*).[5]

These same four types of theory are found in the *Upāyahṛdaya* and in the *Caraka Saṃhitā*.[1]

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[1] *Nyāya Sūtra* (1.1.25), trans. Jhā 1915-19, 1, 301-303.

[2] Term 12 in *Caraka Saṃhitā* (3.8.34), trans. Sharma 1981-94, 1, 361.

[3] Term 24 in *Caraka Saṃhitā* (3.8.45), trans. Sharma 1981-94, 1, 364.

[4] *Nyāya Sūtra* (1.1.26), trans. Jhā 1915-19, 1, 303-305. *Sūtra* 26 is slightly ambiguous.

[5] For examples of each see Vidyābhūṣaṇa 1920, 59-60.

## Members of a proof (term 7)

The seventh term is member (*avayava*). This term refers to the five parts of a proof. The *Caraka Saṃhitā* discusses two terms not mentioned in the *Nyāya Sūtra*.[2] These are proof (*sthāpanā*) and counter-proof (*prati-sthāpanā*).[3] Both of these consist of the same five parts: proposition (*pratijñā*), reason (*hetu*), example (*dṛṣṭānta*), application (*upanaya*), and conclusion (*nigamana*). The *Nyāya Sūtra* describes these same five as members, except that it uses the term 'instance' (*udāharaṇa*) where Caraka uses 'example' (*dṛṣṭānta*) for the third member.[4] The *Nyāya Sūtra* discussed example (term five above) at a point where Caraka discusses scepticism.

Jhā translates the term "*avayava*" (member) in the *sūtra* (1.1.32) that lists the five members as "factor" of reasoning (*tarka*).[5] Other translations use "inference-components".[6] However, there is no mention in the *Nyāya Sūtra* that the five members are required for an inference (*anumāna*), one of the four means of valid cognition (*pramāṇa*). The term *tarka* (reasoning) is discussed below (term eight).

The commentaries on the *Nyāya Sūtra* also discuss ten members of a proof.[7] These ten consist of the same five members listed above plus five epistemic terms, i.e. inquiry (*jijñāsā*), doubt (*saṃśaya*), belief in the possibility of a solution (*śakya-prāpti*), purpose (*prayojana*), and dispelling doubt (*saṃśaya-vyūdāsa*). Three of these (inquiry, doubt and purpose) occur amongst the five epistemic terms found in the *Caraka Saṃhitā*, and the other two of Caraka's terms (scepticism and resolution) are only slightly different from 'belief in the possibility of a solution' and 'dispelling doubt', respectively.

The *Nyāya Sūtra* and the *Caraka Saṃhitā* accept only five members in a proof. These five, from proposition to conclusion, are statements whereas the five epistemic terms, from doubt to decision (or resolution), are steps or stages in a psychological process of moving

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[1] Term 16 in *Caraka Saṃhitā* (3.8.37), trans. Sharma 1981-94, **1**, 361-362. Note that the *Caraka Saṃhitā* uses *siddhānta* where the *Nyāya Sūtra* uses *saṃsthiti* in the enumeration of the four types of theory. See also Prets 2000, 373.

[2] Vātsyāyana mentions the word "proof" (*sthāpanā*) when discussing futile rejoinders (*jāti*) in his commentary on the *Nyāya Sūtra*, see Prets 2000, 378 note 38.

[3] Terms 9 and 10 in *Caraka Saṃhitā* (3.8.31-32), trans. Sharma 1981-94, **1**, 360-361.

[4] *Nyāya Sūtra* (1.1.32), trans. Jhā 1915-19, **1**, 315-319.

[5] Jhā 1915-19, **1**, 315.

[6] Chattopadhyaya, Gangopadhyaya 1967-68, **1**, 106; and Gangopadhyaya 1982, 39.

[7] See for instance Jhā 1915-19, **1**, 316-319.

from the initial doubt about the proposition to the final decision about the conclusion. Those who accept only five members in a proof do not deny that each member or statement has an associated psychological step. The main difference between those systems that accept five members and those that accept ten is determined by whether or not the five epistemic terms are counted as members or parts of the proof.[1]

An example proof with these five members is:

| | |
|---|---|
| 1. Sound is impermanent | Proposition |
| 2. Because of being produced | Reason |
| 3. Like a pot and unlike ether | Similar and dissimilar instances |
| 4. Sound is like a pot and unlike ether | Application |
| 5. Therefore, impermanent (applies to sound) | Conclusion |

The first member of a proof is the proposition (*pratijña*). The *Nyāya Sūtra* describes the proposition as the assertion of what is to be proved,[2] exactly as it is described in the *Caraka Samhitā*.[3] The proposition consists of the subject (sound) and the property (impermanent). The proposition must be in doubt (or able to be doubted) and the fact that the subject has the property in question is what is to be proved.

The second member of a proof is the reason (*hetu*). The reason presents the property that proves or establishes the proposition through its similar and dissimilar instances being (respectively) like and unlike the subject. That is, the reason (being produced) demonstrates how a pot is similar to sound since a pot and sound both have the property of being produced. The reason also demonstrates how ether is dissimilar to sound since ether and sound do not both have the property of being produced. Thus the reason is the property that proves, i.e. causes someone to determine, that the subject has the property in the proposition.[4] Caraka describes the reason simply as the cause of understanding.[5] Purpose (*prayojana*) or intention is the epistemic term associated with the reason.

The third member of a proof is the instance (*udāharaṇa*) or example. The instance member presents two objects, the similar instance (*sādharmya-udāharaṇa*) and the dissimilar instance (*vaidharmya-udāharaṇa*). The first object is similar to the subject in that it shares

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[1] This does not apply to the ten members described by Bhadrabāhu, since each of these is a statement.

[2] *Nyāya Sūtra* (1.1.33), trans. Jhā 1915-19, **1**, 320-343.

[3] Term 8 in *Caraka Samhitā* (3.8.30), trans. Sharma 1981-94, **1**, 360.

[4] *Nyāya Sūtra* (1.1.34-35), trans. Jhā 1915-19, **1**, 343-384.

[5] Term 11 in *Caraka Samhitā* (3.8.33), trans. Sharma 1981-94, **1**, 361.

with the subject the property presented in the reason. The second object is dissimilar to the subject in that it does not share with the subject the property presented in the reason.[1] The *Caraka Saṃhitā* uses the term example (*dṛṣṭānta*) to describe the third member of a proof and makes no mention of two types of example.[2] It describes the example as something understood by both ordinary people and the learned alike, just as the *Nyāya Sūtra* described the example (term number 5 above). The *Upāyahṛdaya* uses the term instance (*udāharaṇa*) for the third member of a proof and describes two types of instance, the similar and the dissimilar instance. The *Nyāya Sūtra* agrees with the *Upāyahṛdaya*'s terminology and classification of the third member of a proof. Neither the *Upāyahṛdaya* nor the *Nyāya Sūtra* make it clear whether both instances are required to establish the proposition or whether either instance alone would be sufficient.

The *Caraka Saṃhitā* discusses scepticism as the epistemic term associated with the third member of a proof.[3] The *Nyāya Sūtra* makes no mention of this. The commentaries on the *Nyāya Sūtra* mention only that the person considering the two instances considers how the similar instance has the property in the proposition and is like the subject in that the subject and similar instance share the property in the reason, whereas the dissimilar instance is the exact opposite of this. Thus, if the subject (sound) in the proof above is impermanent then it would be like the similar instance (a pot), and if the subject is permanent then it would be like the dissimilar instance (ether).

The fourth member of a proof is the application (*upanaya*). The application emphasises the similarity between the subject and the similar instance, and the dissimilarity between the subject and the dissimilar instance.[4] The *Caraka Saṃhitā* does not provide a specific explanation of the application,[5] although the application member in Caraka's sample proof is in agreement with the *Nyāya Sūtra* description of the application. Caraka discusses inquiry (*jijñāsā*) whereas the *Nyāya Sūtra* discusses reasoning (*tarka*) as the epistemic term associated with the application member in a proof (see term number 8 below).

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[1] *Nyāya Sūtra* (1.1.36-37), trans. Jhā 1915-19, **1**, 385-396.

[2] Term 12 in *Caraka Saṃhitā* (3.8.34), trans. Sharma 1981-94, **1**, 361.

[3] Term 24 in *Caraka Saṃhitā* (3.8.45), trans. Sharma 1981-94, **1**, 364.

[4] *Nyāya Sūtra* (1.1.38), trans. Jhā 1915-19, **1**, 396-398.

[5] Term 13 in *Caraka Saṃhitā* (3.8.35), trans. Sharma 1981-94, **1**, 361.

The fifth member of a proof is the conclusion (*nigamana*). The conclusion emphasises the original proposition, i.e. that the subject has the property in question, because of the reason provided.[1] The conclusion in Caraka's sample proof is the same as in the *Nyāya Sūtra*, although the *Caraka Saṃhitā* does not provide a clear explanation of the conclusion.[2] The *Caraka Saṃhitā* discusses resolution (*vyavasāya*) whereas the *Nyāya Sūtra* discusses decision (*nirṇaya*) as the epistemic term associated with the conclusion member of a proof (see term number 9 below).

## Reasoning (term 8)

The eighth term is reasoning (*tarka*).[3] The *Nyāya Sūtra* describes reasoning as deliberating on the evidence to determine the real nature of an object when it is not known.[4] This suggests that the general meaning of reasoning is perhaps to deliberate on all five members of a proof. However, the meaning of reasoning as it is used here is limited to deliberating on the application member only. That is, reasoning is the stage before the decision is made regarding the conclusion. Reasoning in this sense is associated with the application, the fourth member of a proof. The *Caraka Saṃhitā* discusses inquiry (*jijñāsā*) as the epistemic term associated with the application.[5]

Reasoning in this technical sense is the process of deliberating on the two alternatives for the subject. The first alternative is that the subject is like the similar example and has the property in the proposition, and the other alternative is that it is like the dissimilar example and does not have the property in question. Reasoning involves assuming one alternative and then the other in order to eliminate one of these. In the example proof above, this involves assuming for instance that sound is permanent like ether. But if this were the case then sound would not be produced, when sound clearly is produced. Thus the assumption that sound is

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[1] *Nyāya Sūtra* (1.1.39), trans. Jhā 1915-19, **1**, 398-405. Note that repetition (*punarukta*) is a point of defeat (*nigraha-sthāna*), i.e. it counts as a reason to lose a debate. See *Nyāya Sūtra* (5.2.14-15), trans. Jhā 1915-19, **4**, 333-335.

[2] Term 14 in *Caraka Saṃhitā* (3.8.35), trans. Sharma 1981-94, **1**, 361.

[3] Alternative translations for *tarka* are, for instance: Vidyābhūṣaṇa 1920, 61; and Radhakrishnan, Moore 1957, 363, "confutation". Jhā, G. 1915-19, 1, 406; and Solomon 1976-78, **1**, 464, "hypothetical reasoning". Gangopadhyaya 1982, 47, "hypothetical argument". Matilal 1986, 78, "supportive argument". Colebrooke 1824, 48; Keith 1921, 174; Kajiyama 1958, 33; and Potter ed. 1965-99, **2**, 203, "reductio ad absurdum".

[4] *Nyāya Sūtra* (1.1.40), trans. Jhā 1915-19, **1**, 405-417.

[5] Term 25 in *Caraka Saṃhitā* (3.8.46), trans. Sharma 1981-94, **1**, 364.

permanent leads to a contradiction. Based on this, one of the two alternatives for the subject is eliminated thereby clearing the way for the last remaining epistemic term, decision.

Reasoning differs from doubt in that doubt entertains both alternatives whereas reasoning assumes one alternative and then the other in order to eliminate one of these alternatives. Reasoning also differs from decision in that it lacks the certainty of decision. That is, all doubt about the proposition is not eliminated until the final decision is made regarding the conclusion. This occurs after the stage of reasoning about the application.

**Decision (term 9)**

The ninth term is decision (*nirṇaya*). The *Nyāya Sūtra* describes decision as the determination of the real nature of an object which was originally in doubt. This is done by accepting the proposition and rejecting its opposite, the counter-proposition.[1] In the sample proof above for instance, the proposition that sound is impermanent was initially in doubt. After reasoning that sound cannot be permanent, the decision is made that the conclusion is beyond doubt and that sound is in fact impermanent. Decision is associated with the fifth member of a proof, the conclusion. The *Caraka Saṃhitā* discusses resolution (*vyavasāya*) as the epistemic term associated with the conclusion.[2]

This completes the section on the five members of a proof, each with its associated psychological step. These proofs are used to establish theories in debates.

## 6.2.4 Debate (terms 10-12)

The next three terms concern debate. The *Caraka Saṃhitā* also discusses these same three terms. The first term is debate or academic discussion (*vāda*) which the *Caraka Saṃhitā* divides into two: positive (*jalpa*) and negative (*vitaṇḍā*). Positive or constructive debate is where each party opposes an opponent's view and endeavours to establish their own view. Negative or destructive debate is where each party endeavours to demolish an opponent's view without attempting to establish their own view.[3] The *Nyāya Sūtra* does not describe the latter two terms as subdivisions of the first, but describes the first term as friendly debate and the latter two as hostile forms of debate.

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[1] *Nyāya Sūtra* (1.1.41), trans. Jhā 1915-19, **1**, 417-428.

[2] Term 26 in *Caraka Saṃhitā* (3.8.47), trans. Sharma 1981-94, **1**, 364.

[3] Term 1 in *Caraka Saṃhitā* (3.8.28), trans. Sharma 1981-94, **1**, 360.

## Debate (term 10)

The tenth term is debate (*vāda*). The *Nyāya Sūtra* describes debate as discussion where each party adopts the opposite position on some issue and presents their position using the five-membered proof. Each party then supports their own position and refutes that of their opponent's using legitimate means, i.e. valid cognition (*pramāṇa*) and reasoning (*tarka*), without contradicting their respective tenets.[1] The object of this type of discussion is to establish the truth of the matter using legitimate means.

## Disputation (term 11)

The eleventh term is disputation (*jalpa*). The *Nyāya Sūtra* describes disputation as a discussion carried on as in the case of a debate (*vāda*) except that each party is not limited to using only legitimate means to support their own position and to refute that of their opponent's. They may also use illegitimate means such as quibbles (*chala*), futile rejoinders (*jāti*) and points of defeat (*nigraha-sthāna*).[2] These three terms are discussed below. The object of a disputation is to establish one's own position by any means whatsoever. Caraka describes this term as positive or constructive debate.

## Wrangle (term 12)

The twelfth term is wrangle (*vitaṇḍā*). The *Nyāya Sūtra* describes wrangle as a discussion carried on as in the case of a disputation (*jalpa*) except that each party does not support their own position but only attempts to refute their opponent's position.[3] The object of a wrangle is simply to demolish an opponent's position by any means whatsoever. Caraka describes this term as negative or destructive debate.

## 6.2.5 Faulty reasons (term 13)

The thirteenth term is fallacious reason (*hetvābhāsa*). The reason (*hetu*) is the second member of a proof and it is described as consisting of a property that establishes the proposition through its similar and dissimilar examples being (respectively) like and unlike the subject. That is, the reason demonstrates how the similar example is like the subject, since the similar example and subject both have the property presented in the reason. The reason also demonstrates how the dissimilar example is unlike the subject, since the dissimilar

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[1] *Nyāya Sūtra* (1.2.1), trans. Jhā 1915-19, **1**, 429-471.

[2] *Nyāya Sūtra* (1.2.2), trans. Jhā 1915-19, **1**, 471-478.

[3] *Nyāya Sūtra* (1.2.3), trans. Jhā 1915-19, **1**, 478-480.

example and subject do not both have the property presented in the reason. In this way the reason establishes that the subject has the property in the proposition.[1]

Strictly speaking, this is a description of a correct reason. A reason that fails to meet the requirements of a correct reason is called a fallacious reason (*hetvābhāsa*). A fallacious or pseudo reason is one that has the mere appearance of being a correct reason when in fact it is not a correct reason. A fallacious reason occurs as the second member of a proof, just as a correct reason does, but unlike a correct reason it does not successfully establish the proposition. The ways in which a reason can fail to establish the proposition are listed in the *Nyāya Sūtra* as five. The five fallacious reasons are:

1. inconclusive (*sa-vyabhicāra*)

2. contradictory (*viruddha*)

3. similar to the point at issue (*prakaraṇa-sama*)

4. similar to the proposition to be proved (*sādhya-sama*)

5. mis-timed (*kālātīta*)[2]

The *Vaiśeṣika Sūtra*, the *Upāyahṛdaya* and the *Caraka Saṃhitā* all describe various types of incorrect reasons. There are many points in common between their respective descriptions. The *Vaiśeṣika Sūtra* uses the term *anapadeśa* rather than *hetvābhāsa* to refer to incorrect reasons. These are interpreted as consisting of either two or three types. The two types are: unproven (*asat*) and doubtful (*sandigdha*), and the scheme of three types includes one more, i.e. contradictory (*aprasiddha*). These three are similar to numbers 1, 2 and 4 of the *Nyāya Sūtra*. The *Upāyahṛdaya* divides fallacious reasons (*hetvābhāsa*) into eight. These eight include all but one (number 4) of the five fallacious reasons in the *Nyāya Sūtra*. The other four in the *Upāyahṛdaya* not included in the *Nyāya Sūtra* are: verbal equivocation (*vāk-chala*), universal equivocation (*sāmānya-chala*), reason similar to the grounds for doubt (*saṃśaya-sama*), and reason where the example is similar to the subject (*varṇya-sama*). The *Caraka Saṃhitā* uses the term '*ahetu*' to refer to its three types of incorrect reason. Only one of these three, reason similar to the point at issue (*prakaraṇa-sama*), is found in the *Nyāya Sūtra*. The other two are reason similar to the grounds for doubt (*saṃśaya-sama*) and reason similar to the subject (*varṇya-sama*).

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[1] *Nyāya Sūtra* (1.1.34-35), trans. Jhā 1915-19, **1**, 343-384.

[2] *Nyāya Sūtra* (1.2.4), trans. Jhā 1915-19, **1**, 481-496.

## Inconclusive reason (13.1)

An inconclusive reason (*sa-vyabhicāra*) is one that is not restricted to the similar position.[1] For instance, in the proof 'sound is permanent, because of being intangible, like ether' the reason suffers the fault of being inconclusive. The similar position includes everything that has the property in the proposition and the dissimilar position includes everything that does not have this property. The reason exists in the similar position, as a correct reason should, since ether for instance is permanent and also intangible. The fault with this reason is that it also exists in the dissimilar position, i.e. it is found amongst things that are impermanent. Intellect for instance is something impermanent that is also intangible. A correct reason must exist in the similar position, but must not exist in the dissimilar position. A reason that exists in both the similar and the dissimilar position is called inconclusive.

This description of an inconclusive reason matches the doubtful reason (*sandigdha*), one of the incorrect reasons in the *Vaiśeṣika Sūtra*. It also matches the way in which the *Upāyahṛdaya* describes the same term (*sa-vyabhicāra*). Caraka describes this term as scepticism or indecision, the third epistemic term which is associated with the example, the third member of the proof.[2]

## Contradictory reason (13.2)

A contradictory reason (*viruddha*) is one that contradicts an accepted position.[3] The earliest surviving commentary on the *Nyāya Sūtra* describes a contradictory reason as one that an opponent uses to support their tenets when the reason in fact contradicts the very tenets the opponent seeks to support. Later commentators describe a contradictory reason as one that contradicts the very proposition that the reason is meant to establish, i.e. the reason and the property in the proposition (within the same proof) are contradictory properties. This type of reason does not exist in the similar position. For instance, in the proof 'sound is permanent, because of being a product' the reason suffers the fault of being contradictory. That is, the reason 'being a product' does not exist in the similar position since there is nothing produced that is permanent. A correct reason must exist in the similar position and if it does not then it is contradictory.

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[1] *Nyāya Sūtra* (1.2.5), trans. Jhā 1915-19, 1, 496-503.

[2] Term 24 in *Caraka Saṃhitā* (3.8.45), trans. Sharma 1981-94, 1, 364.

[3] *Nyāya Sūtra* (1.2.6), trans. Jhā 1915-19, 1, 503-507.

There is also a contradictory reason (*aprasiddha*) in the *Vaiśeṣika Sūtra* according to one interpretation. The *Upāyahṛdaya* uses this term (*viruddha*) in three places. First it is used to name one of its fallacious reasons. It is described there in the same way as the later commentators describe a contradictory reason in the *Nyāya Sūtra*. Secondly, it is listed as a point of defeat (number 20), and thirdly, it is used to name one of the refutations (number 13) in the *Upāyahṛdaya*. Caraka describes this term as a type of defective speech, and also lists it under the points of defeat (number 13).

### Reason similar to the point at issue (13.3)

A reason that is similar to the point at issue (*prakaraṇa-sama*) is one that attempts to establish the conclusion by (simply) denying the contrary position.[1] For instance, in the proof 'sound is impermanent, because of not having the characteristics of something permanent' the reason suffers the fault of being similar to the point at issue. That is, the reason in this proof 'not having the characteristics of something permanent' means simply 'not being permanent'. Thus the proof in question amounts to, 'sound is impermanent, because of not being permanent'. The person who doubts the proposition in this proof must decide between two alternatives, i.e. whether sound is impermanent (and not permanent), or whether sound is permanent (and not impermanent). A reason that simply denies one alternative without providing any additional information lacks the necessary persuasive power for the person who doubts the proposition. Thus, such a reason is unable to establish its conclusion for this person.

The reason in this proof (not having the characteristics of something permanent) is a property that exists only in the similar position since only impermanent things do not have the characteristics of something permanent. However, this does not mean that the reason is a correct reason because the person who doubts the proposition is not able to determine that the reason exists only in the similar position. That is, the person who doubts the proposition has yet to determine whether sound has the characteristics of something permanent or whether sound has the characteristics of something impermanent. If it were possible to prove to this person that sound is impermanent simply because the characteristics of something permanent had not been apprehended in the subject, then it would be equally possible to prove to the same person that sound is permanent because the characteristics of something impermanent

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[1] *Nyāya Sūtra* (1.2.7), trans. Jhā 1915-19, 1, 508-512.

have also not been apprehended in the subject. But such reasons are in fact reasons that are similar to the point at issue and neither one of them is able to establish its conclusion.

The problem with this reason is that it is not sufficiently different from the property in the proposition to effectively remove doubt about whether the subject has the property in question for a person who doubts the proposition. The person who doubts the proposition is therefore unable to decide that the conclusion is in fact correct.

The *Nyāya Sūtra* uses this same term (*prakaraṇa-sama*) to name one of the futile rejoinders (number 15 below), although the explanation of this rejoinder suggests that the problem is one of indecision or vacillating between the two alternatives rather than one where the reason simply denies the contrary position. The *Upāyahṛdaya* uses this term to name one of its fallacious reasons and describes it in a similar way. Caraka also uses this term to name the first of his three fallacious reasons.[1] Caraka's description of this fallacious reason is the same as the *Upāyahṛdaya* and they both use practically the same example.

**Reason similar to the proposition to be proved (13.4)**

A reason that is similar to the proposition to be proved (*sādhya-sama*) is one that has not been proven to apply to the subject and it is similar in this respect to the proposition, i.e. both the reason and the proposition stand in need of a proof.[2] That is, the purpose of a proof is to establish the proposition. If the reason used to do this does not apply to the subject then the fact that the subject has the property specified in the reason remains unestablished just as the fact that the subject has the property specified in the proposition remains unestablished. For instance, in the proof 'sound is impermanent, because of being visible' the reason (being visible) does not apply to the subject, since sound is not visible. Thus, the reason in this proof is a fallacious reason that is similar to the proposition in that it has not been established.

The point here is that this type of reason simply does not apply to the subject, not that the reason stands in need of a separate proof in order to confirm for the person who doubts the proposition that it does in fact apply to the subject. A proof cannot establish something that is not the case. Thus, if an object does not in fact have a property then there is no proof that can establish that this object has that property. Similarly, if the subject does not have the property specified in the reason then there is no proof that can establish that it does have this property.

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[1] Term 36 in *Caraka Saṃhitā* (3.8.57), trans. Sharma 1981-94, 1, 367.

[2] *Nyāya Sūtra* (1.2.8), trans. Jhā 1915-19, 1, 512-516.

This type of faulty reason is similar to the unproven (*asat*) in the *Vaiśeṣika Sūtra*. The *Nyāya Sūtra* uses this same term (*sādhya-sama*) to name one of the futile refutations (number 8 below), although it is not described in the same way as this type of fallacious reason is described. This term is not mentioned in the *Caraka Saṃhitā* or in the *Upāyahṛdaya*.

## Mis-timed reason (13.5)

A reason that is mis-timed (*kālātīta*) is one that does not apply to the subject at the relevant time.[1] The exact meaning of this type of fault is unclear. Various interpretations are offered in the commentaries. The earliest extant commentary by Vātsyāyana (c.450-500 AD) rejects an interpretation that Vācaspati (tenth century AD) attributes to Buddhist logicians.[2] According to this interpretation a reason is mis-timed when it is not presented in its proper place within a five-part proof, or presented in the wrong temporal order during a debate.[3] This interpretation is similar to the way that a mis-timed reason (*kālātīta*) is described in the Buddhist *Upāyahṛdaya*, i.e. as a reason used to prove a proposition that should have been proved earlier in the temporal order of arguments in a debate. The *Upāyahṛdaya* lists a similar fault, mis-timed proof (*aprāpta-kāla*), as one of the points of defeat (number 16) but without a description. The *Nyāya Sūtra* also includes mis-timed proof (*aprāpta-kāla*) in its points of defeat (number 10 below) and describes it as occurring when the members of a proof are presented in the incorrect order. Another interpretation in the commentaries on the *Nyāya Sūtra* is that a mis-timed reason is one presented after the doubt about the proposition has been eliminated.[4]

Vātsyāyana's own interpretation is that a mis-timed reason does not apply to the subject because there is a temporal mismatch between the subject and the reason. For instance, in the proof 'sound is permanent, because of being made manifest by conjunction, like colour' the reason suffers the fault of being mis-timed. That is, the reason 'being made manifest by conjunction' does not apply to the subject because sound exists only after the conjunction that made it manifest has ceased to exist. Since subject and reason in this proof never exist at the same time, the reason does not correctly apply to the subject.

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[1] *Nyāya Sūtra* (1.2.9), trans. Jhā 1915-19, **1**, 516-521.

[2] Chattopadhyaya, Gangopadhyaya 1967-68, **1**, 149.

[3] Jhā 1915-19, **1**, 518-521.

[4] Solomon 1976-78, **1**, 278-279.

The reason in the proof above is used by those who attempt to prove that sound is permanent. The reasoning they use is that the colour of a pot is made manifest (in a dark room) by the conjunction of lamp light and the pot. The colour of the pot exists before the conjunction of the lamp light and the pot, and this colour also continues to exist after the lamp is removed, although the colour is not manifest (visible) before and after conjunction with the lamp. Similarly, sound exists both before and after it is made manifest by the conjunction of a stick and a drum or the conjunction of an axe and a log of wood, although it is not manifest (audible) at those times.

Vātsyāyana argues that there is a temporal mismatch between the conjunction that makes sound manifest and the conjunction that makes colour manifest. In the case of colour, its manifestation coincides with the time of conjunction. That is, the colour of a pot is visible only while the lamp light is present. There is no colour visible before or after the presence of the light. In the case of sound, however, its manifestation is only after the time of conjunction, as is witnessed by the fact that sound is heard well after a distant axe is seen to have struck a log of wood. There is no sound heard before or at the same time as the axe strikes, but there is sound heard after the axe has struck. Thus, at the time when the subject (sound) exists, the conjunction that produced the sound has ceased to exist and therefore the reason does not apply to the subject.

The *Nyāya Sūtra* describes equivalence in non-generation (*anutpatti-sama*), one of the futile rejoinders (number 13 below), as a proof where it is (wrongly) claimed that the reason does not apply to the subject on the grounds that there is a temporal mismatch between the subject and the reason. The author of the *Nyāya Sūtra* rejects this claim declaring it to be a futile rejoinder. This seems to count against Vātsyāyana's interpretation of a mis-timed reason. Caraka describes a similar term, delayed statement (*atītakāla*), as a statement presented after the appropriate moment for its use has elapsed.

## Comparison

One reason may suffer from more than one fault, but each fault is different from the others. The inconclusive reason exists in both the similar and the dissimilar positions. Contradictory reasons do not exist in the similar position. The reason similar to the point at issue simply re-states the position to be proved. This reason exists only in the similar position but it is not known to be in either position by the person who doubts the proposition. The

reason similar to the proposition to be proved is one that does not apply to the subject, and the mis-timed reason does not apply to the subject at the correct time.

These faults suggest that a correct reason is one that is known by the person who doubts the proposition (i) to exist in the similar position, (ii) to not exist in the dissimilar position, (iii) to apply to the subject, and (iv) to apply to the subject at the correct time.

## 6.2.6 Equivocation (term 14)

The fourteenth term is equivocation (*chala*), also translated as quibble. The *Nyāya Sūtra* defines equivocation as occurring when an opponent deliberately misinterprets the meaning of a word and responds to the unintended meaning.[1] The *Caraka Saṃhitā* defines equivocation in the same way.[2] Three types of equivocation are described in the *Nyāya Sūtra*:

1. Verbal equivocation (*vāk-chala*), i.e. playing on the ambiguity of a word, e.g. the word "*nava*" in Sanskrit can mean new or nine. In response to the statement that someone has a new (*nava*) blanket the opponent replies that there is only one blanket, not nine (*nava*). There are two equally acceptable meanings to the word "*nava*" and the opponent has deliberately responded to the meaning not intended by the speaker.

2. Universal equivocation (*sāmānya-chala*), i.e. over-generalising the meaning of a word, e.g. in response to the statement that Brahmans are learned the opponent says that even an uneducated Brahman must be learned. Here the word "Brahman" is generalised to include every single Brahman whereas the speaker intended only that Brahmans are normally learned.

3. Figurative equivocation (*upacāra-chala*), i.e. interpreting a word in its primary or literal sense when the secondary or figurative sense is intended by the speaker, e.g. in reply to the statement that the chair has called for order the opponent says that the chair has not called for order since chairs cannot speak. Here the word "chair" is used to refer to the chair person whereas the opponent takes the literal or primary sense of the word not unintended by the speaker.

The *Nyāya Sūtra* spends three sūtras (1.2.15-17) arguing against an opponent who claims that the third type of equivocation is included in the first type and consequently only two categories are required for equivocation. The *Caraka Saṃhitā* and the *Upāyahṛdaya* both

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[1] *Nyāya Sūtra* (1.2.10-17), trans. Jhā 1915-19, 1, 522-534.

[2] Term 35 in *Caraka Saṃhitā* (3.8.56), trans. Sharma 1981-94, 1, 366-367.

discuss equivocation in two categories, i.e. verbal and universal equivocation. Kajiyama claims that the opponent referred to in the *Nyāya Sūtra* is the author of the *Upāyahṛdaya*.[1] One of the examples of verbal equivocation in the *Upāyahṛdaya* is that a mountain is not on fire since it is grass and trees that are burning rather than the mountain itself. This example fits the description of a figurative equivocation as it appears in the *Nyāya Sūtra*. The *Upāyahṛdaya* describes its two types of equivocation as types of fallacious reasons (see above), whereas the *Caraka Saṃhitā* describes them as two types of statement. The *Vaiśeṣika Sūtra* does not discuss equivocation.

## 6.2.7 Futile rejoinders (term 15)

The fifteenth term is futile rejoinder (*jāti*). This term is discussed in two places in the *Nyāya Sūtra*. The first chapter contains a brief description of futile rejoinder and the fifth chapter contains a list of 24 futile rejoinders. The first chapter describes futile rejoinder as an objection (*pratyavasthāna*) by means of similarity (*sādharmya*) and dissimilarity (*vaidharmya*).[2] That is, a reason in a successful proof establishes its proposition by demonstrating that the two examples are (respectively) similar and dissimilar to the subject.[3] A futile rejoinder, on the other hand, is a proof where the reason does not establish its proposition because the required similarity and dissimilarity between the subject and each example is only apparent. This description of futile rejoinder seems to be based on what is now the first two futile rejoinders in the list of 24 in the fifth chapter.

A more general description of a futile rejoinder is a proof used to refute an opponent's explanation of the way in which propositions are established. For instance, an opponent may claim that a proposition is established whenever the subject is similar to one example, or dissimilar to the other example. A rejoinder attempting to refute this claim is a proof where the subject is in fact similar to one example, or dissimilar to the other example, but where the proposition is obviously not established. This rejoinder would then force an opponent to abandon their claim regarding the way in which a proposition is established.

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[1] Kajiyama 1991, 110.

[2] *Nyāya Sūtra* (1.2.18), trans. Prets 2001, 547. Cf. Jhā 1915-19, 1, 535-536.

[3] *Nyāya Sūtra* (1.1.34-35), trans. Jhā 1915-19, 1, 343-384.

This general description does not apply to all 24 futile rejoinders listed in chapter five.[1] The description in chapter one may be for a typical futile rejoinder rather than a definition that strictly applies to all its various types, or it may be that more examples were subsequently added in the fifth chapter than were originally intended to be included under the term. The *Nyāya Sūtra* says at the end of chapter one only that there are various futile rejoinders without indicating exactly how the term should be subdivided.[2] Many of the 24 futile rejoinders listed in chapter five appear to be simply various examples rather than a specific example illustrating each different subdivision of futile rejoinder.[3] This is in contrast to the way terms are discussed in the first chapter. When the subdivisions of terms are described in chapter one, each subdivision excludes the others and together the subdivisions include all instances of the term. The list of futile rejoinders in chapter five appears to include what was probably the contentious issues of the day rather than an enumeration of subdivisions. This supports the view that the first part of chapter five is a later addition.[4]

The author of the *Nyāya Sūtra* considers all futile rejoinders (*jāti*) to be unsuccessful in their attempts to refute some position. The word "*jāti*" is therefore translated not just as "rejoinder" but as "futile rejoinder" to make it clear that all these rejoinders are unsuccessful attempts to prove a correct position wrong.[5] A typical futile rejoinder is used to refute some position by demonstrating how the acceptance of that position leads to an unacceptable consequence. Since the consequence must be unacceptable to the opponent in order for the rejoinder to be effective in forcing the opponent to abandon their position, the rejoinder is intentionally one where the proposition is not established, or at least not considered to be established by the opponent. It is therefore a complete mistake to claim that a rejoinder is futile because the proposition in the rejoinder itself is not established. This would be to misunderstand the whole purpose of a rejoinder. A rejoinder where the proposition is established would endorse rather than count against some position. The author of the *Nyāya Sūtra* considers these rejoinders to be futile because they fail to prove another position wrong, not because the proposition in the rejoinder itself is not established.

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[1] Śāstri 1905a, 247.

[2] *Nyāya Sūtra* (1.2.20), trans. Jhā 1915-19, **1**, 538-540.

[3] Gokhale 1992, 151.

[4] Prets 2001, 548.

[5] See list of alternative translations of *jāti* in Prets 2001, 553 note 7.

Almost half of the 24 futile rejoinders listed in the *Nyāya Sūtra* are also found in the *Upāyahṛdaya* as refutations. Five of the refutations in the *Upāyahṛdaya* appear in the *Nyāya Sūtra* with the same name and described in the same way.[1] The names of three other refutations in the *Upāyahṛdaya* also appear in the *Nyāya Sūtra,* but their descriptions differ in the *Nyāya Sūtra.*[2] One other refutation in the *Upāyahṛdaya* is described in the same way as in the *Nyāya Sūtra*, but it is given a different name.[3] The refutations (*dūṣaṇa*) in the *Upāyahṛdaya* appear to have been renamed futile rejoinders (*jāti*) in the *Nyāya Sūtra*. These two terms probably have their origins in what Caraka calls rejoinder (*uttara*). Caraka does not discuss any types of rejoinders. He describes rejoinder as a statement that denies similarity when similarity has been asserted, or vice versa.[4] The *Nyāya Sūtra* describes futile rejoinder in a similar way, i.e. as an objection by means of similarity and dissimilarity.

Vātsyāyana's commentary on the *Nyāya Sūtra* explains futile rejoinder as an objection which is a directly following consequence (*prasaṅga*).[5] The word "consequence" (*prasaṅga*) is used to refer to a style of argument where an unacceptable corollary of an opponent's position is used to defeat an opponent. This form of argument is often associated with Nāgārjuna (see next chapter) and its origin may be traced back to the futile rejoinders (*jāti*) of the *Nyāya Sūtra*, the refutations (*dūṣaṇa*) of the *Upāyahṛdaya*, and the rejoinders (*uttara*) of the *Caraka Saṃhitā*. There is no discussion on rejoinders, refutations or futile rejoinders in the *Vaiśeṣika Sūtra*.

There are 24 futile rejoinders (*jāti*) listed in the first part of chapter five. These have been discussed in a number of modern publications.[6] Comparisons are made between those futile rejoinders that have counterparts in the *Caraka Saṃhitā* or the *Upāyahṛdaya* in the order that they occur in the *Nyāya Sūtra*. The list is not arranged in sections, although related items occur together in the list. This suggests a classification of these 24 into three groups of

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[1] Refutations 1, 2, 11, 12 and 15 in the *Upāyahṛdaya* appear in the *Nyāya Sūtra* as futile rejoinders 3, 4, 10, 9 and 14, respectively.

[2] Refutations 7, 17 and 20 in the *Upāyahṛdaya* appear in the *Nyāya Sūtra* as futile rejoinders 24, 12 and 13, respectively.

[3] Refutation 10 (*kāla-sama*) in the *Upāyahṛdaya* appears in the *Nyāya Sūtra* as futile rejoinder 16 (*ahetu-sama*).

[4] Term 15 in *Caraka Saṃhitā* (3.8.36), trans. Sharma 1981-94, **1**, 361.

[5] Prets 2001, 548. Cf. Jhā 1915-19, **1**, 535; and Randle 1930, 342.

[6] See for instance: Stothert 1867-70, 209-214; Vidyābhūṣaṇa 1920, 67-81; Dasgupta 1922-55, **2**, 380-382 note 4; Randle 1930, 341-368; Radhakrishnan, Moore 1957, 371-377; Potter, ed. 1965-99, **2**, 268-272; Solomon 1976-78, **1**, 146-185; Gokhale 1992, 152-166; and Matilal 1998, 61-73.

eight: (1) futile rejoinders 1-8 are related to the example, (2) futile rejoinders 9-16 are related to the reason, and (3) futile rejoinders 17-24 are related to the subject in a proof.

## Futile rejoinders related to the example (1-8)

Futile rejoinders 1-8 are related to the example (or instance) member of a proof. They argue that the similar example being like the subject, or the dissimilar example being unlike the subject, does not constitute a suitable basis upon which to establish the proposition.

The first two futile rejoinders are called:

1. Equivalence in similarity (*sādharmya-sama*)

2. Equivalence in dissimilarity (*vaidharmya-sama*)[1]

These two rejoinders argue that if the similar example shares a property with the subject then it is like the subject, and similarly, if the dissimilar example does not share a property with the subject, then it is unlike the subject. But the mere fact that an example shares or does not share a property with the subject is not a reliable basis upon which to establish the proposition. For instance, in the following proof:

| | |
|---|---|
| (1) Sound is impermanent | Proposition |
| (2) Because of being a product | Reason |
| (3) Like a pot, and unlike ether | Similar and dissimilar examples |

the fact that similar example (a pot) shares the property specified in the reason (being a product) with the subject (sound), or the fact that the dissimilar example (ether) does not share this property with the subject, is not a reliable basis upon which to establish the proposition that sound is impermanent.

The first futile rejoinder argues that if the proposition is established on the basis that the similar example shares a property with the subject then the very opposite proposition could also be established in the same way. For instance:

| | |
|---|---|
| (1) Sound is permanent | Proposition |
| (2) Because of being intangible | Reason |
| (3) Like ether | Similar example |

In this proof the similar example (ether) shares the property of being intangible with the subject (sound) and thus the proposition that sound is permanent would be wrongly established.

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[1] *Nyāya Sūtra* (5.1.2-3), trans. Jhā 1915-19, **4**, 238-244.

The second futile rejoinder raises the same point using the dissimilar example. That is, if the proposition is established on the basis that the dissimilar example does not share a property with the subject then the very opposite proposition could also be established in the same way. For instance:

(1) Sound is permanent                    Proposition
(2) Because of being intangible           Reason
(3) Unlike a pot                          Dissimilar example

In this proof the dissimilar example (a pot) does not share the property of being intangible with the subject (sound) and thus the proposition that sound is permanent would be wrongly established.

These two futile rejoinders argue that if propositions could be established on the basis that their similar examples share a property with their subjects, or that their dissimilar examples do not share a property with their subjects, then contradictory propositions could be established. Since these contradictory propositions are not established, the way in which a proof is successfully established is not based upon the similar example being like the subject or the dissimilar example being unlike the subject.

The author of the *Nyāya Sūtra* rejects these two rejoinders as futile. That is, in the first rejoinder, i.e. 'sound is permanent, because of being intangible, like ether', it is true that the similar example (ether) shares the property of intangibility with the subject (sound), since both ether and sound are intangible. However, this does not mean that ether is like sound. In order for the similar example to be like the subject, both the similar example and the subject must share an essential property. Since intangibility is not an essential property of sound, but merely a superficial property, the fact that both ether and sound are intangible does not mean that ether is like sound. Since the similar example is not like the subject in this proof, the proposition is not established, and thus the first rejoinder is futile.

Similarly, in the second rejoinder, i.e. 'sound is permanent, because of being intangible, unlike a pot', it is true that the dissimilar example (a pot) does not share the property of intangibility with the subject (sound), since it is not the case that both a pot and sound are intangible (although sound is intangible). However, this does not mean that a pot is unlike sound. In order for the dissimilar example to be unlike the subject they must not share an essential property. Since intangibility is not an essential property of sound, the fact that a pot and sound do not share intangibility does not mean that a pot is unlike sound. Since the

dissimilar example is not unlike the subject in this proof, the proposition is not established, and thus the second rejoinder is also futile.

The *Nyāya Sūtra* argues that the similar example is like the subject, and the dissimilar example is unlike the subject, because they share, or do not share, an essential property with one another. A pot for instance is like sound because it shares an essential property with sound. Similarly, ether is unlike sound because it does not share an essential property with sound. The essential property in both cases is that of being a product (i.e. being something made or produced). This essential property is used as the reason in the proof.

The next six futile rejoinders are related to the similar example. The converse of each rejoinder would equally apply to the dissimilar example, although these are not mentioned in the *Nyāya Sūtra*. In the following rejoinders, the example refers only to the similar example.

According to the *Nyāya Sūtra*, the proposition is established on the basis that the (similar) example is like the subject. For the example to be like the subject, the example and subject must share an essential property. The fact that they share some superficial property is not sufficient for the example to be like the subject. This essential property is specified in the reason. Since the example and the subject share an essential property they must also share another property. This other property is the property specified in the proposition. For instance, in the proof, 'sound is impermanent, because of being a product, like a pot', the example (a pot) shares the essential property of being a product with the subject (sound). Since a pot and sound share this essential property, they must also share the property of being impermanent, the property specified in the proposition. Thus, the proposition 'sound is impermanent' is established on the basis that the example, a pot, is like the subject, sound.

The next two futile rejoinders challenge this view. These are called:

3. Equivalence in attribution (*utkarṣa-sama*)

4. Equivalence in exclusion (*apakarṣa-sama*)[1]

The objector argues in these two rejoinders that if sharing an essential property is a reliable basis upon which to conclude that two objects also share some other property, then these two objects would have to agree in all their properties. But, claims the objector, this is

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[1] *Nyāya Sūtra* (5.1.4-6), trans. Jhā 1915-19, **4**, 245-253.

plainly not the case because if it were the case then unacceptable propositions could be wrongly established.

The third futile rejoinder argues that in the proof, 'sound is visible, because of being a product, like a pot', a pot and sound share the essential property of being a product, and thus they must also share other properties. Since a pot is visible, sound must also have this property. Thus, the proposition 'sound is visible' would be wrongly established on the basis that the example, a pot, shares an essential property with the subject, sound.

The fourth futile rejoinder raises a similar point using the absence of a property. That is, in the proof, 'sound is not audible, because of being a product, like a pot', a pot and sound share the essential property of being a product, and since a pot lacks the property of being audible, sound must also lack this property. Thus, the proposition 'sound is not audible' would be wrongly established on the basis that the example, a pot, shares an essential property with the subject, sound.

These two futile rejoinders appear as the first two refutations in the *Upāyahṛdaya*. They have the same names and are described in the same way in the *Upāyahṛdaya*. The *Nyāya Sūtra* does not name the objector but if it is not the author of the *Upāyahṛdaya* then it is a Buddhist arguing in the same way.

According to the *Nyāya Sūtra*, these two futile rejoinders are based on the mistaken view that because two objects share an essential property they must share all their properties. If this were the case then the example and subject would be identical. However, the example and subject in a successful proof are always different because the person who doubts the proposition must know that the example has the property specified in the proposition while still doubting whether or not the subject has this property.

It is not simply the fact that the example and subject share an essential property that ensures that they share certain other properties. Rather, it is the knowledge that the example and subject share an essential property that provides the justification for the person who doubts the proposition to conclude that the example and subject also share another property, one that the example is known to have. For instance, the knowledge that a pot and sound share the property of being a product provides the justification for the person who doubts whether or not sound is impermanent to conclude that a pot and sound do share the property of being impermanent.

The next two futile rejoinders challenge this view. These are called:

5. Equivalence in uncertainty (*varṇya-sama*)

6. Equivalence in certainty (*avarṇya-sama*)[1]

These rejoinders argue that simply knowing that the example and the subject share an essential property does not justify extending what is known about one to the other. If this were the case then legitimate proofs would not establish their propositions. This is because the person who is in doubt about the proposition is, on the one hand, uncertain about whether the subject has the property specified in the proposition, and on the other hand, certain that the example has this property. Since this person knows that the example and subject share an essential property, they would treat these two objects as essentially the same. Thus, what is uncertain about the subject would automatically extend to the example, or what is certain about the example would automatically extend to the subject.

The fifth rejoinder argues that the person who is in doubt about the proposition is uncertain about whether the subject has the property specified in the proposition and thus they would be equally uncertain about whether the example has this same property. The sixth rejoinder argues the converse. That is, the person who is in doubt about the proposition is certain that the example has the property specified in the proposition and thus they would be equally certain that the subject has this same property.

For instance, in the proof, 'sound is impermanent, because of being a product, like a pot', the person who is in doubt about the proposition is uncertain about whether sound is impermanent. Since they know that a pot is like sound, they would be equally uncertain as to whether or not a pot is impermanent and thus a pot would be unacceptable as an example. Alternatively, if this person is certain that a pot is impermanent and knows that a pot is like sound, then they would be equally certain that sound is impermanent. Since this person would then be in no doubt about whether sound is impermanent, the proposition in this proof would be an unacceptable proposition.

In both cases the proposition 'sound is impermanent' would not be established; either because the person who doubts the proposition would also doubt whether the example has the property in question, or because this person would be in no doubt about the proposition. Thus

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[1] *Nyāya Sūtra* (5.1.4-6), trans. Jhā 1915-19, **4**, 245-253.

the claim that the knowledge that the example is like the subject provides the justification to conclude that the subject has a property that the example is know to have is unacceptable.

The term used to name the fifth futile rejoinder (*varṇya-sama*) appears in both the *Upāyahṛdaya* and the *Caraka Saṃhitā* described as a fallacious reason. Both works describe the fault as occurring when the example stands as much in need of a proof that it has the property in the proposition as does the subject. The fifth futile rejoinder is described in a similar way, i.e. where the uncertainty about whether the subject has the property specified in the proposition applies equally to whether the example has this same property. Since the example is uncertain it would require a proof to establish that it has the property in the proposition.

The author of the *Nyāya Sūtra* would reject both futile rejoinders because they do not take into account the fact that the example and the subject are always different in a successful proof. That is, the example and subject each have their own properties which are not shared by the other. The person who doubts the proposition can be certain, therefore, that the example has a property without thereby being equally certain that the subject has this same property. Similarly, this person can be uncertain about the subject without thereby also being equally uncertain about the example. Thus, the difference between the example and subject ensures that the certainty concerning the example and the uncertainty concerning the subject do not automatically extend to the other. However, this person is still justified in concluding that what is known about the example, namely that it has the property in question, does apply to the subject.

The next two futile rejoinders challenge this view. These are called:

7. Equivalence in an alternative (*vikalpa-sama*)
8. Equivalence in the need for a proof (*sādhya-sama*)[1]

The seventh futile rejoinder argues that if the example and subject are always different, each with properties that are not shared by the other, then the property that the example is known to have could be one such property. For instance, in the proof, 'sound is impermanent, because of being a product, like a pot', the example (a pot) has properties like colour and shape that the subject (sound) does not have. Since the property of impermanence could be a property like colour and shape that a pot has and sound does not have, it is unacceptable to

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[1] *Nyāya Sūtra* (5.1.4-6), trans. Jhā 1915-19, **4**, 245-253.

apply the property specified in the proposition to the subject simply on the basis that the example has this property.

The eighth futile rejoinder argues that if it is legitimate to apply a known property of the example to the subject, then it would be equally legitimate to apply a known property of the subject to the example. One such property that the subject is know to have is the need for a proof (to establish that it has the property specified in the proposition). For instance, in the proof, 'sound is impermanent, because of being a product, like a pot', the subject (sound) stands in need of a proof in order to establish that it is impermanent. If this same property is applied to the example (a pot) then whether or not a pot is impermanent would also need a proof. But if the example requires a proof in order to establish that it has the property specified in the proposition then the example would be unacceptable since this would lead to an infinite regress. Since a property of the subject cannot be applied to the example, it is equally unacceptable to apply a property of the example to the subject.

These two futile rejoinders would be rejected by the author of the *Nyāya Sūtra* on the grounds that an example in a proof is by definition something that both ordinary people and the learned alike know to be an illustration of the property specified in the proposition. Only such an object is suitable as an example. Thus, the example never needs a proof to establish that it has the property specified in the proposition. The proposition, on the other hand, is by definition subject to doubt. That is, whether or not the subject has the property specified in the proposition is not known by both ordinary people and the learned alike, and it must be established using a proof. Hence the need for a proof always applies to the subject of a proposition but never to the example.

The term used to name the eighth futile rejoinder *sādhya-sama* (equivalence in the need for a proof) was previously used in the *Nyāya Sūtra* to name a fallacious reason, i.e. one where the reason is similar to the proposition to be proved (described above). The fault in this type of fallacious reason is described as one where the reason does not apply to the subject which is different from the way the eighth futile rejoinder is described. Śāstri claims that the use of the same term to name both a fallacious reason in the first chapter and a futile rejoinder in the fifth chapter shows that these two chapters were written by different authors.[1]

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[1] Śāstri 1905a, 247.

**Futile rejoinders related to the reason (9-16)**

The following eight futile rejoinders are related to the reason (*hetu*) member in a proof. The author of the *Nyāya Sūtra* claims that the reason is instrumental in establishing the proposition. That is, it is not merely the similarity between the example and the subject that establishes the proposition. Rather, it is the reason that establishes the proposition. The reason does this firstly by establishing the presence of the property (specified in the proposition) in the example, and secondly by establishing the similarity between the example and the subject. Thus the reason is instrumental in establishing the presence of the same property in the subject, and in this way the reason establishes the proposition in a proof.

The next two futile rejoinders argue against this view on ontological grounds. These two futile rejoinders are called:

9. Equivalence in convergence (*prāpti-sama*)

10. Equivalence in non-convergence (*aprāpti-sama*)[1]

These two futile rejoinders argue that if the reason establishes the proposition then it must do so either by connecting or by not connecting with the proposition. The first rejoinder argues against the first option and the second rejoinder argues against the second option. The relevance of these two rejoinders is lost when they are considered along with other refutations of the standard example proof, 'sound is impermanent, because of being a product, like a pot'. It must be remembered that the *Nyāya Sūtra* is discussing Buddhist refutations of a proof for the existence of the self, and explaining why such refutations are unsuccessful. The logical significance of most rejoinders is more easily understood when the rejoinder is applied to the standard example proof that sound is impermanent. But for these two rejoinders, it is best to return to the original proofs involving the self such as the proof found in the *Upāyahṛdaya*, i.e. 'the self is permanent, because of being imperceptible by the senses, like ether',

The *Upāyahṛdaya* describes the very same two refutations (as numbers 11 and 12) and names them with the same two terms. The author of the *Nyāya Sūtra* does not mention the source for these two futile rejoinders but it is no doubt from a Buddhist source. The author of these futile rejoinders is in effect arguing that the reason in a proof with a proposition like 'the self is permanent' cannot successfully establish its proposition because if it did then such a proposition would be true. And if this proposition is true then the opponent's ontological

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[1] *Nyāya Sūtra* (5.1.7-8), trans. Jhā 1915-19, **4**, 255-259.

views regarding the self would be correct, i.e. the self would exist and be permanent. But, according to the Buddhists, the opponent's ontological views would make it impossible for any cause to produce an effect, and thus it would be impossible for the reason to cause the establishment of the proposition. Given that the process of establishing a proposition is possible, the opponent's ontological views must be incorrect. Since an incorrect proposition cannot be established, the reason cannot establish a proposition like 'the self is permanent'. Thus, these two rejoinders argue that the reason would fail to establish the proposition if the proposition were correct.

According to the Buddhist author of these two rejoinders, those who argue that the self exists do so because they hold that every existent thing has an objective reality that is totally independent of every other thing. Thus, the reason and the proposition would be real objects totally independent of one another. If such a reason is to establish its proposition then it must do so either by connecting with the proposition in some way, or else establish the proposition without connecting with its proposition.

The ninth futile rejoinder argues that if the reason establishes the proposition by connecting with it then the reason would become indistinguishable from the proposition. If the reason and proposition are completely unified then there would be no distinction between the reason which establishes and the proposition which is established. With no distinction between these two in the mind of the person who doubts the proposition, the reason could not function to establish the proposition for this person.

The tenth futile rejoinder argues against the other alternative. That is, if the reason establishes the proposition without connecting with it then the reason and proposition would be completely separate from one another. But then there could be no interaction between the reason which establishes and the proposition which is established. Without any interaction between these two, the reason would fail in its function of establishing the proposition, just as (the light of) a lamp fails to reveal an object (in the dark) if it does not connect with the object.

The *Nyāya Sūtra* gives a separate reply to each of these rejoinders. In reply to the first rejoinder, the *Nyāya Sūtra* argues that when the reason and proposition are connected it does not mean that they become indistinguishable from one another. For instance, the parts of a pot are united in a pot but this does not mean that each part merges indistinguishably with the other. The bowl of the pot remains distinct from the neck even though both are united within a

single object. Similarly, when the reason and proposition are connected they do not lose their individual characteristics. Thus, the reason would not lose its ability to establish the proposition when it is connected with the proposition.

In reply to the second rejoinder, the *Nyāya Sūtra* argues that when two properties are not connected it does not mean that they cannot interact with one another. For instance, a magic spell kills its victim without connecting with the victim. Similarly, when the reason and the proposition are not connected they nevertheless still interact with one another. Thus the reason does not fail to establish the proposition when it is not connected with the proposition.

Further, if these two rejoinders were successful, then they would establish the fact that cause and effect are impossible. But if cause and effect are impossible then it would be impossible for these two rejoinders to successfully establish their cases. Thus, these two rejoinders are futile. The reason is the cause which produces the effect of an established proposition. The reason is required in a proof since there could be no establishment of the proposition without the reason.

The next two futile rejoinders are:

11. Equivalent consequence (*prasaṅga-sama*)

12. Equivalent counter-example (*pratidṛṣṭānta-sama*)[1]

These two futile rejoinders argue that if a reason is required to establish the proposition by first establishing the presence of the property (specified in the proposition) in the example, and thereby establishing the presence of this same property in the subject, then either another reason would be required to establish the presence of the first reason in the example, or else the original reason could establish anything including the opposite of the proposition.

The eleventh futile rejoinder argues that if a second property (specified in the reason) is required in order to establish the presence of the first property (specified in the proposition) in an object (subject), then a third property would also be required to establish the presence of the second property in a second object (example), and so on infinitely. That is, in the proof, 'sound is impermanent, because of being a product, like a pot', the property 'being a product' is required to establish the presence of impermanence in an object like sound. But by the same reasoning, another property (second reason) would also be required to establish the presence

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[1] *Nyāya Sūtra* (5.1.9-11), trans. Jhā 1915-19, **4**, 259-264.

of being a product (first reason) in an object like a pot (example). This second reason would also require its own example. This would entail an infinite regress with each reason requiring yet another reason and its associated example which would mean that nothing would ever be established. Thus the original reason (being a product) does not establish the presence of the property (impermanence) in the original object, sound.

The *Nyāya Sūtra* replies to the eleventh rejoinder arguing that there is no need to have a second reason to establish the presence of the first reason in the example, and thus an infinite regress does not result. For instance, a lamp is required to see some object (in the dark), but there is no need for a second lamp in order to see the first lamp, since a lamp is something that can be seen without the aid of another. In the same way, an example is required in order to understand something that is not already known, i.e. the presence of a property (specified in the proposition) in the subject. However, a second reason is not required in order to understand something that is already known, i.e. the presence of the (first) reason in the example. This is because the example is something that both ordinary people and the learned alike know to be an illustration of the (first) reason. Thus, there is no need for another reason (and example) in order to establish the presence of the (first) reason in the (first) example. Thus the charge of an infinite regress is unfounded and the rejoinder is futile.

The twelfth rejoinder argues that the reason's establishing the presence of the property (specified in the proposition) in the example does not mean that the reason thereby also establishes the presence of the same property in the subject, because if it did then contradictory propositions could be established. For instance, in the proof, 'sound is impermanent, because of being produced by effort, like a pot', if the reason establishes impermanence in a pot and thereby establishes impermanence in sound, then this same reason could also establish the opposite proposition. That is, in the proof, 'sound is permanent, because of being produced by effort, like ether (in a hole dug in the ground)', the very same reason (being produced by effort) also establishes permanence in ether and must therefore also establish permanence in sound. Thus, the fact that the reason can establish the presence of the property (specified in the proposition) in an example does not mean that this same reason can also establish the presence of the same property in the subject.

The term used to name the twelfth futile rejoinder, equivalent counter-example (*pratidṛṣṭānta-sama*), is also found in the *Upāyahṛdaya*. It is used there to name a refutation (number 17) that appears to be similar to the twelfth futile rejoinder in the *Nyāya Sūtra*.

The *Nyāya Sūtra* replies to the twelfth rejoinder arguing that the counter-example proof presented in this rejoinder either successfully establishes its proposition or it does not. If the counter-example proof successfully establishes its proposition then the reason in the counter-example proof does in fact establish the presence of the property (specified in the proposition) in the example and thereby establishes its proposition. This is in complete agreement with the view propounded by the *Nyāya Sūtra* regarding the way a reason functions in a successful proof. Alternatively, if the counter-example proof does not successfully establish its proposition then the opponent has failed to provide any evidence to prove the Nyāya view incorrect. Thus, either the opponent has provided a proof that supports the Nyāya view, or the opponent has not provided a proof that disproves the Nyāya view. Either way the rejoinder is futile.

The next two futile rejoinders are:

13. Equivalence in non-generation (*anutpatti-sama*)[1]

14. Equivalence in doubt (*saṃśaya-sama*)[2]

These two rejoinders argue that even if the reason establishes the presence of the property (specified in the proposition) in the example, the reason still does not establish the presence of the same property in the subject either because the reason simply does not apply to the subject, or because the reason cannot remove all doubt concerning the subject.

The thirteenth rejoinder argues that the reason does not establish the proposition because it does not apply to the subject. For instance, in the proof, 'sound is impermanent, because of being produced by effort, like a pot', the subject (sound) comes into existence only after effort. Thus, before the effort that brings sound into existence, the basis for the property of being produced by effort does not exist. (At this time) the property of being produced by effort does not apply to the (non-existent) subject. Since the reason fails to apply to the subject, it also fails to establish the property of impermanence in the subject. Thus, the reason in this proof does not establish the proposition.

The term used to name the thirteenth futile rejoinder, equivalence in non-generation (*anutpatti-sama*), is also used in the *Upāyahṛdaya* to name a refutation (number 20) that is described in a slightly different way to the twelfth futile rejoinder in the *Nyāya Sūtra*.

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[1] *Nyāya Sūtra* (5.1.12-13), trans. Jhā 1915-19, 4, 264-268.

[2] *Nyāya Sūtra* (5.1.14-15), trans. Jhā 1915-19, 4, 268-270.

The *Nyāya Sūtra* replies to the thirteenth rejoinder arguing that the reason does in fact establish the proposition in this proof. That is, since sound is produced by effort, sound is sound (only) after its production. (At that time) the subject does exist and the reason, being produced by effort, does apply to the subject. Since the reason applies to the subject (when the subject exists), it does establish the presence of impermanence in sound, and thus the reason does establish the proposition.

The thirteenth futile rejoinder appears to be similar to a mis-timed reason (*kālātīta*), one of the fallacious reasons (*hetvābhāsa*) discussed in the *Nyāya Sūtra*. Vātsyāyana describes a mis-timed reason as one that does not apply to the subject because there is a temporal mismatch between the subject and the reason. When this same point is raised here as a fault, the author of the *Nyāya Sūtra* rejects it as futile, i.e. as not being a fault.

The fourteenth rejoinder argues that the reason does not establish the proposition because it can never completely eliminate all doubt concerning the subject. That is, there is always some property that the subject shares with objects that lack the property specified in the proposition, and thus there is always some grounds to doubt that the subject may not have the property in question. For instance, in the proof, 'sound is impermanent, because of being perceptible by the senses, like a pot', the reason is a property that exists in both impermanent and permanent objects. That is, according to the Nyāya, the sound universal exists together with sound. Both are objects of the auditory sense, but whereas sound is impermanent, the sound universal is not. Thus the reason is not able to completely eliminate all doubt concerning whether or not the subject is impermanent and consequently the reason is not able to establish the proposition.

The term used to name the fourteenth futile rejoinder, equivalence in doubt (*saṃśaya-sama*), occurs twice in the *Upāyahṛdaya*. First it is used to name a refutation that is described in the same way as the fourteenth futile rejoinder in the *Nyāya Sūtra*. Secondly it is used to name a fallacious reason, one that is similar to the grounds for doubting the proposition. Caraka also uses this term to name the same type of fallacious reason.[1]

The *Nyāya Sūtra* replies to the fourteenth rejoinder by arguing that the reason in a successful proof does in fact completely eliminate all doubt concerning the subject and thus it is able to establish the proposition. For instance, even though a post and a man share a

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[1] Term 36 in *Caraka Saṃhitā* (3.8.57), trans. Sharma 1981-94, **1**, 367.

property like standing erect, when a distant object is seen to have a property like movement (walking) which not shared with a post, then all doubt as to whether or not the object in question is a man is completely removed. Similarly, when sound is seen to have a property like being produced by effort,[1] which is not shared with permanent objects, then all doubt as to whether or not sound is impermanent is completely removed. The fact that sound continues to have a property (like being perceptible by the senses) that both impermanent and permanent objects share does not mean that this property continues to be a cause for doubt, for if it did then doubt could never be completely eliminated. Since doubt can be eliminated, a reason is able to successfully establish the proposition.

The next two futile rejoinders are:

15. Equivalence in vacillation (*prakaraṇa-sama*)[2]

16. Equivalence with a fallacious reason (*ahetu-sama*)[3]

These two rejoinders argue that even if the reason establishes the presence of the property (specified in the proposition) in the example, the reason still does not establish the presence of the same property in the subject, firstly because there is always some evidence to the contrary, and secondly because the reason fails to establish the proposition whether it exists before, after or at the same time as the proposition is established.

The fifteenth rejoinder argues that if one reason is countered by another then neither reason establishes its proposition because there is always vacillation between the two. For instance, in the proof, 'sound is impermanent, because of being produced by effort, like a pot', the reason provides evidence supporting the proposition that sound is impermanent, whereas in the proof, 'sound is impermanent, because of being perceptible by the senses, like a pot', the reason provides evidence (both for and) against this same proposition (see previous futile rejoinder). The effect of the evidence supporting the proposition in the first proof is neutralised by the effect of the evidence against the same proposition in the second proof. Since there is vacillation between these two reasons, the reason (supporting the proposition) in the first proof is not able to successfully establish the proposition that sound is impermanent.

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[1] Note that 'being produced by effort' is not the reason in the original rejoinder, that reason was 'being perceptible by the senses'.

[2] *Nyāya Sūtra* (5.1.16-17), trans. Jhā 1915-19, **4**, 270-273.

[3] *Nyāya Sūtra* (5.1.18-20), trans. Jhā 1915-19, **4**, 273-276.

The term used to name the fifteenth futile rejoinder, equivalence in vacillation (*prakaraṇa-sama*), is also used in the *Nyāya Sūtra* to name one of the fallacious reasons (number 3 above), although this fallacious reason is described as one that simply denies the contrary position rather than one where there is vacillation between two alternatives. The *Upāyahṛdaya* also uses this term to name a fallacious reason, one that is described in much the same way as it is described in the *Nyāya Sūtra*. Caraka uses the same term to name the first of his three fallacious reasons.[1] Caraka's description of this fallacious reason is the same as in the *Upāyahṛdaya* and they both use practically the same example.

The *Nyāya Sūtra* replies to the fifteenth rejoinder arguing that the reason in a successful proof does establish its proposition even when there is another reason that provides some evidence against the same proposition. That is, the opponent who claims that there is vacillation between opposing reasons must accept that the reason supporting the proposition is as successful in providing evidence for its proposition as the reason against the same proposition is in providing evidence (both for and) against this same proposition. If one reason provided overwhelming evidence then there would be no cause for vacillation. But in accepting the admissibility of the reason supporting the proposition, the opponent cannot then consistently deny its admissibility. Thus, if the reason supporting the proposition is admissible then this reason does in fact successfully establish its proposition that sound is impermanent. This futile rejoinder is similar to the nineteenth, equivalence in evidence (*upapatti-sama*), discussed below.

The sixteenth futile rejoinder argues that the reason in a proof with a proposition like 'the self is permanent' cannot establish its proposition because if this proposition is true then the ontological theory that negates the possibility of cause and effect would also be true. This same point is also found in the *Upāyahṛdaya* (as number 10) where it is called 'equivalence in time' (*kāla-sama*). The *Upāyahṛdaya* also describes two other refutations along with the equivalence in time refutation (numbers 11 and 12). Those two refutations appear in the *Nyāya Sūtra* as futile rejoinders 9 and 10 (above). The sixteenth futile rejoinder argues that the reason (with an ontological status implied by the truth of the proposition) could not establish its proposition because there is no point in time at which such a reason could cause the proposition to be established.

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[1] Term 36 in *Caraka Saṃhitā* (3.8.57), trans. Sharma 1981-94, 1, 367.

That is, an objectively real reason must exist either before, after or at the same time as the established proposition, but none of these options is possible. Firstly, if the reason existed before the proposition is established then at the time of establishment there would no longer be any reason in existence to establish the proposition. Secondly, if the reason exists after the proposition is established then at the time of establishment there would not yet be any reason in existence to establish the proposition. Finally, if the reason exists at the very same time as the proposition is established then, since the reason and the established proposition exist simultaneously, the reason could not be the cause of establishment. Thus, an objectively real reason does not establish the proposition.

The *Nyāya Sūtra* replies to the sixteenth rejoinder arguing that the reason in a successful proof exists before the proposition is established. That is, establishing the presence of the property (specified in the proposition) in the subject, just like knowing the presence of this property in the subject, is caused by the reason. The reason establishes the presence of the property in the subject for the person who doubts the proposition and in this way causes this person to know that the subject has the property in question. The reason does this before the property has been established as being present in the subject. At that time the proposition does not exist as established, but it does exist as the proposition to be established. Further, if the opponent argues that this is impossible then the opponent's own argument against this position would be equally impossible since it would suffer from the same fault. If the opponent's reason can establish its proposition then a reason in a successful proof does in fact establish its proposition, and thus the refutation is futile.

**Futile rejoinders related to the subject (17-24)**

The following eight futile rejoinders are related to the subject in the proposition. The first of these is called:

17. Equivalent implication (*arthāpatti-sama*)[1]

This futile rejoinder argues that the proof, 'sound is impermanent because of being produced by effort, like a pot,' implies that sound is permanent, because of being intangible, like ether. That is, the statement that a subject has some property because of its likeness to one thing implies that this subject also has the another (opposite) property because of its likeness to another thing, even though it was not expressly stated in the original statement.

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[1] *Nyāya Sūtra* (5.1.21-22), trans. Jhā 1915-19, 4, 276-278.

The author of the *Nyāya Sūtra* replies that if the latter statement follows by implication from the former statement even though it is not expressly stated, then it is equally true that the former statement would also follow by implication from the latter statement even though it is not expressly stated. Since implications are not restricted to just one alternative, they are inconclusive. Further, the negative of a statement does not follow by implication. For instance, the fact that solid rocks fall downwards does not imply that something not solid like (liquid) water would fall upwards. Thus the rejoinder is futile.

18. Equivalence in no difference (*aviśeṣa-sama*)[1]

This rejoinder is like the first futile rejoinder, equivalence in similarity (*sādharmya-sama*) (discussed above). The first futile rejoinder argued that if the example needs only to share a property (specified in the reason) with the subject in order to be like the subject then (permanent) ether would be like (impermanent) sound since ether shares the property of intangibility with sound. In response to this rejoinder, the author of the *Nyāya Sūtra* argued that in order for the example to be like the subject they must share an essential property, not just any property.

Here in the eighteenth futile rejoinder the opponent argues that if the subject is similar to the example simply because it shares a property (reason) with the example, then the subject would be similar to everything since the subject shares the property of existence with all things. Thus, it follows that all things are impermanent because of existing, like a pot.

The *Nyāya Sūtra* replies that in the proof, 'sound is impermanent, because of being produced by effort, like a pot', the subject is known to share a property with a pot, i.e. the property of being produced by effort. This similarity provides the grounds to conclude that these two objects are similar in another respect also, i.e. in terms of being impermanent. The fact that two objects share the property of existence does not provide the grounds to conclude that these two objects are therefore similar because for two objects to be similar they must be similar in some respect. That is, they must share some property and not others. Similarity cannot be established on the basis of sharing the property of existence because there is no property that existent things do not possess. Thus, the proof 'all things are impermanent, because of being existent, like a pot', does not establish its proposition because all things are not similar to a pot in any respect. If it is claimed that they are similar in terms of being

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[1] *Nyāya Sūtra* (5.1.23-24), trans. Jhā 1915-19, 4, 278-281.

impermanent then, since sound is one of all things, it would follow that sound is impermanent. Either way the rejoinder is futile.[1]

The next futile rejoinder is:

19. Equivalence in evidence (*upapatti-sama*)[2]

This rejoinder is like the fifteenth futile rejoinder, equivalence in vacillation (*prakaraṇa-sama*) (discussed above). The fifteenth rejoinder argued that if there are reasons both for and against a proposition then there would always be vacillation between the two and as a consequence, neither reason would establish its proposition. In response to this rejoinder, the author of the *Nyāya Sūtra* argued that if the reason supporting the proposition is admissible then this reason does in fact successfully establish its proposition even when there is another reason which provides some evidence against the same proposition.

Here in the nineteenth futile rejoinder the opponent argues that the subject in the proof, 'sound is impermanent, because of being produced by effort, like a pot', possesses the properties of being a product, which is evidence for sound being impermanent, but it also possesses the property of being intangible, which is evidence against sound being impermanent. Since the subject possesses properties that both support and count against its being impermanent, the proposition in this proof is not established.

The author of the *Nyāya Sūtra* replies that when the opponent accepted that the subject possesses the property which is evidence for its being impermanent then the opponent admitted that there are adequate grounds for the proposition to be successfully established. Having accepted this, the opponent cannot then deny these same grounds. If the subject possesses the property which is evidence for its being impermanent then this proposition is successfully established even though there is some evidence to the contrary. Thus the rejoinder is futile.

The next futile rejoinder is called:

20. Equivalence in apprehension (*upalabdhi-sama*)[3]

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[1] See also futile rejoinder 22, equivalence in impermanence (*anitya-sama*) below.

[2] *Nyāya Sūtra* (5.1.25-26), trans. Jhā 1915-19, **4**, 281-283.

[3] *Nyāya Sūtra* (5.1.27-28), trans. Jhā 1915-19, **4**, 283-286.

This rejoinder argues that the subject in the proof, 'sound is impermanent, because of being produced by effort, like a pot', is not totally included in the reason. That is, some sound is produced by effort, but some sound is not, e.g. the sound of tree branches breaking in the wind is not produced by effort. Since the reason in a successful proof must apply to all of the subject and not to just some of the subject, the proposition in this proof is not established.

The author of the *Nyāya Sūtra* replies that 'produced by effort' does not mean produced by human effort, rather it means produced by a cause. Since all sounds are produced by causes, all sounds are produced by effort. Since the subject in this proof is completely included in the reason, the rejoinder is futile.

The next futile rejoinder is called:

21. Equivalence in non-apprehension (*anupalabdhi-sama*)[1]

This futile rejoinder attempts to defend the view that sound is permanent (eternal) by claiming that sound exists even before it is made. The reason sound is not heard before it is made is because of the presence of an obstruction. The *Nyāya Sūtra* rejects this view and argues instead that if an object is not apprehended (in some situation) then this object does not exist (in that situation). An exception is when there is no apprehension (of something) because of the presence of an obstruction, e.g. underground water is not apprehended due to the presence of an obstruction (the ground). In this situation the ground that is obstructing the apprehension of the water is apprehended. However, in the case of sound not being apprehended before it is made, there is no obstruction because if any such obstruction were present it would be apprehended, and there is no such apprehension (of any obstruction). Thus, if sound existed before it was made then it would be heard. Sound is not heard before it is made and there is no reason for it not to be heard. Thus, no sound exists before it is made.

The opponent defends their view by arguing that the obstruction to apprehending sound before it is made does in fact exist because there is no evidence for the absence of such an obstruction. The evidence that the *Nyāya Sūtra* presents, i.e. the non-apprehension of any such obstruction, is no evidence at all because there is no non-apprehension of an obstruction. The reason that the non-apprehension of an obstruction does not exist is because this non-apprehension is itself not apprehended. Since this non-apprehension is not apprehended it does not exist and thus there is no evidence that the obstruction does not exist. Since there is

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[1] *Nyāya Sūtra* (5.1.29-31), trans. Jhā 1915-19, 4, 286-290.

no evidence for it not existing, this obstruction must in fact exist. This obstruction is what prevents the apprehension of sound before it is made and thus sound exists always even before it is made. Therefore, sound is permanent.

The rejoinder supporting this argument is, 'the non-apprehension of the obstruction does not exist, because of not being apprehended, like the horn of a rabbit'. The reasoning here is that if the non-apprehension of an object establishes the non-existence of that object, then the non-apprehension of the non-apprehension of an obstruction would establish the non-existence of the non-apprehension of an obstruction. If the non-apprehension of an obstruction does not exist, then there is no evidence for the non-existence of the obstruction.

The author of the *Nyāya Sūtra* argues that the reason (not being apprehended) does not apply to this subject (the non-apprehension of the obstruction), i.e. non-apprehension does not apply to non-apprehension. That is, non-apprehension is the mere absence of an apprehension. Since this is simply the lack of an object, it is not an object of apprehension. The non-apprehension of an object negates the existence of the object, but the non-apprehension of the absence of an object does not negate the absence of an object and thereby establish its presence.

If not apprehending the non-apprehension (of an obstruction) could negate the existence of this non-apprehension (of an obstruction) then, similarly, since the non-apprehension of the non-apprehension (of an obstruction) is itself not apprehended, this non-apprehension would negate the effect of the previous non-apprehension and thereby reverse the effect of the previous non-apprehension, and so on endlessly.

Thus, the rejoinder that the non-apprehension of an obstruction does not exist because it is not apprehended, is futile. The fact that there is no apprehension of an obstruction is known to the person who does not apprehend an obstruction. When an obstruction is not apprehended then that non-apprehension is an acceptable reason to establish the absence of the obstruction. But it is not acceptable to repeat this process on the absence of apprehension.

The next futile rejoinder is called:

22. Equivalence in impermanence (*anitya-sama*)[1]

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[1] *Nyāya Sūtra* (5.1.32-34), trans. Jhā 1915-19, **4**, 291-295.

This futile rejoinder raises an objection similar to the one raised in the first rejoinder, equivalence in similarity (*sādharmya-sama*), and in the eighteenth rejoinder, equivalence in no difference (*aviśeṣa-sama*). That is, in the proof, 'sound is impermanent, because of being produced, like a pot', it is argued that the subject is established as impermanent because of its similarity with the example. But if this is acceptable then the proposition that all things are impermanent would also be established in the proof, 'all things are impermanent, because of being similar to a pot, like a pillar', since all things share the property of existence with a pot. But all things are not impermanent. Ether for example is not impermanent. Thus the original proof that claims to establish its proposition on the basis that the subject is similar to the example is not acceptable.

The author of the *Nyāya Sūtra* gives different reasons for why such rejoinders are futile. The reason in the first rejoinder is that in order for the example to be like the subject they must share an essential property, not just any property. The reason in the eighteenth rejoinder is that similarity cannot be established on the basis of sharing the property of existence. Here in this rejoinder the author of the *Nyāya Sūtra* argues that if similarity is unacceptable as the basis upon which to conclude that the subject has the property in question then the similarity between the proof that the opponent wishes to reject and the proof used to show why this proof must be rejected would likewise be an unacceptable basis upon which to conclude that the original proof must be rejected. That is, the opponent relies upon similarity in order to prove that similarity is not to be relied upon.

Further, it is not just similarity between the subject and the example that is relied upon in order to establish the proposition. That is, what provides the basis upon which to establish that the subject has the property in question is the fact that both the subject and example possess a property (specified in the reason) that is a reliable indicator of the property in the proposition. Since this property (being produced) is shared by the subject (sound) and the similar example (a pot) there is similarity involved in the proof. However, there is also dissimilarity involved in the proof since this property (being produced) is not shared by the subject (sound) and dissimilar example (ether). This dissimilarity is also used to establish the proposition. Thus the proposition in a proof is not established simply on the basis of similarity, and consequently the rejoinder is futile.

The next futile rejoinder is called:

23. Equivalence in permanence (*nitya-sama*)[1]

This rejoinder argues that the subject in the proof, 'sound is impermanent, because of being produced, like a pot', must be permanent (eternal). That is, if sound is impermanent then this property of impermanence must either be or not be in sound all of the time. If impermanence is in sound at all times then this property must be a permanent property of sound. But then sound would be permanent because if a property is ever-lasting then the thing to which the property belongs must also be everlasting (permanent). Alternatively, if impermanence is not in sound at all times, then at some time it must be absent from sound. But then sound would be permanent since it would lack the property of impermanence at some time. Either way, sound must be permanent.

The *Nyāya Sūtra* rejects this rejoinder as nonsensical because when the opponent argues that the impermanence of sound is always present in sound then the opponent has accepted that sound is impermanent. Alternatively, when the opponent argues that the impermanence of sound is sometimes present in sound then again the opponent has accepted that sound is impermanent. Given these admissions, the opponent's claim that sound must be permanent is inconsistent. Further, impermanence means destruction after production, and thus it makes no sense to ask whether or not sound is permanently impermanent. Thus, the rejoinder is futile.

This debate concerns the meaning of the term impermanent and is not strictly concerned with logical issues that relate to proofs.

The final futile rejoinder is called:

24. Equivalent effect (*kārya-sama*)[2]

This futile rejoinder argues that the reason in the proof, 'sound is impermanent, because of being produced by effort, like a pot', can be understood in two ways. First, it can mean that something not previously existing is caused to come into existence, e.g. like making a pot. Secondly, it can mean that something previously existing is made manifest by removing some obstruction that was concealing it, e.g. like drawing water from a well. Since there is no way

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[1] *Nyāya Sūtra* (5.1.35-36), trans. Jhā 1915-19, **4**, 295-299.

[2] *Nyāya Sūtra* (5.1.37-38), trans. Jhā 1915-19, **4**, 299-302.

of knowing which of these two meanings applies in the present case, the proof does not successfully establish its proposition.

The *Nyāya Sūtra* replies that in the case of sound, the meaning of being produced by effort is that of something not previously existing being caused to come into existence. The other meaning of being produced by effort does not apply to sound because sound is not apprehended before it is produced, nor is any obstruction to sound's being heard apprehended (as described above in the equivalence in non-apprehension, number 21). Thus the rejoinder is futile.

This rejoinder is concerned with the meaning of the reason and not about the requirements of a proof. The same term is found in the *Upāyahṛdaya* (as number 7) equivalent effect (*kārya-sama*), although the type of refutation is completely different.

At the end of the list of twenty-four futile rejoinders, the *Nyāya Sūtra* briefly discusses six steps (*ṣaṭpakṣī*) of a futile discussion (*kathābhāsa*).[1] This type of debate is inconclusive and without merit.[2] Solomon notes that the same six steps of futile discussion are also mentioned in the *Upāyahṛdaya*.[3] Śāstri claims that this short section has nothing to do with futile rejoinders and seems to an addition.[4]

## 6.2.8   Points of defeat (term 16)

The sixteenth term is point of defeat (*nigraha-sthāna*), also translated as clincher. This term is discussed in two places in the *Nyāya Sūtra*. The first chapter contains a brief description of points of defeat and the fifth chapter contains a list of 22 such points. The first chapter describes a point of defeat as occurring whenever there is misunderstanding (*vipratipatti*) or no understanding (*apratipatti*) by either party in a debate.[5] These points of defeat define the circumstances in which a debate is lost. That is, if either party commits any of the faults listed in the 22 points of defeat then the debate ends and victory is handed to the other party.

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[1] *Nyāya Sūtra* (5.1.39-43), trans. Jhā 1915-19, **4**, 302-308.

[2] See Vidyābhūṣaṇa 1920, 81-84; Randle 1930, 368-371; Warder 1971, 137; and Potter 1965-99, **2**, 272.

[3] Solomon 1976-78, **1**, 351.

[4] Śāstri 1905a, 246.

[5] *Nyāya Sūtra* (1.2.19), trans. Jhā 1915-19, **1**, 537-538.

The *Nyāya Sūtra* says at the end of chapter one only that there are various points of defeat without indicating exactly how the term should be subdivided.[1] The examples of the 22 points of defeat listed in chapter five appear to be simply various examples rather than a specific example illustrating each different subdivision of points of defeat. The list of points of defeat is similar in this respect to the list of futile rejoinders. That is, both lists appear to be simply lists of examples rather than subdivisions of each term. This is in contrast to the way terms are subdivided in the first chapter.

Approximately 20 points of defeat are listed in the *Upāyahṛdaya*. Half of these appear in the *Nyāya Sūtra* as points of defeat.[2] The *Caraka Saṃhitā* lists 15 points of defeat.[3] Two thirds of the points of defeat listed in the *Nyāya Sūtra* are also found in the *Caraka Saṃhitā*. Six points of defeat in the *Caraka Saṃhitā* appear in the *Nyāya Sūtra* with the same name and described in the same way.[4] Six other points of defeat in the *Caraka Saṃhitā* are described in the same way in the *Nyāya Sūtra*, but they are given different names.[5] One of the terms from Caraka's list of points of defeat, i.e. abandoning the proposition (*pratijñā-hāni*), appears in the *Nyāya Sūtra* but it is described differently, and one of the terms in the list of points of defeat in the *Nyāya Sūtra*, i.e. incoherent speech (*apārthaka*), appears in the *Caraka Saṃhitā* with the same description but Caraka does not include this term in his list of points of defeat.[6]

There are 22 points of defeat listed in the second part of chapter five. These are described in a number of modern publications.[7] Terms that have counterparts in the *Caraka Saṃhitā* and the *Upāyhṛdaya* are mentioned as they occur in the *Nyāya Sūtra*. The list is not divided into sections in the *Nyāya Sūtra*, although some commentaries arrange them into six groups.

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[1] *Nyāya Sūtra* (1.2.20), trans. Jhā 1915-19, **1**, 538-540.

[2] Points of defeat 4, 5, 6, 12, 13, 14, 15, 16, 17, 18, and 19 in the *Upāyahṛdara* appear in the *Nyāya Sūtra* as 16, 15, 8, 8, 11, 12, 7, 10, 13, 3, and 4, respectively.

[3] Term 44 in *Caraka Saṃhitā* (3.8.65), trans. Sharma 1981-94, **1**, 368-369.

[4] Points of defeat 8, 9, 11, 12, 14 and 15 in the *Caraka Saṃhitā* appear in the *Nyāya Sūtra* as 11, 12, 7, 13, 5 and 6, respectively.

[5] Points of defeat 1, 4, 5, 6, 7 and 13 in the *Caraka Saṃhitā* appear in the *Nyāya Sūtra* as 8, 4, 18, 10, 22 and 3, respectively.

[6] See term 33 in *Caraka Saṃhitā* (3.8.54), trans. Sharma 1981-94, **1**, 365-366.

[7] See for instance: Stothert 1867-70, 214-216; Vidyābhūṣaṇa 1920, 84-90; Radhakrishnan, Moore 1957, 377-379; Potter, ed. 1965-99, **2**, 272-274; Solomon 1976-78, **1**, 209-245; Gokhale 1992, 169-179; and Matilal 1998, 81-86.

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These groups focus on:

1. the members of a proof (1-5)

2. ways of expressing information (6-9)

3. ways of presenting the proof (10-13)

4. answering questions (14-17)

5. procedure of a debate (18-20)

6. faulty reasoning (21-22)

## Points related to the members of a proof (1-5)

The first five points focus on faults concerning the five members of a proof.

### 1. Abandoning the proposition (*pratijñā-hāni*)[1]

To give up the original proposition by admitting that the opposite property is present in the (similar) example. For instance, arguing that 'sound is impermanent, because of being perceivable by the senses, like a pot' and then admitting (under pressure from an opponent) that a pot is permanent. This admission is incompatible with the original position, although it is not an explicit denial of the original proposition (as in number 4 below). Caraka describes abandoning the proposition as an explicit denial of the original proposition,[2] and also lists this term as one of the points of defeat.

### 2. Modifying the proposition (*pratijñāntara*)[3]

To change the original proposition by qualifying the property in the proposition. For instance, arguing that 'sound is impermanent, because of being perceivable by the senses, like a pot' and then, when an opponent points out that a universal (*sāmānya*) is perceivable by the senses and it is not impermanent, the defendant qualifies the property in the proposition in order to ensure that the reason is conclusive. That is, the defendant claims that a universal is all-pervading whereas sound is not, and thus amongst things that are not all-pervading, 'being perceivable by the senses' is a conclusive reason to establish that something is impermanent. By qualifying the property in the proposition with the property of not being all-pervading, the defendant has effectively modified the original proposition. This original proposition was

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[1] *Nyāya Sūtra* (5.2.2), trans. Jhā 1915-19, **4**, 533-317.

[2] Term 40 in *Caraka Saṃhitā* (3.8.61), trans. Sharma 1981-94, **1**, 368.

[3] *Nyāya Sūtra* (5.2.3), trans. Jhā 1915-19, **4**, 317-319.

'sound is impermanent' whereas the new proposition is 'sound is amongst things that are not all-pervading and is impermanent'.

### 3. Contradicting the proposition (*pratijñā-virodha*)[1]

To present a reason that counts against the proposition. For instance, in the proof 'substance is distinct from its qualities, because only qualities are apprehended', the reason counts against the proposition rather than supporting it (see number 21 below). The *Upāyahṛdaya* lists the same term as a point of defeat (number 18) and describes it in the same way. Caraka describes a similar term, contradictory speech (*viruddha*), under defective speech as an inconsistent statement,[2] and he also lists this term as one of the points of defeat.

### 4. Renouncing the proposition (*pratijñā-sannyāsa*)[3]

To give up the original proposition by explicitly denying that position. For instance, arguing that 'sound is impermanent, because of being perceivable by the senses, like a pot' and then (under pressure from an opponent) retracting the original position and asking: "Who says sound is impermanent?" The *Upāyahṛdaya* lists the same term as a point of defeat (number 19) and describes it in the same way. Caraka does not mention this term, but he describes abandoning the proposition (*pratijñā-hāni*) (number 1 above) as the explicit denial of the original proposition.

### 5. Modifying the reason (*hetvantara*)[4]

To change a reason by adding a qualification. For instance, arguing that 'everything manifest has a single origin (*prakṛti*), because of having a definite magnitude, like a pot', i.e. just as a pot has the same magnitude (mass) as the clay from which it was made. Then, when an opponent points out that the reason is inconclusive because things having a definite magnitude can have either a single or multiple origins, the defendant qualifies the reason in order to ensure that it is conclusive. This new reason is 'because of having a definite magnitude while still having the same original substance'. Caraka describes the term

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[1] *Nyāya Sūtra* (5.2.4), trans. Jhā 1915-19, **4**, 319-321.

[2] Term 33 in *Caraka Saṃhitā* (3.8.54), trans. Sharma 1981-94, **1**, 365-366.

[3] *Nyāya Sūtra* (5.2.5), trans. Jhā 1915-19, **4**, 321-322.

[4] *Nyāya Sūtra* (5.2.6), trans. Jhā 1915-19, **4**, 322-324.

*hetvantara*, not as modifying the reason, but simply as giving an incorrect reason,[1] and also lists this term as one of the points of defeat.

## Points related to expressions (6-9)

The next four points focus on faulty ways of expressing information in a debate.

### 6. Irrelevant statement (*arthāntara*)[2]

To make a statement that is not related to the point of the debate. For instance, one party may attempt to change the topic and discuss an unrelated issue like the grammatical distinctions of the words used in the proof, thereby diverting the debate away from the point at issue. Caraka describes irrelevant statement in the same way,[3] and also lists this term as one of the points of defeat.

### 7. Meaningless speech (*nirarthaka*)[4]

To use a string of syllables making no sense. For instance, reciting the letters of the alphabet as the reason for why sound is permanent (note number 9 below). The *Upāyahṛdaya* lists the same term as a point of defeat (number 15) but without a description. Caraka describes another similar term, meaningless speech (*anarthaka*), under defective speech as a string of syllables making no sense,[5] and also lists this term as one of the points of defeat.

### 8. Incomprehensible statement (*avijñātārthaka*)[6]

To say things that cannot be understood even when stated three times. This occurs when one party makes a statement that is not understood by the opponent or by the members of the audience even after it has been stated three times. For instance, the statement may be uttered very quickly or use words in a non-standard way. When the incomprehensible statement is made for the third time, it is taken to be a deliberate attempt to hide a weakness in reasoning (see also number 15 below). The *Upāyhṛdaya* lists this same fault twice in its list of points of defeat. It is listed once as making a statement that cannot be understood by others even though it has been explained three times (number 6) and again as speaking so quickly that others do

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[1] Term 42 in *Caraka Saṃhitā* (3.8.63), trans. Sharma 1981-94, **1**, 368.

[2] *Nyāya Sūtra* (5.2.7), trans. Jhā 1915-19, **4**, 324-325.

[3] Term 43 in *Caraka Saṃhitā* (3.8.64), trans. Sharma 1981-94, **1**, 368.

[4] *Nyāya Sūtra* (5.2.8), trans. Jhā 1915-19, **4**, 325-326.

[5] Term 33 in *Caraka Saṃhitā* (3.8.54), trans. Sharma 1981-94, **1**, 365-366.

[6] *Nyāya Sūtra* (5.2.9), trans. Jhā 1915-19, **4**, 326-327.

not understand (number 12). Caraka describes this same point as the first of his points of defeat, i.e. saying things that cannot be understood even if stated three times.

### 9. Incoherent speech (apārthaka)[1]

To use words or phrases with no syntactic connection with one another. For instance, stating a list of words or phrases that are individually meaningful but collectively do not form a coherent statement because they lack the necessary syntactic relationship with one another. The difference between this term and meaningless speech (number 7 above) is that these words are individually meaningful whereas meaningless speech is simply syllables without any meaning. Caraka describes incoherence under defective speech as a disordered string of unrelated but otherwise meaningful words,[2] but unlike the other four types of defective speech, he does not list incoherence as a point of defeat.

## Points related to presentation (10-13)

The next four points focus on faults in the presentation of an argument.

### 10. Mis-timed proof (aprāpta-kāla)[3]

To present the members of a proof in the incorrect order. The correct order for the five members of a proof is: proposition, reason, example, application and conclusion. When this order is changed the proof does not form a coherent argument. This description appears to be the same as one that Vātsyāyana rejects when discussing mis-timed reason (kālātīta) (see above). The Upāyahṛdaya lists the same term as a point of defeat (number 16) but without a description. Caraka describes a similar term, delayed statement (atītakāla), as a statement presented after the appropriate moment for its use has elapsed,[4] but does not list this as a point of defeat. Caraka lists another term, mis-timed statement (kālātīta-vacana), as a point of defeat but without a description.

### 11. Incompleteness (nyūna)[5]

To omit relevant information in a debate. That is, all five members are required in a proof and if any member is omitted then the proof is incomplete. There is no mention here

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[1] Nyāya Sūtra (5.2.10), trans. Jhā 1915-19, **4**, 327-328.

[2] Term 33 in Caraka Saṃhitā (3.8.54), trans. Sharma 1981-94, **1**, 365-366.

[3] Nyāya Sūtra (5.2.11), trans. Jhā 1915-19, **4**, 328-330.

[4] Term 37 in Caraka Saṃhitā (3.8.58), trans. Sharma 1981-94, **1**, 367-368.

[5] Nyāya Sūtra (5.2.12), trans. Jhā 1915-19, **4**, 330-331.

whether both the similar and dissimilar examples are required, or whether either example alone is sufficient (see following point). The *Upāyahṛdaya* lists the same term as a point of defeat (number 13) but without a description. Caraka describes incompleteness (under defective speech) as omitting any of the five parts of a proof, or providing only one reason when many are required,[1] and he also lists this term as one of the points of defeat.

### 12. Redundancy (*adhika*)[2]

To include irrelevant information in a debate. This is the opposite of incompleteness. This occurs whenever any members of a proof are repeated. The *Upāyahṛdaya* lists the same term as a point of defeat (number 14) but without a description. Caraka describes redundancy (under defective speech) as including information not relevant to the debate, or even when relevant, repeating the same sense with different words or repeating the same words,[3] and he also lists this term as one of the points of defeat.

### 13. Repetition (*punarukta*)[4]

To repeat words without reason. This occurs when the same words or meanings are repeated in a proof without any justification. One such justification is when the proposition is re-stated in the conclusion. This is not a fault since it is done for emphasis.[5] The *Upāyahṛdaya* lists the same term as a point of defeat (number 17) but without a description. Caraka lists this term as one of the points of defeat, also without a description.

## Points related to answering (14-17)

The next four points concern faults that prevent an opponent from correctly answering questions in a debate.

### 14. Non-restatement (*ananubhāṣaṇa*)[6]

To not restate the position. It was apparently a requirement that the opponent repeat the position stated by the defendant at the beginning of a debate to demonstrate that the point at issue had been correctly understood. If the opponent is unable to do this even though the

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[1] Term 33 in *Caraka Saṃhitā* (3.8.54), trans. Sharma 1981-94, **1**, 365-366.

[2] *Nyāya Sūtra* (5.2.13), trans. Jhā 1915-19, **4**, 331-333.

[3] Term 33 in *Caraka Saṃhitā* (3.8.54), trans. Sharma 1981-94, **1**, 365-366.

[4] *Nyāya Sūtra* (5.2.14-15), trans. Jhā 1915-19, **4**, 333-335.

[5] See *Nyāya Sūtra* (1.1.39), trans. Jhā 1915-19, **1**, 398-405.

[6] *Nyāya Sūtra* (5.2.16), trans. Jhā 1915-19, **4**, 335-336.

defendant has stated the position three times and the members of the audience have understood it, then the opponent forfeits the debate.

### 15. Failure to comprehend (*ajñāna*)[1]

To not understand the position. This occurs when one party makes a statement that is understood by the members of the audience but not by the opponent even after it has been stated three times. If no members of the audience understand the statement then it is a case of incomprehensible statement (number 8 above), but if the audience understands the statement while the opponent does not, then it is a case of failure to comprehend. The *Upāyahṛdaya* lists this same fault as its fifth point of defeat.

### 16. Lack of inspiration (*apratibhā*)[2]

Being unable to find a suitable reply. This occurs when the opponent cannot think of an appropriate reason to refute an opponent's position and simply remains silent. The *Upāyahṛdaya* describes a similar point of defeat (number 4) as the inability to answer a question that should be answered.

### 17. Evasion (*vikṣepa*)[3]

To avoid answering. This occurs when an opponent finds some excuse to break off the debate, claiming for instance that urgent business calls them away.

## Points related to procedure (18-20)

The next three points concern faults in the procedure of a debate.

### 18. Conceding a charge (*matānujñā*)[4]

To admit to a fault. This occurs when one party, rather than defending their own position against a charge, claims that their opponent also suffers from the same fault. This amounts to an admission that their position has the fault in question. Caraka describes a similar term, admission (*abhyanujñā*), as conceding an opponent's position,[5] and he also lists this term as one of the points of defeat.

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[1] *Nyāya Sūtra* (5.2.17), trans. Jhā 1915-19, **4**, 337.

[2] *Nyāya Sūtra* (5.2.18), trans. Jhā 1915-19, **4**, 337.

[3] *Nyāya Sūtra* (5.2.19), trans. Jhā 1915-19, **4**, 337-338.

[4] *Nyāya Sūtra* (5.2.20), trans. Jhā 1915-19, **4**, 338-340.

[5] Term 41 in *Caraka Saṃhitā* (3.8.62), trans. Sharma 1981-94, **1**, 368.

19. Overlooking the censurable (*paryanuyojya-upeksana*)[1]

This occurs when one party fails to point out that their opponent has committed an error that constitutes a point of defeat, i.e. a reason to lose the debate.

20. Censuring the non-censurable (*niranuyojya-anuyoga*)[2]

This occurs when one party incorrectly claims that their opponent has committed an error that constitutes a point of defeat, i.e. a reason to lose the debate.

## Points related to reasoning (21-22)

The final two points concern faults in reasoning.

21. Inconsistency (*apasiddhānta*)[3]

This occurs when one party accepts a position that is contrary to their own theory. This fault is different from contradicting the proposition (number 3 above) in that it involves a conflict between a particular position accepted by an opponent and the opponent's own tenets. Contradicting the proposition, on the other hand, occurs when the reason counts against the proposition in the very same proof.

22. Fallacious reason (*hetvābhāsa*)[4]

To use a faulty reason. The *Nyāya Sūtra* lists five fallacious reasons: inconclusive, contradictory, similar to the point at issue, similar to the proposition to be proved, and mis-timed reason.[5] The use of any of these five constitutes a point of defeat. The *Upāyahṛdaya* lists eight fallacious reasons, and Caraka lists three.[6] Caraka refers to fallacious reasons as fallacies (*ahetu*) and he lists them as a the point of defeat.

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[1] *Nyāya Sūtra* (5.2.21), trans. Jhā 1915-19, **4**, 340-341.

[2] *Nyāya Sūtra* (5.2.22), trans. Jhā 1915-19, **4**, 341-342.

[3] *Nyāya Sūtra* (5.2.23), trans. Jhā 1915-19, **4**, 342-343.

[4] *Nyāya Sūtra* (5.2.24), trans. Jhā 1915-19, **4**, 343-345.

[5] *Nyāya Sūtra* (1.2.5-9), trans. Jhā 1915-19, **1**, 496-521.

[6] Term 36 in *Caraka Saṃhitā* (3.8.57), trans. Sharma 1981-94, **1**, 367.

# 6.3 Early Indian logic

## 6.3.1 A common system of logic

The *Nyāya Sūtra* describes 16 main terms, all but one of which (number 2) have counterparts in the *Caraka Saṃhitā*. The corresponding terms from the *Caraka Saṃhitā* are listed on the right with the term numbered according to its place in the list of 44 terms.

| **Nyāya Sūtra** | **Caraka Saṃhitā** |
|---|---|
| 1. means of valid cognition (*pramāṇa*) | 18-21. (four types listed separately) |
| 2. object of valid cognition (*prameya*) | |
| 3. doubt (*saṃśaya*) | 22. doubt (*saṃśaya*) |
| 4. purpose (*prayojana*) | 23. purpose (*prayojana*) |
| 5. example (*dṛṣṭānta*) | 12. example (*dṛṣṭānta*) |
| 6. theory (*siddhānta*) | 16. theory (*siddhānta*) |
| 7. member (*avayava*) of a proof | 9. proof (*sthāpanā*) |
| 8. reasoning (*tarka*) | 25. inquiry (*jijñāsā*) |
| 9. decision (*nirṇaya*) | 26. resolution (*vyavasāya*) |
| 10. debate (*vāda*) | 1. debate (*vāda*) |
| 11. disputation (*jalpa*) | 1.1 positive debate (*jalpa*) |
| 12. wrangle (*vitaṇḍā*) | 1.2 negative debate (*vitaṇḍā*) |
| 13. fallacious reason (*hetvābhāsa*) | 36. fallacy (*ahetu*) |
| 14. equivocation (*chala*) | 35. equivocation (*chala*) |
| 15. futile rejoinder (*jāti*) | 15. rejoinder (*uttara*) |
| 16. points of defeat (*nigraha-sthāna*) | 44. points of defeat (*nigraha-sthāna*) |

Five of the terms in the *Nyāya Sūtra* (numbers 7-9, 13 and 15) correspond to slightly different terms in the *Caraka Saṃhitā*, but their respective descriptions are similar. The four means of valid cognition (*pramāṇa*) listed under the first term in the *Nyāya Sūtra* are all found in the *Caraka Saṃhitā* as independent terms. Two terms, *jalpa* and *vitaṇḍā*, have been translated slightly differently in the *Nyāya Sūtra* and the *Caraka Saṃhitā* to reflect the different ways these terms are understood in each work. There are over 70 more terms described as the subdivisions of the 16 main terms in *Nyāya Sūtra*. Approximately half of these are found in the *Caraka Saṃhitā*, often with similar descriptions, although not always classified in exactly the same ways.

Caraka appears to have taken what was then the current system of logic from some source and adapted it to suit the training of a physician. There is no evidence that the *Nyāya Sūtra* used Caraka's work as its source, but the similarities between these two works indicate that the *Nyāya Sūtra* is describing the same tradition as that found in the *Caraka Saṃhitā*.

Further, the similarities between the *Upāyahṛdaya* and the *Caraka Saṃhitā* make it clear that all three works follow the very same tradition of logic and debate. They all use similar terminology that is generally described in similar ways. Many of the refutations of a faulty proof presented in the *Upāyahṛdaya* have been answered in the *Nyāya Sūtra* in its discussion on futile rejoinders. Given this fact, as well as the relative degree of organisation in each work, the probable chronological order of these three works is first the *Caraka Saṃhitā*, followed by the *Upāyahṛdaya* and then the *Nyāya Sūtra* last. Each author follows a different philosophical tradition, but their respective descriptions of logical terminology employed in debate are mostly the same.

## 6.3.2   Origin of the five-part proof

The system of logic found in the *Caraka Saṃhitā*, the *Upāyahṛdaya* and the *Nyāya Sūtra* is closely connected with the ancient Indian tradition of debate. This tradition has a long history, one that stretches back to a period well before the Greeks first came to India.[1] Evidence for this is found in the (early) *Upaniṣads* that pre-date Buddhism. Early Buddhist works preserved in the Pāli Canon provide evidence for the continuation of this tradition of debate during the time of the Buddha. Other Buddhist works like the *Kathāvatthu* and the *Vijñānakāya* contain examples of the use of debate in the days after Greeks first arrived in India, but with no apparent influence from the Greeks.

The ancient system of debate used arguments with ten steps which were later reduced to five. The five-membered proof is often compared with the Greek syllogism. Vidyābhūṣaṇa argues that it actually came from Aristotle's *Art of Rhetoric*:

> The work of Aristotle of which we find a trace in this period is the Art of Rhetoric, which was evidently a favourite subject of study among the Indian Greeks, and from which the syllogism of five members as illustrated in the Caraka-saṃhitā, referred to above, seems to have been derived.[2]

Vidyābhūṣaṇa's claim that Indian logic was influenced by the Greeks calls for a three-staged entry of Aristotle's logic into India. According to McEvilley, the model proposed by Vidyābhūṣaṇa is incorrect, but perhaps the best that could be offered:

> To account for this development Vidyabhusana suggested a staged entry of Greek logic into India. First, he suggested, c.175–30 B.C., a few passages of Aristotle's *Rhetoric*

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[1] Jayatilleke 1963, 43-46; and McEvilley 2002, 408-409.

[2] Vidyābhūṣaṇa 1918, 486; repr. Vidyābhūṣaṇa 1920, 511-512.

arrived, passages conveying the basic idea of inference but without its formal exposition. A century or two later, the *Prior Analytics* was absorbed into the Indian tradition, and several centuries later still, the *Posterior Analytics*. Given the great differences between the Aristotelian and Naiyāyika syllogisms, this unwieldy model was perhaps the best that could be offered.[1]

The more likely source of influence, according to McEvilley, is the Epicurean system of logic rather than the Peripatetic syllogism:

> There were Stoic and Epicurean teachers active in Afghanistan and quite possibly in northwest India also. The Epicureans especially disseminated their message with a missionary fervor and believed that it was their duty to teach the "barbarians." And the central point is that the very quality that differentiates Naiyāyika logic from Peripatetic renders it similar–indeed nearly identical–to the Epicurean and other Hellenistic varieties. ... The general philosophical frameworks of the Epicurean and Naiyāyika logics are identical.[2]

Epicureanism was one of the three leading Greek philosophies of the Hellenistic age. The school was founded by Epicurus of Samos (341-271 BC). A library containing over 1,800 papyrus scrolls was discovered in the remains of a villa at Herculaneum in the Bay of Naples, southern Italy. These scrolls had been carbonised and buried by an eruption of Mt Vesuvius in 79 AD that destroyed the ancient city of Herculaneum.[3] Amongst these scrolls is a work by Philodemus of Gadara (c.110-c.40 BC) entitled *On Signs* (*De Signis*).[4] Philodemus was born in Gadara, Syria, and died in Italy. He studied in Athens under Zeno of Sidon who was at the time the head of the Epicurean school. *On Signs* is essentially a transcript of the lectures Philodemus heard from Zeno in Athens. This work is the main source for Epicurean logic.

The main topic of *On Signs* is a controversy between the Stoics and Epicureans over the validity of inference. Both Stoic and Epicurean logic is centred around the hypothetical proposition. The Stoics claim that such propositions are sound unless the antecedent is true and the consequent false, whereas the Epicureans claim that these propositions are validated by induction based on experience.[5] If these views on inference are to be compared with the *Nyāya Sūtra* then they should be compared with inference in the *Nyāya Sūtra* and not with the five-part proof. The *Nyāya Sūtra* does not make an association between the five-part proof

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[1] McEvilley 2002, 510. See Vidyābhūṣaṇa 1918, 486-487; repr. Vidyābhūṣaṇa 1920, 511-512.

[2] McEvilley 2002, 512.

[3] De Lacy, De Lacy 1978, 145-155; and Erler 1998.

[4] Trans. De Lacy, De Lacy 1978, 91-131.

[5] See De Lacy 1938.

and inference.[1] Inference (*anumāna*) is described separately as one of the means of valid cognition (*pramāṇa*),[2] and it does not involve hypothetical propositions.

McEvilley goes on to claim that the description of the five-part proof in the "syllogistic sections" of the *Nyāya Sūtra* is completely without precedent in the Indian tradition:

> But for the syllogistic sections there is no identifiable source anywhere in the Indian tradition. Only one known source in the world could have provided the input at the time, and that very source is known to have been abundantly present in India during the period in question.[3]

The source that McEvilley claims was abundantly present in India during the period in question is Epicurean logic. McEvilley has overlooked the Indian sources for the five-part proof in *Nyāya Sūtra*. These are the *Caraka Saṃhitā* which describes not only the five-part proof but also the five epistemic terms that together made up the original ten members. Vātsyāyana in his commentary on the *Nyāya Sūtra* also explains that the ancient Indian logicians accepted all ten as members of the proof. Further, Bhadrabāhu describes another ten-part proof, and yet another version of a ten-part argument is found in the *Kathāvatthu*.

Added to this is the fact that there is no mention of anything like the five-part proof in the works by Philodemus. In fact, there is no mention of a five-part proof in any extant Greek work, a point that McEvilley himself concedes.[4] In spite of the fact that the Indian tradition possesses identifiable sources for the origin of the five-part proof and the Greek tradition possesses none whatsoever, McEvilley continues to maintain that the ancient Indian logicians relied on imported Greek material rather than their own tradition to form the five-part proof:

> The new method of argumentation was adapted to the local style by means of the five-membered syllogism based in part on the ten-limbed debating procedure and in part on the imported materials. The Naiyāyika, in other words, may have tamed the Hellenistic syllogism into assimilable form by rendering it superficially similar to the inherited forms of debate.[5]

Further, the very argument that McEvilley uses to support the claim that the Indian five-membered proof resulted from outside influence, i.e. the complete lack of any developmental stages, is in fact used rather selectively by McEvilley. Not only does this reason not apply in

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[1] Randle 1930, 164.

[2] *Nyāya Sūtra* (1.1.5), trans. Jhā 1915-19, 1, 153-196.

[3] McEvilley 2002, 515.

[4] McEvilley 2002, 515.

[5] McEvilley 2002, 516.

the case of the Indians, but it actually applies in the case of the Greeks. That is, the Aristotelian syllogism appears without any developmental stages, a point that Randle makes:

> The Western syllogism has the appearance of having sprung all at once into existence, from the head of Aristotle, clad in complete mail. It has about it no marks of the labour of thought which brought it to birth, and seems more like a work of art than an organism with an evolution behind it. The Indian 'syllogism', on the other hand, is an organism with its history plainly recorded in its structure: an untidy organism, too, with vestigial structures and rudimentary organs which are changing their functions while preserving more or less of their primitive form.[1]

In the case of the Aristotelian syllogism, the complete absence of any developmental stages in the Greek tradition is not considered by McEvilley as proof of outside influence, but in the case of the five-membered proof described in the *Nyāya Sūtra*, he claims that an absence of developmental stages in the Indian tradition is proof of outside influence. Further, his reason does not apply to the five-membered proof since there are prior developmental stages for the five-membered proof in the Indian logical tradition.

McEvilley uses the same argument, i.e. the complete absence of any developmental stages, to argue for a Greek origin of not only the Nyāya system of proofs, but also for a Greek origin of the system of Buddhist dialectics used in the Mādhyamika school:

> It is more than plausible that both the Nyāya-Vaiśeṣika and its classical adversary, the Mādhyamika school, were responding to stimulus from Hellenistic Greek schools, especially in the development of their methods. Both the systematic dialectical *reductio ad absurdum* and the logic of the syllogism probably arose at least in part from western sources, and the conflict between them which enlivened Indian philosophical discourse for several centuries may reflect a similar, somewhat earlier moment of the Greco-Roman milieu.[2]

The system of Buddhist dialectics found in the Mādhyamika school is the subject of the following chapter.

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[1] Randle 1924, 398.

[2] McEvilley 2002, 514-515.

# Chapter seven: Buddhist dialectics

### Introduction

The term *Buddhist dialectics* refers to the second of the two types of logic used in ancient India. The first type of logic, described in the *Nyāya Sūtra*, focused on establishing matters of fact using structured proofs governed by rules. The second type of logic focuses on refuting matters of fact using a system of dialectics that employs consequences (*prasaṅga*). The most well-known representative of the second type of logic is Nāgārjuna. Nāgārjuna is known as the founder of a Buddhist school of thought called the Mādhyamika (Middle Way). McEvilley claims that Nāgārjuna's system of dialectics has a Greek origin:

> After Alexander's colonization of northwest India a five-hundred-year-long period of Greek and Indian cultural intermixing took place. Toward the end of this period, the array of Greek dialectical forms turns up in India, mature, complete, and without evidence of developmental stages, in the school of Buddhist thought called Mādhyamika.[1]

McEvilley's main reason for claiming that Buddhist dialectics has a Greek origin is that it appears in Nāgārjuna's works complete and without any prior developmental stages. The Greeks were in India for some centuries, as McEvilley says, and thus the opportunity for them to influence Nāgārjuna's views certainly existed. However, contrary to what McEvilley claims, there is no evidence of any foreign influence to be found in Nāgārjuna's works.[2]

This chapter describes Nāgārjuna's system of dialectics and shows that Buddhist dialectics did have developmental stages within the Indian philosophical tradition. This removes the need to invoke Greek influence in order to account for the advent of Buddhist dialectics in India. These developmental stages are found in the same works that provided evidence of developmental stages for the first type of logic.

## 7.1    Nāgārjuna

Nāgārjuna is one of the most well-known of Indian Buddhists. However, for someone so well-known, relatively little is known about him for certain. Modern scholarship does not agree on exactly where in India and at what time he lived, nor which of the many works

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[1] McEvilley 2002, 416.

[2] Āryadeva, Nāgārjuna's student and contemporary, mentions the days of the week which indicates Greek influence, see Jacobi 1911, 2 note 1; and Keith 1921, 22-23.

attributed to him are genuine. Nāgārjuna is surrounded by so much uncertainty that Walleser felt compelled to declare that "we cannot even positively say that he has really existed."[1]

The name Nāgārjuna is used here to refer to the person who wrote the famous *Mūla Madhyamaka Kārika* (Fundamental Verses on the Middle Way).[2] He is also associated with the *Prajñāpāramitā Sūtras* (Perfection of Wisdom Aphorisms)[3] and is traditionally considered to be the founder of the Madhyamaka (Middle Way) school of Buddhist philosophy. Much of what is known about Nāgārjuna's life comes from traditional biographies preserved in Tibetan and Chinese.[4] According to the traditional sources, Nāgārjuna came from the south of India and was associated with Nāgārjunakoṇḍa (hill of Nāgārjuna) in the Āndhra country, not far from Amarāvatī.[5] This view has received some support from archaeological discoveries made at Nāgārjunakoṇḍa.[6]

Nāgārjuna was the friend of a Śātavāhana king who built a monastery for Nāgārjuna at Bhramaragiri (Śrīparvata).[7] Nāgārjuna wrote two works for a monarch, the *Ratnāvalī* (Precious Garland)[8] and the *Suhṛllekha* (Letter to a Friend),[9] the presumption being that both works were for this same king.[10] According to the Tibetan tradition, Nāgārjuna's *Ratnāvalī* and *Suhṛllekha* were both written for a king whose Tibetan name is Bde spyod.[11] The name "Bde spyod" has been reconstructed in Sanskrit as "Udayana" in the translation of the *Chos*

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[1] Walleser 1923, 424. See also Watters 1904-05, 203; and Ramanan 1966, 25. For an extensive list of modern sources regarding the life of Nāgārjuna see Meulenbeld 1999-2000, **IB**, 475-476 note 213.

[2] Tib. *Dbu ma tsa ba'i tshig le'ur byas pa shes rab ces bya ba.* Tohoku: 3824. Peking: 5224. Trans. Streng 1967, 183-220; Inada 1970, 35-171; Kalupahana 1986, 99-391; and Garfield 1995, 1-83. See also Sprung 1979.

[3] Surveyed in Conze 1960.

[4] Meulenbeld 1999-2000, **IA**, 368, lists many of the traditional sources for the life of Nāgārjuna found in Tibetan and Chinese

[5] Conze 1960, 1-2. Ichimura 1992, 9, argues that Nāgārjuna did not come from south India, but came from Vidarbha (Vedalī), an area 200 miles northeast of Bombay.

[6] Yün-hua 1970, 139 note 1, lists the useful publications on archaeological discoveries at Nāgārjunakoṇḍa.

[7] Chattopadhyaya 1970, 384; and Ramanan 1966, 27.

[8] Tib. *Rgyal po la gtam bya ba rin po che'i phreng ba.* Tohoku: 4158. Peking: 5658. Trans. Hopkins, Lati Rimpoche 1975; and Hopkins 1998. Mittal 1984, 69, notes another translation in the *Journal of the Royal Asiatic Society*, 1934, 307-325; and 1936, 237-252, 423-435. Summarised in Potter ed. 1965-99, **8**, 153-161; and in Lindtner 1986, 292-297. Vetter 1992 questions the authenticity of this work.

[9] Tib. *Bshes pa'i spring yig.* Tohoku: 4182, 4496. Peking: 5409, 5682. Trans. Wenzel 1886; Excell, et al. 1966, 15-44; Beyer 1974, 10-18; Kawamura 1975, 1-93; and Jamspal, et al. 1978. Winternitz 1933, **2**, 347 note 3 mentions another translation by S. Beal 1887 *Indian Antiquary*, **16**, 169 ff.; and Takakusu 1896, 158 note 4 also mentions a translation by S. Beal 1892, Luzac & Co. Summarised in Potter ed. 1965-99, **8**, 163-176; Lindtner 1982, 218-227; and Lindtner 1986, 298-304. Dietz 1983 questions the authenticity of this work.

[10] Sastri 1955, 201.

[11] Ruegg 1982, 506.

*'byung* (Religious History)[1] by Tāranātha (1575-1634),[2] as well as in the translation of the *Chos 'byung* (Religious History)[3] by Bu ston (1290-1364),[4] and as "Sucarita" in the translation of the *dPag bsam ljon bzang* (The Excellent Wish Fulfilling Tree)[5] by Sum pa mkhan po Ye shes dpal 'byor (1704-1788).[6] According to de Jong, "Bde spyod" corresponds to "Śātavāhana".[7] This is supported by Takakusu, who discusses the identity of this king at length.[8] Kawamura points out that "Śātavāhana" is not the name of a particular king, but the name of a family of Āndhra kings founded by Simuka.[9] Robinson, following Lamotte, says that the *Suhṛllekha* is dedicated to one of the Śātavāhana kings, possibly Yajñaśrī.[10] Ramanan suggests that this king was Gautamīputra Śātakarṇī who ruled for 24 years, either 80-104 AD or 106-130 AD.[11] According to Ichimura, Nāgārjuna may well have written the *Suhṛllekha* for Gautamīputra Śātakarṇī (100-130 AD) or for his successor Vāsiṣṭhīputra Pulumāyi (130-159 AD), but he wrote the *Ratnāvalī* for Rudradāman (130-155 AD), the great Satrap of Ujjayinī.[12] Ruegg lists the names of four kings that have been suggested as the recipients of Nāgārjuna's two works.[13]

The traditional biographies in Tibetan claim that Nāgārjuna had a very long life. The *Chos 'byung* by Bu ston,[14] the *Deb ther sngon po* (Blue Annals)[15] by 'Gos lo-tsā-ba gzhon nu

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[1] Complete title is: *Dam pa'i chos rin po che 'phags pa'i yul du ji ltar dar ba'i tshul gsal ston dgos 'dod kun 'byung*. Trans. Chattopadhyaya 1970. Nāgārjuna's biography is described 106-119 and 383-385. See Schiefner 1927 for another translation.

[2] Chattopadhyaya 1970, 109, cf. 9 (and note 22) where it is rendered as Udayī and Uttrāyana. Udayana has also been used in the translation of Tāranātha's *Bka' babs bdun ldan* (Seven Instruction Lineages), see Templeman 1983, 7.

[3] Complete title is: *bDe bar gshegs pa'i bstan pa'i gsal byed chos kyi 'byung gnas gsung rab rin po che'i mdzod*. Trans. Obermiller 1931-32. Nāgārjuna's biography is described **2**, 122-130.

[4] Obermiller 1931-32, **2**, 167.

[5] Complete title is: *'Phags yul rgya nag chen po bod dang sog yul du dam pa'i chos 'byung tshul dpag bsam ljon bzang*. The part containing Nāgārjuna's biography is translated in Pathak 1954.

[6] Pathak 1954, 94.

[7] de Jong 1978a, 137.

[8] Takakusu 1896, 159, also note 1, 159-160. See also Kawamura 1975, 4 note 2.

[9] Kawamura 1975, 4 note 2.

[10] Robinson 1967, 24.

[11] Ramanan 1966, 28. Cf. Winternitz 1933, **2**, 348.

[12] Ichimura 1992, 9.

[13] Ruegg 1982, 506. See also Meulenbeld 1999-2000, **IB**, 477 note 223.

[14] Obermiller 1931-32, **2**, 127.

[15] Trans. Roerich 1949. Nāgārjuna's biography is described 34-35.

dpal (1392-1481),[1] and the *Grub mtha' shel gyi me long* (Crystal Mirror of Tenets)[2] by Thu'u-bkwan blo bzang chos kyi nyi ma (1737-1802),[3] all say that Nāgājruna lived for 600 years. Tāranātha claims in his *Chos 'byung* that Nāgārjuna lived for either 530 or 571 years,[4] and in the *dPag bsam ljon bzang*, Nāgārjuna is said to have lived for either 541 or 583 years.[5] According to Walleser, the Tibetan sources report that Nāgārjuna "lived 71 years less than 600 years of the duration of each of half a year."[6]

A biography of Nāgārjuna written in the first half of the 4th century AD was translated into Chinese by Kumārajīva in about 405 AD.[7] Its account of Nāgārjuna's life is discussed by Walleser, Winternitz, and Robinson.[8] The Chinese pilgrim Hsüan-tsang (629-645 AD), who visited Indian in the seventh century, says that Nāgārjuna had the secret of long life and had attained an age of several centuries.[9] Hiuen-tsiang also says that Nāgārjuna was a contemporary of Aśvaghoṣa,[10] who was in turn a contemporary of Kaniṣka. Another Chinese pilgrim, I-tsing (671-695 AD), also visited Indian in the seventh century and he makes a similar association between Nāgārjuna and Aśvaghoṣa.[11] Takakusu also claims that Nāgārjuna was a contemporary of Kaniṣka.[12] However, it is difficult to determine the value of these claims when determining Nāgārjuna's dates because Kaniṣka's dates are very uncertain, and because there was more than one Kaniṣka.[13] According to Yün-hua, both Chinese and Korean works testify to Nāgārjuna living for 700 years.[14]

There is some speculation that the claims that Nāgārjuna lived for some hundreds of years may have come about because of prophecies regarding Nāgārjuna. Such prophecies are

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[1] Roerich 1949, 34.

[2] Complete title is: *Grub mtha' thams cad kyi khungs dang 'dod tshul ston pa legs bshad shel gyi me long.* Partial translation in Mittal 1984. Nāgārjuna's biography is described 38-41.

[3] Mittal 1984, 40.

[4] Chattopadhyaya 1970, 110.

[5] Pathak 1954, 94.

[6] Walleser 1923, 430.

[7] *Lung shu p'u sa ch'uan.* Taishō: 2047. Nanjio: 1461.

[8] Walleser 1923, 443-448. Winternitz 1933, 2, 342-343. Robinson 1967, 21-22.

[9] Beal 1884, 2, 212; and Watters 1904-05, 2, 201.

[10] Beal 1884, 2, 302-303; and Watters 1904-05, 1, 245.

[11] Trans. Takakusu 1896, 181.

[12] Takakusu 1896, lix.

[13] Sastri 1955, 198; Ramanan 1966, 28-30; and Ruegg 1982, 506.

[14] Yün-hua 1970, 149.

found in the *Laṅkāvatāra Sūtra* (Descent into Laṅkā),[1] and other works.[2] Dutt explains that the origin of the stories about Nāgārjuna's long life arose out of confusion about two separate individuals who lived some centuries apart. According to this view, there were in fact two Nāgārjunas, an earlier one who wrote the *Mūla Madhyamaka Kārika* and a later one who was a *siddha* (tantric practitioner). Dutt says: "Tāranātha linked up the life-span of the first Nāgārjuna with that of the last, and as the belief in the capacity to prolong life through Tāntrik methods was then current, he did not think it absurd in any way that a person would live for about 600 years."[3] Similarly, Joshi explains: "These Tibetan authorities have hopelessly mixed together, not only history and legends, but also the information belonging to different persons of the same name, who flourished in different epochs."[4] Ruegg also accepts that in order to bridge the long period of time that separates Nāgārjuna the author of the *Mūla Madhyamaka Kārika* and the *siddha* Nāgārjuna (pāda), a single Nāgārjuna was ascribed an unusually long lifespan of 600 years.[5] The second of these two Nāgārjunas mentioned here is presumably the Nāgārjuna described in various histories of Indian *siddhas*.[6]

Exactly how many historical figures there were in India with the name Nāgārjuna remains unclear. Opinions range from none at all, up to five or more different individuals. Walleser alone questions the very existence of Nāgārjuna.[7] The traditional accounts preserved in Tibetan and Chinese describe one Nāgārjuna. Yün-hua and Mabbett both accept that there was in fact only one Nāgārjuna. He was the author of the *Mūla Madhyamaka Kārika* and the founder of Madhyamaka philosophy. Yün-hua argues that numerous works and incredible stories were later attributed to this one individual so making him the person of legend.[8]

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[1] Tib. *'Phags pa lang kar gshegs pa'i theg pa chen po'i mdo*. Tohoku: 0107. Peking: 0775. Trans. Suzuki 1932, see 239-240. See also Suzuki 1930, 23-24; Obermiller 1931-32, **2**, 129-130; and Robinson 1967, 24.

[2] Prophecies regarding Nāgārjuna from Tibetan sources are described in Hopkins 1998, 9-21; and those found in various languages are discussed by Mabbett 1998, 335-338.

[3] Dutt 1931, 638.

[4] Joshi 1965, 14-15.

[5] Ruegg 1982, 512.

[6] See *Caturaśīti-siddha-pravṛtti* (History of the Eight-four Siddas) Tib. *Grub thob brgyad cu rtsa bzhi'i lo rgyus*, Peking: 5091, by Abhayadatta (11th or early 12th century), trans. Robinson 1979, 75-80; and Dowman 1985, 112-117. Also in *Bka' babs bdun ldan* (Seven Instruction Lineages) by Tāranātha, trans. Datta 1944, 4-7; and Templeman 1983, 4-8.

[7] Walleser 1923, 421 and 424.

[8] Yün-hua 1970, 152.

Mabbett claims that the fame of the original Nāgārjuna inspired others to adopt his name and in this way the legend regarding the original person developed over the centuries.[1]

Those who maintain that there were two Nāgārjunas claim that the original Nāgārjuna was the Madhyamaka philosopher, and he was followed by another later Nāgārjuna who was a *siddha* or tantric practitioner (described above). These two individuals were separated by some centuries and they have somehow become confused as one person in the traditional accounts and hence the claim that Nāgārjuna had an extremely long life.[2]

According to Joshi, Tucci maintained that there were not two, but three Nāgārjunas. These three are the two above plus a later one who was an alchemist.[3]

Those who claim there were four Nāgārjunas accept the former three, i.e. a philosopher, a *siddha*, and an alchemist, and then add a fourth, Nāgārjuna the physician.[4] Nāgārjuna the physician, or Suśruta the younger, redacted the Āyurvedic medical work entitled *Suśruta Saṃhitā* (Suśruta's Compendium) and added a final section to it called *Uttara Tantra* (Later Treatise).[5] Meulenbeld lists over 50 medical works attributed to Nāgārjuna the physician.[6] There is no agreement on the chronological order of these four Nāgārjunas. Murthy's order is: 1. the Madhyamaka philosopher (1st-2nd century AD), 2. the physician (4th-5th century AD), 3. the tantric *siddha* (7th century AD), and 4. the alchemist (8th-9th century AD).[7]

All these views (except Walleser's scepticism) describe the original Nāgārjuna as a philosopher who wrote the *Mūla Madhyamaka Kārika* and who was a friend of a Śātavāhana king. Those who maintain that there were not four but five Nāgārjunas claim that the Nāgārjuna who was a friend of a Śātavāhana king was different from the author of the *Mūla Madhyamaka Kārika*. According to Trikamji and Rām, the order of these five individuals is:

    1. Nāgārjuna the Madhyamaka philosopher (1st century AD),
    2. Nāgārjuna the friend of the Śātavāhana king, Gautamīputra Śātakarṇī (178-207 AD),
    3. the physician (5th century AD),

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[1] Mabbett 1998, 343.

[2] Dutt 1931, 636-637; Pathak 1954, 95; Joshi 1965, 13-14; Joshi 1967, 262-263; and Ruegg 1982, 512.

[3] Joshi 1965, 13 note 4. The source is Tucci 1930, 'Animed versiones Indicae'. *Journal of the Asiatic Society of Bombay*. **26**, 138 ff.

[4] Winternitz 1933, **2**, 343-344 note 2; and Karambelkar 1952, 21-33.

[5] Trans. Bhishagratna 1998, **3**, 113-646.

[6] Meulenbeld 1999-2000, **IA**, 365-366.

[7] Murthy 1992a, 294-296.

4. the *siddha* (8th century AD), and

5. the alchemist (12th century AD).[1]

According to Pezzali, the order of the last two Nāgārjunas is reversed:

1. the first Madhyamaka philosopher who wrote the *Mūla Madhyamaka Kārika* (3rd century AD),

2. the second Madhyamaka philosopher who lived about 50 years later than the first,

3. the physician (6th century AD),

4. the alchemist (8th century AD), and

5. the *siddha* (9th century AD).[2]

Other scholars claim that there were up to eight different Nāgārjunas.[3] However, it is generally accepted that the *Mūla Madhyamaka Kārika* was written by (the original) Nāgārjuna and whatever other Nāgārjunas there may have been came later in history.

The dates proposed for (the original) Nāgārjuna range over the first four centuries AD. Ramanan and Ichimura suggest 50-120 AD and 50-150 AD, respectively.[4] Ui claims that Nāgārjuna lived slightly later, 113-213 AD.[5] Ruegg places him later again, 150-200 AD.[6] A commonly accepted date for Nāgārjuna is 150-250 AD.[7] Mabbett suggests the third century AD,[8] and Vidyābhūṣaṇa suggests an even later date, 250-320 AD.[9]

The exact number of works that were written by (the original) Nāgārjuna is also the subject of uncertainty. There is a group of five or six works that are traditionally listed together because of their importance in understanding Nāgārjuna's philosophical views, rather than being a definitive list of all of Nāgārjuna's works.[10] Robinson lists 10 works by Nāgārjuna,[11] while Winternitz and Murti both describe 13 works.[12] Vaidya lists 15, and

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[1] Trikamji, Rām 1980, ix.

[2] Pezzali 1986, 502.

[3] Meulenbeld 1999-2000, **IB**, 476 note 216.

[4] Ramanan 1966, 30; and Ichimura 1992, 8.

[5] Ui 1917, 43. See also Robinson 1967, 22.

[6] Ruegg 1982, 507.

[7] Robinson, Johnson 1970, 70; Inada 1970, 3; Nakamura 1980, 235; and Kalupahana 1992, 160.

[8] Mabbett 1998, 332.

[9] Vidyābhūṣaṇa 1920, 251.

[10] Obermiller 1931-32, **1**, 50-51; Chattopadhyaya 1970, 108 and 386; and Warder 1973, 78. See also Warder 1970, 519.

[11] Robinson 1967, 27.

[12] Winternitz 1933, **2**, 344-348. Murti 1955, 88-91.

Ramanan lists 22 works.[1] In the Chinese collection of translations there are 22 or 24 works attributed to Nāgārjuna.[2] Murthy reports that there are about 100 works attributed to Nāgārjuna.[3] The Tibetan collection of translations holds well over 100 works by Nāgārjuna.[4] The larger numbers of works probably comes about because no distinction is made between any different Nāgārjunas there may have been. Lindtner has attempted to determine exactly which of the many works associated with Nāgārjuna's name are genuine. He examined 51 works, 19 of which he considers to be beyond doubt, i.e. 13 definitely genuine and 6 definitely spurious. Amongst the remaining 32 works, Lindtner classifies 16 as possibly genuine and 16 as probably not genuine.[5]

Only two works are used here to analyse Nāgārjuna's dialectics. These are the *Vaidalya Prakaraṇa* (Commentary on the Pulverization) and the *Mūla Madhyamaka Kārika* (Fundamental Verses on the Middle Way). These two works are amongst those traditionally listed as Nāgārjuna's main philosophical works and they are also included amongst the 13 works that Lindtner considers to be definitely genuine. They are generally accepted to be by Nāgārjuna, even by those who maintain that there was more than one Nāgārjuna.

## 7.2    Refutation of the Nyāya system of logic

The first of these works, the *Vaidalya Prakaraṇa*, is not mentioned by McEvilley in any of his arguments for Greek influence in Nāgārjuna's system of dialectics. In fact, McEvilley makes a claim that suggests he is completely unaware of the work:

> The early Mādhyamika literature–the works of Nāgārjuna and Āryadeva in the second or third centuries AD–contains a fully articulated dialectic but no hint of awareness of the syllogism. If the Naiyāyikas already had the syllogism in hand, Nāgārjuna and Āryadeva could not have avoided a dialectical confrontation with it.[6]

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[1] Vaidya 1960, xv. Ramanan 1966, 36-37.

[2] Pezzali 1986, 503 and Murti 1955, 91, respectively.

[3] Murthy 1992a, 291, i.e. about 52 works under Nāgārjuna the propagator of Mahāyāna, and about 80 under Nāgārjuna the alchemist and Āyurvedist, see 296 note 1.

[4] According to the Tohoku Catalogue there are 122 works attributed to Nāgārjuna (see Vaidya 1960, xiv and xv), and according to the Peking Catalogue there are 137 works attributed to Nāgārjuna (see Suzuki 1962), although some are duplicates. Pezzali 1986, 503, claims that the Peking Catalogue attributes works 125 to Nāgārjuna. Chattopadhyaya 1970, 385, and Mittal 1984, 67, both claim the Tanjur holds about 180 works attributed to Nāgārjuna.

[5] Lindtner 1982.

[6] McEvilley 2002, 406.

The "syllogism" that McEvilley refers to here is the five-membered proof used by the Naiyāyikas or followers of the *Nyāya Sūtra*. However, Nāgārjuna gives more than a hint of an awareness of the five-membered proof, since he devotes 17 *sūtras* of his *Vaidalya Prakaraṇa* to a dialectical confrontation with it.[1]

The *Vaidalya Prakaraṇa* is a polemical work aimed at refuting the system of logic described in the *Nyāya Sūtra*. The Sanskrit word used in the title, "*vaidalya*", means to reduce to small particles, as in to crush, grind or pulverize.[2] There are two versions of the work, the *Vaidalya Sūtra*[3] and the *Vaidalya Prakaraṇa*.[4] The *Vaidalya Sūtra* consists of 73 short aphorisms (*sūtras*) and the *Vaidalya Prakaraṇa* is a commentary on those same aphorisms. Both versions of the work are extant in Tibetan translation only. Each version was translated into Tibetan by different translators and the wording in the aphorisms varies between the *Sūtra* (root text) and the *Prakaraṇa* (commentary) versions. The work in general is referred to as the *Vaidalya Prakaraṇa* since this version contains the *sūtra* version. Both versions of the work are attributed to Nāgārjuna in the Tibetan tradition and this attribution is generally accepted by modern scholarship. Tola and Dragonetti, however, argue that "neither the Sūtras nor the commentary of the *Vaidalyaprakaraṇa* were composed by Nāgārjuna."[5]

Nāgārjuna begins the *Vaidalya Prakaraṇa*[6] by quoting the first *sūtra* of the *Nyāya Sūtra* where the 16 logical terms are listed.[7] He then spends the remainder of the work arguing that none of these 16 could possibly exist as they are claimed to do by the author of the *Nyāya Sūtra*. Nāgārjuna's refutations follow the order of the terms in the *Nyāya Sūtra*.

The discussion below follows a regular pattern. First, the definition of a term is presented as it is found in the *Nyāya Sūtra*. There are references to the relevant *sūtras* in the *Nyāya Sūtra* and also to the relevant sections in the previous chapter of this thesis where the term in question is discussed. Next comes Nāgārjuna's refutation of the term. The numbers of the relevant *sūtras* in the *Vaidalya Prakaraṇa* are provided as a means to locate the same

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[1] *Sūtras* 33-49, trans. Tola, Dragonetti 1995, 74-81.

[2] The meaning of this word is discussed by Kajiyama 1965, 131-133.

[3] Tib. *Zhib mo rnam par 'thag pa zhes bya ba'i mdo*. Tohoku: 3826; Peking: 5226.

[4] Tib. *Zhib mo rnam par 'thag pa zhes bya ba'i rab tu byed pa*. Tohoku: 3830; Peking: 5230.

[5] Tola, Dragonetti 1995, 15 (supported by Wayman in the *Foreword*). See also Bronkhorst 1985b, 126.

[6] *Vaidalya Prakaraṇa* (1), trans. Tola, Dragonetti 1995, 57.

[7] *Nyāya Sūtra* (1.1.1), trans. Jhā 1915-19, 1, 37-83.

information in the translations of the work. The *Vaidalya Prakaraṇa* has been translated into English by Tola and Dragonetti.[1] These references facilitate a close comparison between the ideas in the *Nyāya Sūtra* and those in the *Vaidalya Prakaraṇa*. The *Nyāya Sūtra* also contains replies to many of Nāgārjuna's objections. They appear in chapters that were probably added to the original parts of the *Nyāya Sūtra*. These replies are also noted in the relevant places.

The following description of Nāgārjuna's arguments against the *Nyāya Sūtra* forms a short commentary on the *Vaidalya Prakaraṇa*. Tola and Dragonetti have also written a commentary on the *Vaidalya Prakaraṇa*,[2] but their commentary is more concerned with the meanings of the *sūtras* rather than with just the logical points that Nāgārjuna makes. The following discussion focuses on Nāgārjuna's style of argument and contrasts it with the logic of the *Nyāya Sūtra*. This shows that Nāgārjuna is familiar with the Nyāya system of logic in general, and with the five-part proof in particular, and it also exemplifies Nāgārjuna's system of dialectics. The specific characteristics of this system and the question of Greek influence are discussed in the following section (section 7.3).

## 7.2.1   Epistemology (terms 1-2)

The first two terms in the *Nyāya Sūtra* are means of valid cognition (*pramāṇa*)[3] and objects of valid cognition (*prameya*).[4] The means or instruments of valid cognition are four: perception (*pratyakṣa*), inference (*anumāna*), analogy (*upamāna*) and word (*śabda*) or verbal testimony. (See section 6.2.1 above.) According to the *Nyāya Sūtra*, these four are the ways in which knowledge of reality is acquired since only these four are reliable. The means of valid cognition therefore constitute the pre-eminent standards against which the truth of claims about the world can be determined. If a valid cognition cognises an object then the object in question is established as really existent. The term 'objects of valid cognition' refers to everything that exists. (See section 6.2.2 above.) The fact that objects exist as cognised testifies to the reliability of the four means of valid cognition.

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[1] Trans. Tola, Dragonetti 1995, 57-95. Summarised by Lindtner 1982, 88-93; Lindtner 1986, 273-278; and Lindtner in Potter ed. 1965-99, **8**, 143-149.

[2] Tola, Dragonetti 1995, 99-156.

[3] *Nyāya Sūtra* (1.1.3-8), trans. Jhā 1915-19, **1**, 97-210.

[4] *Nyāya Sūtra* (1.1.9-22), trans. Jhā 1915-19, **1**, 210-298.

**Refutation of epistemology (*sūtras* 2-4)**

Nāgārjuna begins the *Vaidalya Prakaraṇa* with a refutation of the means of valid cognition and the objects of valid cognition.[1] The view of the *Nyāya Sūtra* is that the existence of an object is established (determined or proven) by its being cognised by one of the means of valid cognition, and the reliability of the means of valid cognition are in turn verified by the fact that their respective objects actually exist in the way they are cognised. But, argues Nāgārjuna, if this is the case then both the means of valid cognition and the objects of valid cognition would each be determined only with reference to the other, and thus neither of them would be independently determined. Also, neither of these two could possibly validate itself, and thus there is no absolute proof of the reliability of the means of valid cognition, nor that the objects of valid cognition really exist as they are cognised.

Further, if it is claimed that each of these two is established by the other then the establishment of either one would have to occur either when the other exists, or when the other does not exist, or thirdly, when the other both exists and does not exist. Firstly, one cannot be established when the other already exists since the other would then lack its means of (independent) establishment. Secondly, one cannot be established when the other does not exist since there would be nothing in relation to which this establishment could occur. Thirdly, one cannot be established when the other both does and does not exist since this option attracts the combined faults that each option has individually. Thus, neither the means of valid cognition nor the objects of valid cognition can be established by the other.

**The means of valid cognition establishes all things (*sūtras* 5-11)**

The Naiyāyika (follower of the Nyāya) argues that just as a weight (on a set of scales) is used to determine the weight of all other things, so too do the means of valid cognition establish all things. In reply, Nāgārjuna argues that if everything is established by the means of valid cognition, then any instance of the means of valid cognition must itself be established either with another instance of the means of valid cognition, which entails an infinite regress (*anavasthā*), or else without another instance of the means of valid cognition, which contradicts the original claim. Either way, concludes Nāgārjuna, the means of valid cognition do not establish all things as the Naiyāyika claims.

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[1] *Vaidalya Prakaraṇa* (2-20), trans. Tola, Dragonetti 1995, 58-68.

The Naiyāyika defends the Nyāya position by arguing that an instance of the means of valid cognition establishes both itself as well as other objects, just as a lamp illuminates both itself and other objects (in a dark room). Since the means of valid cognition are self-established (*svayaṃsiddha*), there is no infinite regress. Nāgārjuna's response to this defence is that the example of a lamp used by his opponent is not analogous to the point at issue because a lamp does not illuminate darkness. That is, in order for (the light of)[1] a lamp to illuminate or dispel darkness it must do so either by coming into contact with darkness or else by not coming into contact with darkness. Firstly, lamplight cannot dispel darkness through coming into contact with darkness since wherever there is light there is no darkness. Since these two can never co-exist, lamplight can never come into contact with darkness and then subsequently dispel that darkness. Secondly, lamplight cannot dispel darkness without coming into contact with darkness just as a sword cannot cut an object without coming into contact with that object. Either way, lamplight does not dispel darkness as claimed by the Naiyāyika.

The arguments that Nāgārjuna presents here are also found in the second chapter of the *Nyāya Sūtra*. The author of the *Nyāya Sūtra* discusses the example of a weight used on a set of scales,[2] the problem of infinite regress,[3] and the analogy of the lamp,[4] all in the same order as they are raised in the *Vaidalya Prakaraṇa*. This material was probably added to the original parts of the *Nyāya Sūtra*, possibly in response to arguments such as those found in the *Vaidalya Prakaraṇa*. However, these same ideas appear to have existed during Nāgārjuna's time since he is referring to a real opponent in his *Vaidalya Prakaraṇa* and not simply to a hypothetical opponent in order to explain his own ideas.

The debate continues in the *Vaidalya Prakaraṇa* with the Naiyāyika claiming that a lamp dispels darkness without coming into contact with darkness, just as the planets harm people without coming into contact with people.[5] Nāgārjuna rejects the analogy of harm done by planets because in the case of planets harming people, there are two objects involved, i.e. the planets and the body of the person. However, in the case of lamplight dispelling darkness there are not two objects involved. That is, darkness is simply the absence of light and thus

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[1] A lamp and lamplight are used here synonymously.

[2] *Nyāya Sūtra* (2.1.16), trans. Jhā 1915-19, **2**, 47-61.

[3] *Nyāya Sūtra* (2.1.17), trans. Jhā 1915-19, **2**, 61-64.

[4] *Nyāya Sūtra* (2.1.19), trans. Jhā 1915-19, **2**, 65-71.

[5] The harmful influence of some planets or stars is a customary belief in India.

darkness is not an object which can be somehow driven away by lamplight. Further, argues Nāgārjuna, if lamplight could dispel darkness without coming into contact with darkness then lamplight situated in one location could dispel the darkness in some far off caves without the need of coming into contact with that darkness. Furthermore, lamplight cannot illuminate itself because there is no darkness in lamplight to be illuminated. If lamplight could illuminate itself then, equally, darkness whould be able to conceal itself and thus darkness would never be seen. Since darkness does not exist as an object that can be illuminated or dispelled by a lamp, the analogy of a lamp illuminating both itself and other objects does not prove that the means of valid cognition establishes both itself and other objects. Consequently, the means of valid cognition does not establish all things.

Arguments similar to these are found in the *Nyāya Sūtra*. The 9th futile rejoinder, equivalence in convergence (*prāpti-sama*), and the 10th, equivalence in non-convergence (*aprāpti-sama*), argue that the reason cannot establish the proposition whether it connects or does not connect with the proposition.[1] The *Nyāya Sūtra* uses the analogy of a magic spell killing its victim without connecting with the victim, and Vātsyāyana's commentary uses the analogy of a lamp not illuminating an object unless it connects with the object. Also, in the 11th futile rejoinder, equivalent consequence (*prasaṅga-sama*),[2] the *Nyāya Sūtra* defends its position against a charge of an infinite regress with the analogy of a lamp. It explains how one lamp is required to see some object (in the dark), but there is no need for a second lamp in order to see the first, since a lamp is something that can be seen without the aid of another. This argument is concerned with the example, the third member of a proof.[3]

## Past, present and future (*sūtras* 12-15)

Nāgārjuna's next argument against both the means and the objects of valid cognition is based on the three times – past, present and future. That is, the means of valid cognition cannot be established either before, after or at the same time as the objects of valid cognition. Firstly, the means of valid cognition cannot be established before the objects of valid cognition have come into existence because at that time there would not yet be anything in relation to which the means of valid cognition could be established. Secondly, the means of valid cognition cannot be established after the objects of valid cognition have ceased to exist

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[1] *Nyāya Sūtra* (5.1.7-8), trans. Jhā 1915-19, **4**, 255-259.

[2] *Nyāya Sūtra* (5.1.9-11), trans. Jhā 1915-19, **4**, 259-264.

[3] Term 5 defined in *Nyāya Sūtra* (1.1.25), trans. Jhā 1915-19, **1**, 301-303.

because at that time there would no longer be anything in relation to which the means of valid cognition could be established. Thirdly, the means of valid cognition cannot be established at the very same time as the objects of valid cognition exist because at that time the means of valid cognition would already exist and therefore not be in need of establishment.

At this point in the debate, the followers of the Nyāya argue that Nāgārjuna's arguments also suffer from the very same fault. That is, if the means of valid cognition cannot establish the objects of valid cognition in any of the three times, then equally, Nāgārjuna's own arguments cannot establish (in any of the three times) that the means of valid cognition do not establish the objects of valid cognition. That is, since Nāgārjuna's refutation of the Nyāya position is equally impossible, the Nyāya position is not in fact refuted. Nāgārjuna replies that by attempting to defend their position in this way, the followers of the Nyāya have lost the debate. Firstly, they have committed a point of defeat according to their own rules. The 18th point of defeat (*nigraha-sthāna*), conceding a charge (*matānujñā*),[1] is described in the *Nyāya Sūtra* as occurring when one party attempts to defend their position by claiming that an opponent suffers from the same fault. Secondly, they have by this very move conceded that their own position has the fault in question and, having made such an admission, it is illogical to then claim that no such fault exists. Thus, argues Nāgārjuna, their defence is unsuccessful.

The argument based on the three times is also found in the *Nyāya Sūtra*. It occurs in the second chapter of the *Nyāya Sūtra*,[2] where the reply is given that such arguments suffer from the same fault.[3] The *Nyāya Sūtra* goes on to argue that the existence of the means of valid cognition is inferred from the objects of valid cognition, just as the existence of a musical instrument is inferred from the sound of a musical instrument.[4] The 16th futile rejoinder, equivalence with a fallacious reason (*ahetu-sama*),[5] also contains the argument based on the three times.

## Negative subjects (*sūtra* 16)

The Naiyāyika argues that Nāgārjuna's denial of the means and the objects of valid cognition requires an object to be denied, since there can be no denial without an object.

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[1] *Nyāya Sūtra* (5.2.20), trans. Jhā 1915-19, **4**, 338-340.

[2] *Nyāya Sūtra* (2.1.8-11), trans. Jhā 1915-19, **2**, 22-34.

[3] *Nyāya Sūtra* (2.1.12-14), trans. Jhā 1915-19, **2**, 34-44.

[4] *Nyāya Sūtra* (2.1.15), trans. Jhā 1915-19, **2**, 44-47.

[5] *Nyāya Sūtra* (5.1.18-20), trans. Jhā 1915-19, **4**, 273-276.

Further, this object of denial must exist since it is not possible to deny what does not exist. Thus, the objects of denial in Nāgārjua's arguments, i.e. the means and the objects of valid cognition, must exist in order for them to be denied. Nāgārjuna rejects this defence arguing instead that the object negated can be the idea or concept of something, i.e. there is no need for the object of denial to exist. Nāgārjuna's example is the denial that a river is deep, i.e. when it is denied that the river is deep, the object denied is the idea of a deep river. The idea of a deep river exists, whereas the deep river itself does not exist.

### Correct understanding (*sūtras* 17-20)

The Naiyāyika's final argument is that the means of valid cognition exist because they provide the correct understanding of reality. That is, since they provide correct knowledge, the means of valid cognition must exist, and since the means of valid cognition exist, the objects of valid cognition must also exist. Nāgārjuna replies that even if the means of valid cognition were to exist as claimed, this would not constitute proof that real external objects of valid cognition also exist. For instance, when there is an inference of fire on a hill from the perception of smoke, the object of this inference is the idea (*buddhi*) of fire in the mind, and it is the same with the perception of a pot. That is, the object of the perception of a pot is the idea of a pot formed in the mind and it is not possible to deduce from this idea that there is a real pot existing external to the mind.

The Naiyāyika defends the Nyāya position by claiming that the idea of a pot is not the object but the means of the valid cognition of a pot, and a real pot external to the mind is the object of this valid cognition. Nāgārjuna's reply is that the idea of a pot is not the means of the valid cognition of a pot, but only a condition for the means of the valid cognition of a pot. Since the idea of a pot is something known, it must be the object and not the means of valid cognition.[1] Thus, the means of valid cognition do not establish the existence of independent external objects of valid cognition as claimed by the Naiyāyika. The *Nyāya Sūtra* replies to arguments such as these in chapter four.[2]

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[1] *Buddhi* is listed as the fifth object of valid cognition (*prameya*), see *Nyāya Sūtra* (1.1.9), trans. Jhā 1915-19, 1, 210-216. For synonyms of *buddhi* see *Nyāya Sūtra* (1.1.15), trans. Jhā 1915-19, 1, 265-268.

[2] *Nyāya Sūtra* (4.2.26-37), trans. Jhā 1915-19, 4, 201-220.

## 7.2.2   Doubt (term 3)

The third term in the *Nyāya Sūtra* is doubt (*saṃśaya*), which is described as entertaining conflicting views about an object while its specific characteristics remain unknown.[1] (See section 6.2.3 above.) For instance, when a tall upright object is seen in the distance there is doubt as to whether the object in question is a person or a tree-trunk. Doubt exists because only the characteristics of being tall and upright that are common to both a person and a tree-trunk are perceived.

### Refutation of doubt (*sūtras* 21-23)[2]

Nāgārjuna argues that doubt cannot exist as claimed by the Naiyāyika because it does not exist in any of three possible situations. First, doubt does not exist when an object's specific characteristics are ascertained, since there is then certainty regarding the object. Second, doubt does not exist when an object's specific characteristics are not ascertained, since there is then only the absence of knowledge regarding the object. Third, doubt does not exist during the time when the specific characteristics are being ascertained, since there is no such point at which doubt could exist.

The Naiyāyika argues in return that it is the reference to specific characteristics that causes doubt. For instance, movement (walking) is a characteristic specific to a person, and the nesting of birds is specific to a tree-trunk. With reference to these characteristics, specific to each object, there is doubt regarding the object in question. Nāgārjuna's reply to this defence is that the existence of doubt has already been refuted. That is, there is either knowledge or the absence of knowledge, neither of which constitutes doubt. If knowledge exists when the specific characteristics are ascertained then there would be the lack of this knowledge when specific characteristics are not ascertained. Further, since it is not possible for both knowledge and the lack of knowledge regarding the specific characteristics to exist simultaneously, there can be no doubt.

## 7.2.3   Purpose (term 4)

The fourth term in the *Nyāya Sūtra* is purpose (*prayojana*), which is described as the object that is the aim of an action.[1] (See section 6.2.3 above.)

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[1] *Nyāya Sūtra* (1.1.23), trans. Jhā 1915-19, **1**, 299-314. See also *Nyāya Sūtra* (2.1.1-7), trans. Jhā 1915-19, **2**, 1-21.

[2] *Vaidalya Prakaraṇa* (21-23), trans. Tola, Dragonetti 1995, 68-70.

**Refutation of purpose (*sūtra* 24)[2]**

Nāgārjuna quotes this definition of purpose from the *Nyāya Sūtra* and then argues that purpose cannot exist as claimed. According to the Naiyāyika, a pot for instance is the object that is the aim of a potter's actions. But, argues Nāgārjuna, a pot either already exists in the potter's clay or it does not. If the pot already exists in the clay then the actions of the potter are without purpose since an already existent pot does not need to be made over again. Alternatively, if the pot does not exist in the clay then again there is no purpose since the object required for this purpose is missing. Either way, purpose does not exist.

## 7.2.4   Example (term 5)

The fifth term in the *Nyāya Sūtra* is example (*dṛṣṭānta*), which is described as something understood by both ordinary people and the learned alike.[3] (See section 6.2.3 above.) The Sanskrit word for example, *dṛṣṭa-anta*, means literally 'an end (*anta*) that is seen (*dṛṣṭa*)'.

**Refutation of example (*sūtras* 25-31)[4]**

Nāgārjuna argues that an end (*anta*) exists only relative to a beginning (*ādi*) and a middle (*madhyama*). Since neither a beginning nor a middle are seen, there can be no end that is seen. Further, an example that is either the same as or different from the thing exemplified is no example at all. That is, if the example is the same as the thing exemplified, e.g. if fire is an example of fire, then the exemplifier and the exemplified are without distinction. Alternatively, if the example is different from the thing exemplified, e.g. if water is an example of fire, then the exemplifier and the exemplified would be without resemblance. In either case there can be no such thing as an example.

The followers of the Nyāya defend their position with the claim that something is an example when it is slightly similar to the thing exemplified. Nāgārjuna rejects this because anything can be considered slightly similar in some respects to anything at all. Even things as dissimilar as a hair and a mountain are slightly similar to each other in terms of being existent,

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[1] *Nyāya Sūtra* (1.1.24), trans. Jhā 1915-19, **1**, 299-301.

[2] *Vaidalya Prakaraṇa* (24), trans. Tola, Dragonetti 1995, 71.

[3] *Nyāya Sūtra* (1.1.25), trans. Jhā 1915-19, **1**, 301-303.

[4] *Vaidalya Prakaraṇa* (25-31), trans. Tola, Dragonetti 1995, 71-73.

singular or physical things, but neither is considered to be an example of the other by both ordinary people and the learned alike.

There are two types of example (*dṛṣṭānta*) or instance (*udāharaṇa*) described in *Nyāya Sūtra*. These are the similar instance (*sādharmya-udāharaṇa*) and the dissimilar instance (*vaidharmya-udāharaṇa*). The first is similar to the subject in that it shares with the subject the property presented in the reason, and the second is dissimilar to the subject in that it does not share with the subject the property presented in the reason.[1] Nāgārjuna rejects both types of example since the same reasoning that refutes something being slightly similar to the thing exemplified can be used to refute something being slightly dissimilar to the thing exemplified.

## 7.2.5   Theory (term 6)

The sixth term in the *Nyāya Sūtra* is theory (*siddhānta*), which is described as a philosophical doctrine.[2] (See section 6.2.3 above.) The Sanskrit word for theory, *siddha-anta*, means literally 'an established (*siddha*) end (*anta*)'.

### Refutation of theory (*sūtra* 32)[3]

Nāgārjuna uses the same argument as he used in the refutation of example (*dṛṣṭa-anta*) above. That is, there can be no end without a beginning and middle. Since neither of these is established, there can be no established end (*siddha-anta*) or theory.

## 7.2.6   Members (term 7)

The seventh term in the *Nyāya Sūtra* is member (*avayava*). This term refers to the five parts of a proof: the proposition (*pratijñā*), reason (*hetu*), instance (*udāharaṇa*), application (*upanaya*), and conclusion (*nigamana*).[4] (See section 6.2.3 above.) Nāgārjuna first argues against the existence of all five members jointly, then against each of these five individually, and finally he rebuts the Naiyāyika's defence of the members of a proof.

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[1] *Nyāya Sūtra* (1.1.36-37), trans. Jhā 1915-19, **1**, 385-396.

[2] *Nyāya Sūtra* (1.1.26), trans. Jhā 1915-19, **1**, 303-305. *Sūtra* 26 is slightly ambiguous.

[3] *Vaidalya Prakaraṇa* (32), trans. Tola, Dragonetti 1995, 73-74.

[4] *Nyāya Sūtra* (1.1.32), trans. Jhā 1915-19, **1**, 315-319.

## Refutation of members jointly (*sūtras* 33-39)[1]

The Nyāya position is that all five members together form a complete proof. Nāgārjuna argues that there is no single unit composed of these five members and, equally, the individual members of such a whole are also non-existent. The whole does not exist because it does not exist either one with or separate from the five individual members. Firstly, if the whole existed one with the five members then there would be five wholes since there are five members, or else there would be only one member since there is only one whole. Alternatively, if the whole existed separate from the five members then there would be six parts to a proof, the five members plus the whole.

Further, the whole does not exist in any of the three times. That is, the whole does not exist either before or after the members, since there would then be a time at which the whole existed without any members. Also, the whole does not exist at the same time as the members, because the five individual members are each presented sequentially, with one member not beginning until the former member has been completely presented. Thus, there is no point in time at which all five members co-exist, and consequently, there is no point in time at which the whole could co-exist with all five members.

The Naiyāyika defends the Nyāya position by arguing that the whole (proof) exists in the collection of members. For instance, one strand of *balbaja* grass cannot bind an elephant, but a collection of strands forms a rope that can bind an elephant. Similarly, the five members considered individually do not form a whole, but the collection of these five does indeed form a whole. But this is not so according to Nāgārjuna, since the reason is at fault. That is, one of the fallacious reasons (*hetvābhāsa*) in the *Nyāya Sūtra* is a reason that is similar to the proposition to be proved (*sādhya-sama*).[2] It is described as a reason that has not been proven to apply to the subject and it is similar in this respect to the proposition, i.e. both the reason and the proposition stand in need of a proof. The reason in the (following) proof, 'the whole (proof) exists, because of existing in the collection of five members', stands as much in need of a proof as does the proposition. Nāgārjuna's point here is that if one member lacks the capacity to form a whole then a collection of five members will also lack the capacity to form

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[1] *Vaidalya Prakaraṇa* (33-39), trans. Tola, Dragonetti 1995, 74-76.

[2] *Nyāya Sūtra* (1.2.8), trans. Jhā 1915-19, 1, 512-516.

a whole. Nāgārjuna argues that if one barren woman, for instance, cannot give birth to a child then a thousand barren women collectively cannot do so either.

The Naiyāyika defends their position by claiming that a single strand of *balbaja* grass has the capacity to bind a butterfly, and this capacity is increased as more strands are added until they have, collectively, the capacity to bind an elephant. Nāgārjuna replies that the example of a rope made from *balbaja* grass is not analogous to the point at issue because in the case of rope made from *balbaja* grass, all the strands co-exist, but in the case of the proof, the five members never co-exist. That is, each member is presented sequentially and at no time do all five members co-exist. These arguments concerning the existence of wholes and parts also occur in the *Nyāya Sūtra*,[1] although they are no applied specifically to the members of a proof.

### Refutation of the members individually (*sūtras* 40-43)[2]

Nāgārjuna next refutes each member of a proof individually. The first member of a proof is the proposition (*pratijña*) which the *Nyāya Sūtra* defines as 'the assertion of what is to be established'.[3] Nāgārjuna argues that if the proposition is required in order to establish the whole (proof) then the whole would remain unestablished until it is established by the proposition (and other parts). But, by the same reasoning, the proposition itself would also remain unestablished until it was established by its own constituent parts, and so on infinitely. Consequently, nothing would ever be established. Alternatively, if the proposition is self-established without the need of its parts then it is no longer to be defined as 'the assertion of what is to be established'. Thus, the proposition would either not exist as something so defined or else it must be explained why the whole (proof) is established by its parts whereas the proposition is not.

The second member of a proof is the reason (*hetu*), which the *Nyāya Sūtra* defines as a property that establishes the proposition, i.e. it establishes that the subject has the property in the proposition.[4] Nāgārjuna has two arguments against the reason. The first argument is that the reason cannot establish the proposition whether it is the same as or different from the property in the proposition. Firstly, a reason that is the same as the property cannot establish

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[1] *Nyāya Sūtra* (5.2.4-17), trans. Jhā 1915-19, **4**, 159-181.

[2] *Vaidalya Prakaraṇa* (40-43), trans. Tola, Dragonetti 1995, 77-78.

[3] *Nyāya Sūtra* (1.1.33), trans. Jhā 1915-19, **1**, 320-343.

[4] *Nyāya Sūtra* (1.1.34-35), trans. Jhā 1915-19, **1**, 343-384.

the proposition. For instance, a reason such as 'because of being white' cannot establish a proposition like 'the cloth is white' since 'being white' cannot establish 'being white'. Secondly, a reason that is different from the property cannot establish the proposition. For instance, a reason such as 'because of being black' cannot establish a proposition like 'the cloth is white' since 'being black' cannot establish 'being white'. Neither a reason that is the same as the property, nor one that is as different from the property as black is from white, would be an acceptable reason in the Nyāya system. Nāgārjuna's point here is that there is no way for the Naiyāyika to avoid the two extremes where the reason is either identical to or completely different from the property in the proposition. This argument is similar to the one used to refute the example (term 5 above).

Nāgārjuna's second argument against the reason is that if the reason (a property) is required in order to establish the presence of the another property (in the subject), then a second reason (property) would also be required to establish the presence of the first reason (in the example), and so on infinitely. Alternatively, if a second reason is not required to establish the presence of the original reason (in the example), then the original reason would also not be required to establish the presence of the original property (in the subject). This same argument occurs in the *Nyāya Sūtra* as the 11th futile rejoinder, equivalent consequence (*prasaṅga-sama*).[1]

The next member of a proof is the example. Nāgārjuna does not provide an argument against the example at this point, since it has already been refuted (term 5 above). Also, the last two members, the application and conclusion, are dealt with together. The *Nyāya Sūtra* describes the fourth member of a proof, the application (*upanaya*), as emphasising the similarity between the subject and the similar example, and the dissimilarity between the subject and the dissimilar example.[2] The fifth member of a proof is the conclusion (*nigamana*), which the *Nyāya Sūtra* describes as emphasising the original proposition, i.e. that the subject has the property in question, because of the reason provided.[3] Nāgārjuna's argument against the last two members of a proof is simply that because the application and conclusion depend upon the proposition, example and reason, each of which have been shown not to exist as claimed, neither the application nor the conclusion could exist.

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[1] *Nyāya Sūtra* (5.1.9-10), trans. Jhā 1915-19, **4**, 259-262.

[2] *Nyāya Sūtra* (1.1.38), trans. Jhā 1915-19, **1**, 396-398.

[3] *Nyāya Sūtra* (1.1.39), trans. Jhā 1915-19, **1**, 398-405.

## Rebutting the defence (*sūtras* 44-49)[1]

Nāgārjuna now replies to the Naiyāyika's defence of the existence of the proof. Nāgārjuna argues that if it is claimed that the proposition is established because it is established by the reason, then the example and other remaining members of the proof would remain unestablished, since there is nothing with which to establish them. Further, if the proposition is established by the reason then the other members of the proof would not be required, since the purpose of the proof would have been accomplished by the reason (alone). Alternatively, if the proposition is established by the example, then the reason and other members of the proof would not be required. That is, the same problems would apply to the example. Thus, the members of the proof do not exist as claimed.

The Naiyāyika claims that the reason and example exist since they establish that the self exists in a proof like 'the self is permanent, because of not having a body, like space'.[2] Nāgārjuna replies that if the self could be established by the reason and example in this proof then the self would not be permanent.[3] That is, the self would not exist without being effected by anything in any way, since it can be established by a reason and an example. If the self can be effected in this way then it would be impermanent, the very opposite of the proposition in this proof. Thus, the self does not exist by its own nature, and similarly, the example and reason also do not exist by their own nature.

Further, the members of a proof are always presented one at a time. Thus, when the proposition is being presented, the reason and other members of the proof do not exist. Similarly, when the reason is being presented, the proposition and other members of the proof do not exist. Consequently, the members of the proof never co-exist and therefore they do not exist as claimed by the Naiyāyika. The Naiyāyika argues in return that Nāgārjuna must except the existence of the proposition because in claiming that the members of a proof do not exist, Nāgārjuna has in fact asserted a proposition. Nāgārjuna rejects this defence arguing that the very same analysis that was made with the whole (proof) also applies to a part (proposition). That is, the whole proof does not exist anywhere amongst its five members, and similarly, the proposition does not exist anywhere amongst its parts (syllables). Each syllable is always only expressed one at a time, and thus the proposition does not exist as claimed by the Naiyāyika.

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[1] *Vaidalya Prakaraṇa* (44-49), trans. Tola, Dragonetti 1995, 79-81.

[2] The *Nyāya Sūtra* argues for the existence of the self in general (3.1.1-17), trans. Jhā 1915-19, 3, 1-86, and that the self is permanent in particular (3.1.18-26), trans. Jhā 1915-19, 3, 86-106.

[3] Nāgārjuna seems to understand impermanent here not as momentary but as dependent.

## 7.2.7 Reasoning (term 8)

The eighth term in the *Nyāya Sūtra* is reasoning (*tarka*), which is described as deliberating on the evidence to determine the real nature of an object when it is not known.[1] (See section 6.2.3 above.) Reasoning differs from doubt in that doubt entertains two alternatives together whereas reasoning assumes one alternative and then the other in order to eliminate one alternative.

### Refutation of reasoning (*sūtra* 50)[2]

Nāgārjuna's refutation of reasoning is similar to his refutation of doubt (term 3 above). That is, reasoning cannot exist as claimed by the Naiyāyika because it does not exist in either of the two following situations. First, reasoning does not exist when an object is known, since there is then certain knowledge regarding this object. Second, reasoning does not exist when an object is not known, since there is then only the absence of knowledge regarding this object. Since there is no third alternative, reasoning cannot exist as claimed by the Naiyāyika.

## 7.2.8 Decision (term 9)

The ninth term in the *Nyāya Sūtra* is decision (*nirṇaya*), which is described as the determination of the real nature of an object which was originally in doubt.[3] (See section 6.2.3 above.)

### Refutation of decision (*sūtra* 51)[4]

Nāgārjuna argues that decision does not exist as claimed because there can be no determination of the real nature of an object. That is, in order to determine that an object like a pot exists, is round, is red, and so forth, then the object in question (the pot) must in fact be existent, round, and red, etc. But for this to be the case, a pot would have to be either one with or separate from these attributes of existence, roundness, and redness, etc. If a pot is one with its attributes then it would be impossible to distinguish between a pot and its existence, roundness, or redness, etc. Alternatively, if a pot is separate from its attributes then the pot itself would be separate from, and therefore would not be, existent, round, or red, etc.

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[1] *Nyāya Sūtra* (1.1.40), trans. Jhā 1915-19, 1, 405-417.

[2] *Vaidalya Prakaraṇa* (50), trans. Tola, Dragonetti 1995, 81.

[3] *Nyāya Sūtra* (1.1.41), trans. Jhā 1915-19, 1, 417-428.

[4] *Vaidalya Prakaraṇa* (51), trans. Tola, Dragonetti 1995, 81-82.

The Naiyāyika defends the Nyāya position by arguing that a pot possesses its attributes of existence, roundness, redness, and so forth, and consequently a pot does exist and is round, red, etc. Thus, it is possible to determine the real nature of an object through the attributes that it possesses, and consequently decision does exist. Nāgārjuna rejects this defence arguing that an object does not become what it possesses, just as a tree does not become the branch that it possesses. Since it is not possible to determine the real nature of an object whether it is one with or separate from its attributes, and since there is no third alternative, decision does not exist as claimed by the Naiyāyika.

## 7.2.9   Debate (term 10)

The tenth term in the *Nyāya Sūtra* is debate (*vāda*), which is described as a discussion where each party adopts the opposite position on some issue and presents their position using the five-membered proof. Each party then supports their own position and refutes that of their opponent using legitimate means, i.e. valid cognition (*pramāna*) and reasoning (*tarka*), without contradicting their respective tenets.[1] (See section 6.2.4 above.) The object of this type of discussion is to establish the truth of the matter using legitimate means.

**Refutation of debate (*sūtras* 52-56)**[2]

Nāgārjuna argues that debate cannot exist because it is not possible to conduct a debate without both names and things named also existing. Since these do not exist, debate cannot exist. Names and things named do not exist because they do not exist as either the same as or different from one another. If a name was the same as the thing named then a pot, for instance, could be produced without the effort of a potter or the use of clay just by uttering the word "pot". Alternatively, if the name was different from the thing named then a pot would not be determined when the word "pot" is uttered.

This same refutation is also found in the second chapter of the *Nyāya Sūtra*.[3] The defence provided in the *Nyāya Sūtra* is that the relation between words and their objects is established by convention.[4] Nāgārjuna begins his rebuttal of this defence by declaring that this point has implications for the Nyāya system in general. That is, the first *sūtra* of the *Nyāya*

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[1] *Nyāya Sūtra* (1.2.1), trans. Jhā 1915-19, 1, 429-471.

[2] *Vaidalya Prakarana* (55-56), trans. Tola, Dragonetti 1995, 82-85.

[3] *Nyāya Sūtra* (2.1.53-54), trans. Jhā 1915-19, 2, 249-256.

[4] *Nyāya Sūtra* (2.1.55-56), trans. Jhā 1915-19, 2, 256-260.

*Sūtra* lists all 16 terms and declares that knowledge of the real nature of these 16 leads to the attainment of the highest good (i.e. liberation).[1] Nāgārjuna argues that these 16 terms do not have any basis in reality but are simply used by convention just as the names Devadatta (literally 'given by the gods') and Indragupta (literally 'protected by Indra') are used by parents to name their children. That is, these names could be given to any child and when a child is so named, it does not establish that the child in question was literally given by the gods (*devadatta*) or is actually protected by Indra (*indragupta*). Similarly, there is no relation between these 16 terms and objects. Further, it is a complete contradiction to claim that such a relationship is established by convention since this reason actually counts against the Nyāya position rather than supporting it.[2]

According to Nāgārjuna, words are merely the outcome of convention. There are multiple words (synonyms) for a single thing, and a single word (homonym) for multiple things. They have no (real) relation to objects but are simply used arbitrarily. Thus, neither names nor the things named exist as claimed, and consequently debate cannot exist.

## 7.2.10 Disputation and wrangle (terms 11-12)

The eleventh term in the *Nyāya Sūtra* is disputation (*jalpa*), which is described as a discussion carried on as in the case of a debate (*vāda*) except that each party is not limited to using only legitimate means to support their own position and to refute that of their opponent. They may also use illegitimate means such as quibbles (*chala*), futile rejoinders (*jāti*) and points of defeat (*nigraha-sthāna*).[3] (See section 6.2.4 above.) The object of a disputation is to refute an opponent's position and establish one's own position by any means whatsoever.

The twelfth term in the *Nyāya Sūtra* is wrangle (*vitaṇḍā*), which is described as a discussion carried on as in the case of a disputation (*jalpa*) except that each party does not attempt to establish their own position, but attempts only to refute that of their opponent.[4] (See section 6.2.4 above.) The object of a wrangle is simply to demolish an opponent's position by any means whatsoever.

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[1] *Nyāya Sūtra* (1.1.1), trans. Jhā 1915-19, 1, 37.

[2] See the third point of defeat, contradicting the proposition (*pratijñā-virodha*), *Nyāya Sūtra* (5.2.4), trans. Jhā 1915-19, 4, 319-321.

[3] *Nyāya Sūtra* (1.2.2), trans. Jhā 1915-19, 1, 471-478.

[4] *Nyāya Sūtra* (1.2.3), trans. Jhā 1915-19, 1, 478-480.

**Refutation of disputation and wrangle (*sūtra* 57)**[1]

Nāgārjuna uses the same arguments to refute disputation and wrangle as he used to refute debate since the only difference between these two and debate is that debate is limited to using legitimate means in order to establish the truth of the matter, whereas disputation and wrangle use any means whatsoever to establish one's own position in the case of disputation, or to demolish an opponent's position in the case of wrangle.

## 7.2.11 Fallacious reason (term 13)

The thirteenth term in the *Nyāya Sūtra* is fallacious reason (*hetvābhāsa*). The reason (*hetu*) is the second member of a proof and it is described in the *Nyāya Sūtra* as consisting of a property that establishes the proposition through its similar and dissimilar examples being (respectively) like and unlike the subject. That is, the reason demonstrates how the similar example is like the subject, since the similar example and subject both have the property presented in the reason. The reason also demonstrates how the dissimilar example is unlike the subject, since the dissimilar example and subject do not both have the property presented in the reason. In this way the reason establishes that the subject has the property in the proposition.[2] (See section 6.2.5 above.)

Strictly speaking, this is a description of a correct reason. A reason that fails to meet the requirements of a correct reason is called a fallacious reason (*hetvābhāsa*). A fallacious or pseudo reason is one that has the mere appearance of being a correct reason when in fact it is not a correct reason. A fallacious reason occurs as the second member of a proof, just as a correct reason does, but unlike a correct reason it does not successfully establish the proposition. The *Nyāya Sūtra* describes five ways in which a reason can fail to establish the proposition. In each of these five cases the reason suffers from a particular fault that prevents it from successfully establishing the proposition. The five faults are:

1. inconclusive (*sa-vyabhicāra*)
2. contradictory (*viruddha*)
3. similar to the point at issue (*prakaraṇa-sama*)
4. similar to the proposition to be proved (*sādhya-sama*)
5. mis-timed (*kālātīta*)[3]

Nāgārjuna first refutes fallacious reasons in general and then refutes them individually.

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[1] *Vaidalya Prakaraṇa* (57), trans. Tola, Dragonetti 1995, 85.

[2] *Nyāya Sūtra* (1.1.34-35), trans. Jhā 1915-19, **1**, 343-384.

[3] *Nyāya Sūtra* (1.2.4), trans. Jhā 1915-19, **1**, 481-496.

## Refutation of fallacious reasons in general (*sutra* 58)[1]

Nāgārjuna's refutation of fallacious reasons in general exploits the literal meaning of the term *hetvābhāsa*, i.e. the mere appearance of a reason. Nāgārjuna first argues that gold is not something that merely appears to be gold since it actually is gold. Also, pebbles are not something that merely appear to be gold since they are unlike gold. Similarly, a reason is not something that merely appears to be a reason since it actually is a reason. Also, something unlike a reason is not something that merely appears to be a reason since it is different from a reason. Nāgārjuna uses this point to argue against the existence of the mere appearance of a reason (fallacious reason).

That is, the mere appearance of a reason does not exist because it cannot exist as either the same as or different from a (correct) reason. Firstly, if the mere appearance of a reason is the same as a reason then it would actually be a reason and thus it would not be the mere appearance of a reason. Alternatively, if the mere appearance of a reason was different from a reason then it would not be a reason at all, and then again it would not be the mere appearance of a reason. Since the mere appearance of a reason does not exist as either the same as or different from a reason, and since reason has already been refuted (above), the mere appearance of a reason (fallacious reason) does not exist at all. Nāgārjuna next refutes the various fallacious reasons individually.

## Refutation of the inconclusive (*sutras* 59-62)[2]

The first type of fallacious reason is the inconclusive reason (*sa-vyabhicāra*), which is described in the *Nyāya Sūtra* as one that is not restricted to the similar position.[3] The similar position includes everything that has the property in the proposition whereas its opposite, the dissimilar position, includes everything that does not have this same property. A correct reason must exist in the similar position, and it must not exist in the dissimilar position. A reason that exists in both the similar and the dissimilar positions is called inconclusive.

Nāgārjuna argues that an inconclusive reason does not exist because for it to do so, such a reason must itself be either inconclusive or not inconclusive, both of which are impossible. Firstly, if the reason is really inconclusive then it is inconclusive by its very nature. But then

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[1] *Vaidalya Prakaraṇa* (58), trans. Tola, Dragonetti 1995, 85-86.

[2] *Vaidalya Prakaraṇa* (59-62), trans. Tola, Dragonetti 1995, 86-89.

[3] *Nyāya Sūtra* (1.2.5), trans. Jhā 1915-19, **1**, 496-503.

such a reason would not be something about which there could be a conclusive determination, since it is inconclusive by its very nature. Alternatively, if the reason is not really inconclusive then it is not inconclusive by its very nature. But then it would be unacceptable to claim that such a reason is nevertheless an inconclusive reason, since its nature is otherwise. That is, if such a reason is by nature other than inconclusive then it would not have the very attribute in virtue of which a reason is inconclusive. Since an inconclusive reason does not exist as either inconclusive or as not inconclusive, inconclusive reasons do not exist at all.

The Naiyāyika defends the Nyāya position by arguing that there is such a thing as an inconclusive reason since 'being bodiless', for instance, is an inconclusive reason when proving that some subject is permanent. That is, this reason exists in the similar position, since space, for instance, is both bodiless and permanent, and it also exists in the dissimilar position, since action, for instance, is bodiless but not permanent. Because 'being bodiless' is not restricted to the similar position when proving that some subject is permanent, it is an inconclusive reason. Thus, there is such a thing as an inconclusive reason.

Nāgārjuna rejects this defence arguing that his opponent has not provided an instance of an inconclusive reason. That is, the reason that exists in the similar position is not the same as the reason that exists in the dissimilar position. If the reason exists in the similar position then it is permanent, and if the reason exists in the dissimilar position then it is impermanent. Since one and the same reason cannot be both permanent and impermanent, there must be two separate reasons. Thus, the Naiyāyika has not provided an instance of an inconclusive reason. Nāgārjuna also provides another argument against the existence of an inconclusive reason based on the fact that all things are impermanent and therefore subject to constant change. The reasoning used in this argument is similar to the following argument.

### Refutation of the contradictory (sūtras 63-64)[1]

The second type of fallacious reason is the contradictory reason (viruddha), which is described in the Nyāya Sūtra as one that contradicts an accepted position.[2] This type of reason does not exist in the similar position, i.e. in the position that includes everything that has the property in the proposition. Thus, a contradictory reason is one that is in contradiction with the property in the proposition.

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[1] *Vaidalya Prakaraṇa* (63-64), trans. Tola, Dragonetti 1995, 89-90.

[2] *Nyāya Sūtra* (1.2.6), trans. Jhā 1915-19, 1, 503-507.

Nāgārjuna argues that a contradictory reason does not exist because for it to do so, the reason must be in conflict with the property in the proposition. And in order for this to be the case, the reason and the property in the proposition must co-exist. But since each member of a proof is presented sequentially, with one member not beginning until after the former member has been completely presented, there is no time at which the reason and proposition could co-exist. Since these two never co-exist, they cannot come into conflict. Thus, a contradictory reason does not exist.

Nāgārjuna's refutation of fallacious reasons individually does not include specific refutations of the third and fourth types of fallacious reason, i.e. reasons similar to the point at issue (*prakaraṇa-sama*)[1] and similar to the proposition to be proved (*sādhya-sama*).[2]

## Refutation of the mis-timed (*sūtras* 65-67)[3]

The fifth type of fallacious reason is the mis-timed reason (*kālātīta*), which is described in the *Nyāya Sūtra* as a reason that does not apply to the subject at the relevant time.[4] A similar term occurs as the 10th point of defeat, mis-timed proof (*aprāpta-kāla*).[5] It is described as occurring when the members of a proof are presented in the wrong order. A mis-timed reason is one whose time (or opportunity) to be effective has elapsed.

Nāgārjuna argues that mis-timed reasons do not exist, since the three times (past, present and future) do not exist. That is, in order to establish the existence of the three times, the existence of one of these three must first be established. But there is no way to establish one of these three independent of the other two. For instance, it is said that a pot is present, the clay past, and the potsherds future. However, if something has passed away then it no longer exists. Thus, at the time of the potsherds, the pot and the clay do not exist, since they have both passed away. But then the potsherds would not be the future of anything. Since something cannot be the future of nothing, the future does not exist. Similarly, the past does not exist because when the clay exists the pot has not yet come into existence. That is, at the time when the past is supposed to exist, the present does not exist. If the past existed it would then be the past of something non-existent. Thus the past does not exist. Finally, the present

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[1] *Nyāya Sūtra* (1.2.7), trans. Jhā 1915-19, **1**, 508-512.

[2] *Nyāya Sūtra* (1.2.8), trans. Jhā 1915-19, **1**, 512-516.

[3] *Vaidalya Prakaraṇa* (65-67), trans. Tola, Dragonetti 1995, 90-91.

[4] *Nyāya Sūtra* (1.2.9), trans. Jhā 1915-19, **1**, 516-521.

[5] *Nyāya Sūtra* (5.2.11), trans. Jhā 1915-19, **4**, 328-330.

also cannot exist since there can be no present independent of the past and the future. Since the three times do not exist, a mis-timed reason, i.e. a reason whose time has passed, cannot exist. The *Nyāya Sūtra* argues that the three times do exist in the second chapter.[1]

Nāgārjuna continues that all languages confirm that things that have passed away no longer exist. Since it is not possible to establish a relationship between something and nothing, it is not possible to establish a relationship between a present reason and a past opportunity. Further, if there were such a relationship then the reason and opportunity would have to co-exist. But then the reason would not be one whose time to be effective has elapsed. Thus, the mis-timed reason does not exist.

## 7.2.12 Equivocation (term 14)

The fourteenth term is equivocation (*chala*), which is described in the *Nyāya Sūtra* as occurring when an opponent deliberately misinterprets the meaning of a word and responds to an unintended meaning.[2] (See section 6.2.6 above.)

### Refutation of equivocation (*sūtra* 68)[3]

Nāgārjuna argues that equivocation cannot exist because there could be no dialogue without an agreement on the meanings of words. The Naiyāyika replies that equivocation does exist since Nāgārjuna's refutations of these logical terms are instances of equivocation. That is, Nāgārjuna has interpreted these terms in an extreme way demanding that they refer to real entities that exist in some absolute sense whereas these terms are used simply to refer to logical elements employed in debate. Nāgārjuna rejects this defence and argues instead that the Naiyāyika must accept that both parties are either using these terms in the same way or they are not. If both parties are using these terms in the same way then they are each referring to the same things and Nāgārjuna's refutations are not equivocation. Alternatively, if both parties are not using these terms in the same way then they are each referring to different things. In this case there could be no meaningful dialogue between the two parties and here again there is no equivocation. Either way equivocation does not exist.

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[1] *Nyāya Sūtra* (2.1.39-43), trans. Jhā 1915-19, **2**, 219-229.

[2] *Nyāya Sūtra* (1.2.10-17), trans. Jhā 1915-19, **1**, 522-534.

[3] *Vaidalya Prakaraṇa* (68), trans. Tola, Dragonetti 1995, 91-92.

## 7.2.13 Futile rejoinder (term 15)

The fifteenth term is futile rejoinder (*jāti*), which is described in the *Nyāya Sūtra* as an objection by means of similarity (*sādharmya*) and dissimilarity (*vaidharmya*).[1] (See section 6.2.7 above.) That is, a reason in a successful proof establishes its proposition by demonstrating that the two examples are (respectively) similar and dissimilar to the subject.[2] A futile rejoinder, on the other hand, is a proof where the reason does not establish its proposition because the required similarity and dissimilarity between the subject and each type of example is only apparent. A typical rejoinder is used to refute some position by demonstrating how its acceptance leads to an unacceptable consequence. The author of the *Nyāya Sūtra* lists 24 rejoinders it considers to be futile, since they all fail in their attempts to prove some other position wrong.[3]

**Refutation of futile rejoinder (*sūtra* 69)[4]**

Nāgārjuna argues that a futile rejoinder does not exist since it cannot occur at any time, not when it has already occurred, nor when it has not occurred, nor when it both has and has not occurred. Firstly, a futile rejoinder cannot occur when it has already occurred since nothing occurs over again after itself. Secondly, a futile rejoinder cannot occur when it has not yet occurred since nothing occurs before itself. Finally, a futile rejoinder cannot occur when it is occurring since nothing exists separate from both already occurred and not yet occurred.

## 7.2.14 Points of defeat (term 16)

The sixteenth term is point of defeat (*nigraha-sthāna*), which is described in the *Nyāya Sūtra* as occurring whenever there is misunderstanding (*vipratipatti*) or no understanding (*apratipatti*) by either party in a debate.[5] (See section 6.2.8 above.) The author of the *Nyāya Sūtra* lists 22 points of defeat in the second part of chapter five.[6] These points of defeat describe the circumstances in which a debate is lost. That is, if either party commits any of the faults listed then the debate ends and victory is handed to the other party.

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[1] *Nyāya Sūtra* (1.2.18), trans. Prets 2001, 547. Cf. Jhā 1915-19, **1**, 535-536.

[2] *Nyāya Sūtra* (1.1.34-35), trans. Jhā 1915-19, **1**, 343-384.

[3] *Nyāya Sūtra* (5.1.2-38), trans. Jhā 1915-19, **4**, 238-302.

[4] *Vaidalya Prakaraṇa* (69), trans. Tola, Dragonetti 1995, 92-93.

[5] *Nyāya Sūtra* (1.2.19), trans. Jhā 1915-19, **1**, 537-538.

[6] *Nyāya Sūtra* (5.2.2-24), trans. Jhā 1915-19, **4**, 533-345.

**Refutation of points of defeat (*sūtras* 70-72)**[1]

Nāgārjuna argues that points of defeat do not exist since they could never occur. The Naiyāyika replies that points of defeat do exist since Nāgārjuna's refutations of these 16 logical terms involve repetition (*punarukta*), the thirteenth point of defeat.[2] Repetition occurs when the same words are repeated in a proof without any justification. Since Nāgārjuna has said repeatedly that things do or do not exist, he has committed the fault of repetition and thus points of defeat do exist. Nāgārjuna argues that he could not have committed the fault of repetition because repetition itself does not exist. That is, what was said earlier and what was said later cannot be the same words because once a word is uttered that very utterance cannot possibly come into existence over again. Thus, what was said earlier and what was said later must be different words. But if they are different words then there can be no repetition. Hence repetition does not exist.

Furthermore, none of the other points of defeat exist since they could never occur. That is, just as was explained in the case of futile rejoinders, points of defeat cannot occur at any time, not when they have already occurred, nor when they have not yet occurred, nor when they both have and have not occurred. Thus there are no points of defeat.

This completes Nāgārjuna's refutation of the 16 terms in the *Vaidalya Prakaraṇa*. The following section describes the specific characteristics of Nāgārjuna's system of dailectics and the question of Greek influence.

# 7.3 Nāgārjuna's dialectics

## 7.3.1 Dialectics

Nāgārjuna rejects the system of logic that uses the five-membered proof in favour of a system of dialectics. The advocates of demonstration by proofs consider the conclusion to be proven absolutely beyond all doubt by the evidence presented in the proof. Nāgārjuna argues that the conclusion is not established by the evidence because the need for logical justification has simply moved from the conclusion to the evidence. Since the evidence has no logical justification of its own, the conclusion has not been proven absolutely beyond all doubt. If yet more evidence is required to prove the legitimacy of the original evidence then this entails an infinite regress. If the original evidence can be accepted without justification then anything

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[1] *Vaidalya Prakaraṇa* (70-72), trans. Tola, Dragonetti 1995, 93-94.

[2] *Nyāya Sūtra* (5.2.14-15), trans. Jhā 1915-19, **4**, 333-335.

could be accepted without justification, including the original conclusion. Further, the original evidence cannot be accepted as an independent truth because there are no independent truths. In fact, according to Nāgārjuna, it is not possible for anything to exist independently. Nāgārjuna does not abandon rationality and embrace contradictions.[1] Rather, he takes the requirement for logical justification beyond the point that his opponents consider necessary.

Nāgārjuna's style of argument is often described as *reductio ad absurdum*, although it need not always involve a regression to the absurd. Nāgārjuna argues that if some position is accepted then one of a limited number of alternatives that logically follow from that position must also be accepted. He then argues that each alternative is unacceptable and thus the original position must be abandoned. This style of argument involves forming conditionals with his opponent's position as the antecedent and with an unacceptable position as the consequent. The consequent can be unacceptable to an opponent because it contradicts the antecedent used in the same conditional, because it contradicts the opponent's tenets (in general), or because it is simply illogical. The consequent can be illogical because it entails an infinite regress or because it is logically impossible. Such conditionals do not always constitute a paradox since they can be straight forward refutations of some position. An element of paradox may nevertheless arise in the minds of those who hold that the rejection of some position entails as many difficulties as Nāgārjuna's arguments raise against that position. There are two aspects to this style of argument. First, it involves refutation only. Second, it employs consequences.

## 7.3.2   Negative arguments

The style of argument that Nāgārjuna uses throughout the *Vaidalya Prakaraṇa* is one that involves refutation only. That is, Nāgārjuna is interested only in negating the existence of the 16 terms described in the *Nyāya Sūtra*, not in establishing alternative theories. But a negative style of debate is certainly not evidence of Greek influence. There are Indian precedents for debate involving refutation only which predate Nāgārjuna. For instance, the *Nyāya Sūtra* describes its twelfth term, wrangle (*vitaṇḍā*), as a discussion carried on as in a disputation (*jalpa*), except that neither party attempts to establish their own position but is concerned only to refute that of their opponent. This term is not unique to the *Nyāya Sūtra*. The *Caraka Saṃhitā* also describes the same term (*vitaṇḍā*) as a negative or destructive type

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[1] Robinson 1957, 307.

of debate (*vāda*) where each party endeavours to demolish an opponent's view without attempting to establish their own. Also, all the arguments in both the *Kathāvatthu* and the *Vijñānakāya* are negative in the sense that they are aimed at forcing an opponent to abandon their position. This is done by presenting evidence contradicting an opponent's position rather than by attempting to prove that an alternate position is correct. Further, the so-called hair-splitters described in the early Buddhist works devised arguments so that no matter what position an opponent takes they have a reason to disprove it. An example of their tactics used in debate is found in the *Cūḷahatthipadopama Sutta* (Shorter Discourse on the Simile of the Elephant's Footprint):

> If he is asked like this, he will answer like this, and so we will refute his doctrines in this way; and if he is asked like that, he will answer like that, and so we will refute his doctrine in that way.[1]

These hair-splitters do not argue for any particular position but are interested only in refuting the views of others. There are numerous precedents for a negative style of debate in the Indian tradition. Thus, there is no need to invoke Greek influence in order to explain the purely negative aspect of Nāgārjuna's style of debate. It could easily have come from the long-standing tradition of debate in India.

## 7.3.3   Consequences

Nāgārjuna uses consequences (*prasaṅga*) in his negative style of argument. The principle involved in these consequences is that if an opponent accepts some position then they must also accept what logically follows from that position. If what follows is unacceptable then the opponent must abandon their original position. These arguments normally have only two or three alternatives following from some position. The form of an argument with two alternatives is: if A then either B or C; neither B nor C; therefore not A. For example, if a whole exists then it must exist either one with or separate from its five parts. If the whole exists one with its five parts then there are either five wholes or only one part. If the whole exists separate from its five parts then there are not five but six parts. Since neither is acceptable, the whole does not exist. An example of three alternatives is, for instance, if something occurs (in time) then it must occur in either the past, the present or the future. Since nothing occurs in any of these three periods, nothing occurs.

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[1] *Majjhima Nikāya* (i 176), trans. Bodhi 1995, 269-270.

As in the case of debate involving refutation only, the use of consequences is not evidence of Greek influence. The Indian precedents for using consequences to refute an opponent's position are found in the *Nyāya Sūtra*, the *Upāyahṛdaya* and the *Caraka Saṃhitā*. Caraka describes a rejoinder (*uttara*) as a contrary statement that denies similarity when similarity has been asserted, or vice versa. The examples that Caraka provides indicate that he understands a rejoinder to be a statement supported by a counter-example that contradicts some other statement. A similar term is found in the *Upāyahṛdaya*. It describes 20 refutations (*duṣaṇa*), most of which are presented in pairs where each member of the pair refutes one of two alternatives. The first two refutations, for instance, argue that an example having the property specified in the reason is not a reliable basis upon which to conclude that the subject also has this same property. The first refutation argues that the consequence of one property of the example applying to the subject is that another (unacceptable) property of the example would also (incorrectly) apply to the subject. The second refutation argues the converse, i.e. the consequence of one property of the example not applying to the subject is that another (acceptable) property of the example would also (incorrectly) not apply to the subject.

The *Upāyahṛdaya* is preserved in Chinese translation only, and this has been translated back into Sanskrit by Tucci.[1] The Sanskrit word *duṣaṇa* (refutation) is the term Tucci uses to translate the Chinese word *hsiang-yin* (*xiangyin*). Kajiyama says that "the Chinese word 'hsiang-yin' is most likely to correspond to the Sanskrit prasaṅga or prasaṅga-jāti."[2] The word *prasaṅga* is often translated as "consequence" and it is used to refer to an unacceptable corollary of an opponent's position. The word *jāti* is normally translated as "futile rejoinder". The term futile rejoinder (*jāti*) is used in the *Nyāya Sūtra* to name what the author of the *Upāyahṛdaya* calls a refutation (*duṣaṇa*). That is, almost half the 20 refutations found in the *Upāyahṛdaya* are included in a list of 24 futile rejoinders in the *Nyāya Sūtra*. The author of the *Nyāya Sūtra* argues that all 24 futile rejoinders are unsuccessful attempts to refute correct proofs and hence the use of the word "futile" in the English translation of Sanskrit term *jāti*. The term futile rejoinder occurs in both the first and the fifth chapters of the *Nyāya Sūtra*, and given that the fifth chapter may well date from a time after Nāgārjuna, it is the use of the term in the first chapter that qualifies as a precedent for Nāgārjuna's use of consequences. Vātsyāyana's commentary on the *Nyāya Sūtra* (also written after Nāgārjuna) explains futile

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[1] Tucci 1929b.

[2] Kajiyama 1991, 108 note 7; cf. Katsura 2000b, 225-226.

rejoinder (*jāti*) as an objection which is a directly-following consequence (*prasaṅga*).[1] The term consequence or *prasaṅga* is often used to refer to Nāgārjuna's dialectical consequences.

The works mentioned above contain precedents for the style of argument involving both consequences and refutation only. This shows that these two aspects of Nāgārjuna's system of dialectics had developmental stages in the Indian logical tradition and this undermines the need to invoke Greek influence in order to account for their existence in Nāgārjuna's works. Even ignoring these precedents, it is an extremely weak argument to claim that Indians could not possibly have come up with a negative style of argument involving consequences, and this form of argument must therefore have been introduced by the Greeks.

## 7.4 The *Mūla Madhyamaka Kārika*

McEvilley's claims regarding the origins of Buddhist dialectics focus on Nāgārjuna's famous *Mūla Madhyamaka Kārika* (Fundamental Verses on the Middle Way).[2] According to McEvilley, Greek dialectics appear in this particular work without evidence of prior developmental stages in the Indian tradition:

> ... Nāgārjuna's work appears without known Indian forerunners of its dialectical methods. It has the whole pattern of the Greek dialectic, with its complex and extensive system of arguments which in Greece took six centuries to develop, yet it arises without evidence of developmental stages in its own tradition ... [3]

McEvilley's point here is that Nāgārjuna's system of dialectics as it is found in the *Mūla Madhyamaka Kārika* appears suddenly without any evidence of developmental stages and this system must therefore have come from the Greeks.

### Introduction to the work

The *Mūla Madhyamaka Kārika* is Nāgārjuna's most famous work.[4] There is no dispute about its authorship since even those who accept multiple Nāgārjunas agree that it was written by (the original) Nāgārjuna. This work forms a cornerstone for the Madhyamaka or Middle

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[1] Prets 2001, 548. Cf. Jhā 1915-19, **1**, 535; and Randle 1930, 342.

[2] And to a lesser extend on Nāgārjuna's *Vigraha Vyāvartanī* (Turning Back Dispute), trans. Tucci 1929b; Mookerjee 1957, 7-41; Streng 1967, 221-227; Bhattacharya 1971; Bhattacharya 1978; and Wood 1994, 307-322. See McEvilley 2002, 455.

[3] McEvilley 1982, 28. See also McEvilley 2002, 500.

[4] Also called *Prajñā Mūla*. Tib. *Dbu ma tsa ba'i tshig le'ur byas pa shes rab ces bya ba*. Tohoku: 3824. Peking: 5224. Trans. Streng 1967, 183-220; Inada 1970, 35-171; Kalupahana 1986, 99-391; and Garfield 1995, 1-83. See also Sprung 1979. Summary by Lindtner in Potter ed. 1965-99, **8**, 98-124.

Way system of Buddhist philosophy and it gave rise to many works in India as well as in other Asian countries. Lindtner reports that there were at least ten Indian commentaries and two sub-commentaries written on the *Mūla Madhyamaka Kārika*.[1] The extant commentaries are the *Akutobhayā* (Beyond All Fear) attributed to Nāgārjuna,[2] the *Buddhapālitavṛtti* (The Buddhapālita Commentary) by Buddhapālita (470-540 AD),[3] the *Prajñāpradīpa* (Lamp of Wisdom) by Bhāvaviveka (500-570 AD),[4] to which Avalokitavrata (7th century AD) wrote an extensive sub-commentary, i.e. the *Prajñāpradīpa-ṭīkā* (Great Commentary on the 'Lamp of Wisdom'),[5] the *Prasannapadā* (Clear Words)[6] and the *Madhyamakāvatāra* (Entering the Middle Way),[7] both by Candrakīrti (600-650 AD). Only the *Prasannapadā*, which contains Nāgārjuna's original verses,[8] survives in Sanskrit, although all these works are preserved in Tibetan translations. The indigenous Tibetan literature on the *Mūla Madhyamaka Kārika* is extensive. The Indian commentaries preserved in Chinese translation are the *Zhonglun* (Middle Treatise) by Piṅgala (4th century AD),[9] which is closely related to the *Akutobhayā*, and the *Dacheng Zhongguan Shilun* (Commentary on the Contemplation of the Middle (Way) in the Great Vehicle) by Sthiramati (510-570 AD).[10]

In the *Mūla Madhyamaka Kārika*, Nāgārjuna sets out his arguments for emptiness (*śūnyatā*), a term denoting the complete absence of any inherent existence (*svabhāva*). According to Nāgārjuna, if anything existed inherently then it would be independent (*nirapekṣa*), permanent (*nitya*), numerically one (*eka*) and self-created (*svayaṃkṛta*). Nāgārjuna argues that nothing could possibly exist in this way since every single thing is a dependent arising (*pratītya-samutpāda*), and since all things are dependent, they are only conventionally existent.

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[1] Lindtner in Potter ed. 1965-99, **8**, 98. See also Huntington 1995, 697.

[2] Tib. *Dbu ma rtsa ba'i 'grel pa ga las 'jigs med*. Tohoku: 3829. Peking: 5229. Trans. Bocking 1995.

[3] Tib. *Dbu ma rtsa ba'i 'grel pa buddha pa li ta*. Tohoku: 3842. Peking: 5242. Trans. Saito 1984 (chapters 1-16 only).

[4] Tib. *Dbu ma rtsa ba'i 'grel pa zhes pa sgron ma*. Tohoku: 3853. Peking: 5253. Trans. Ames 1993, 1994 and 1995 (chapters 1 and 2 only).

[5] Tib. *Shes rab sgron ma'i rgya cher 'grel pa*. Tohoku: 3859. Peking: 5259.

[6] Tib. *Dbu ma rtsa ba'i 'grel pa tshig gsal ba zhes bya ba*. Tohoku: 3860. Peking: 5260. Trans. Sprung 1979 (partial translation).

[7] Tib. *Dbu ma la 'jug pa zhes bya ba*. Tohoku: 3861. Peking: 5261 and 5262. Trans. Huntington 1989; Tsong ka pa, Kensur Lekden 1980 (chapters 1-5 only); and Rabten, Batchelor 1983 (chapter 6 only).

[8] Sanskrit editions in de la Vallée Poussin 1903-13; and de Jong 1977. See also de Jong 1978b.

[9] Taishō: 1564. Trans. Bocking 1995.

[10] Taishō: 1567.

Nāgārjuna claims not to be expounding anything new in the *Mūla Madhyamaka Kārika*, but only to be restoring the correct understanding of the Buddha's teachings. Nāgārjuna rejects what he considers to be misrepresentations of the Buddha by his fellow Buddhists, particularly those who follow a body of literature known as the *Abhidharma* (higher knowledge). According to Potter, "Nāgārjuna's arguments appear to have been addressed exclusively against Abhidharma interpretations of the Buddha's teachings."[1] The followers of the *Abhidharma* (Pāli *Abhidhamma*) claim that the elements of existence (*dharmas*)[2] possess an essential nature (Sanskrit: *svabhāva*, Pāli: *sabhāva*), a term variously translated in English as: own being, own essence, intrinsic being, self nature, self existence, inherent existence, essential nature, essence, identity, etc.[3] This is the view that Nāgārjuna argues against in his *Mūla Madhyamaka Kārika*. Its origins are in the *Abhidharma* section of the Buddhist Canon.

## 7.4.1   Abhidharma

The Buddhist Canon is traditionally arranged in three parts: the *Vinaya Piṭaka* or collection of precepts, the *Sūtra Piṭaka* or collection of discourses, and the *Abhidharma Piṭaka* or collection of doctrine. The third section, the *Abhidharma*, is the basis for the later development of Buddhist philosophical systems. Two complete *Abhidharma Piṭakas* exist, each of which consists of a different set of seven treatises. There is one preserved in Pāli that belongs to the Theravādin school of south-east Asia, and a second one that belongs to the Sarvāstivādin school of northwest India. The *Abhidharma Piṭaka* of the Sarvāstivādin school was originally composed in Sanskrit, but it now exists only in Chinese and Tibetan translations.[4] There are also Chinese translations of individual *Abhidharma* works that belong to other Buddhist schools.

According to McEvilley, the philosophical ideas found in the *Abhidharma* of the Sarvāstivādin school are the results of Greek influence.

> There is, to begin with, an overall structural resemblance between the theory of [Platonic] Ideas and the earliest known Buddhist philosophy, the *abhidharma* of the Sarvāstavādin school.[5]

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[1] Potter 1965-99, **8**, 16. See also Lindtner 1982, 71 note 110.

[2] Stcherbatsky 1927, 34.

[3] Garfield 1995, 89 note 4.

[4] See Takakusu 1904-05.

[5] McEvilley 2002, 167.

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McEvilley claims that Gandhāra, in India's northwest, was an important centre for the development of the Sarvāstivādin *Abhidharma* and this was probably due to Greek influence:

> The *abhidharma* seems to have developed ... at the time of the flowering of Indo-Greek Buddhism in the Northwest ... This concatenation of circumstances suggests that if *abhidharma* underwent significant development in Gandhāra this is more likely to have happened among the Greeks there than among the later Śakas and Kushans. The Greeks, after all, had been accustomed to systematic thought for centuries, and both the Śaka and Kushan communities were illiterate until they learned the Greek alphabet. Which group is more likely to have fomented the rigorously disciplined type of systematic thought that the *abhidharma* features?[1]

And later in the same work McEvilley adds:

> Gandhāran Buddhism was a center in which much of the *abhidharma* seems to have been worked out, and Greek Buddhists may have been involved in it.[2]

McEvilley claims that the Sarvāstivādin *Abhidharma* and Nāgārjuna's style of dialectics reflect a similar development in the Greek tradition:

> The speed with which the *abhidharma* was developed and soon thereafter the Prajñāparamitā dialectical reduction of it are characteristic of the onrushing tendency of philosophical history in the Greek tradition.[3]

In summary then, according to McEvilley, Nāgārjuna's system of dialectics has Greek origins since it appears in his *Mūla Madhyamaka Kārika* without prior developmental stages. Also, the philosophical view that Nāgārjuna argues against in this work has Greek origins since it appears in the Sarvāstivādin *Abhidharma* works without prior developmental stages. Further, the controversy between Nāgārjuna and the Sarvāstivādin *Abhidharma* view reflect a similar controversy in the Greek tradition.

However, on closer inspection it is found that both Nāgārjuna's dialectical method in his *Mūla Madhyamaka Kārika* and the view he opposes in this work have Indian origins. This position is established by two points. First, the view that elements of existence possess an essential nature was not introduced to the Sarvāstivādin *Abhidharma* school through Greek influence. This view has an Indian origin the predates the arrival of the Greeks in India. Second, Nāgārjuna's dialectical methods have prior developmental stages in the Indian philosophical tradition. These two points are discussed in the following sections.

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[1] McEvilley 2002, 375.

[2] McEvilley 2002, 378.

[3] McEvilley 2002, 390.

## Origin of the Abhidharma

The *Abhidharma* works are believed to have evolved from lists of terms (Sanskrit: *mātṛkā*, Pāli: *mātikā*) that date from the days of the Buddha,[1] i.e. before the arrival of the Greeks in India. The Sanskrit word *mātṛkā* is derived from the ordinary word for mother (*mātṛ*) and it is cognate with the English word matrix. *Mātṛkā* can be used to mean simply mother, or more figuratively, to mean source or origin.[2] Pruden describes the earliest meaning of the word *mātṛkā* as merely a list,[3] and Gethin defines it as any schedule, table of items or list that acts as a basis for an exposition.[4] Lists of terms were gathered together to form the nucleus around which details were assembled to produce an exposition. Such lists were in this sense the source or origin from which expositions evolved.

There are a number of Buddhist works that are based on lists of terms. An early example of this is the *Saṅgīti Sutta* (Chanting Together),[5] a canonical work of the Theravādin school. In this work, Sāriputta, one of the Buddha's principle disciples, recites lists of terms to summarise the Buddha's teachings. These terms are arranged according to number, i.e. the singletons, pairs, triples, and so on. The *Saṅgīti Sutta* recounts how this summary was made during the Buddha's lifetime in order to prevent disagreement from arising after the Buddha's death, as had recently happened amongst the followers of the Jaina tradition following their founder's death. A commentary on this work, the *Saṅgīti Paryāya* (Chanting Together Enumerations),[6] is one of the canonical *Abhidharma* works of the Sarvāstivādin school. Śāriputra gives a similar list in another work, the *Dasuttara Sutta* (Expanding Decades).[7] These lists also occur in other works. The *Aṅguttara Nikāya* (Collection of Expanding Groups),[8] in particular, consists solely of an elaboration of such lists arranged according to number.

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[1] Frauwallner 1995, 1 and 121.

[2] Gethin 1992, 160.

[3] Pruden 1988, xxxviii.

[4] Gethin 1992, 160. Cf. Mizuno 1961, 65.

[5] Sutta 33 of *Dīgha Nikāya*, trans. Rhys Davids, Rhys Davids 1899-1921, **3**, 201-249; Walshe 1987, 479-510.

[6] Summarised by Takakusu 1904-05, 99-103; and by Lindtner in Potter ed. 1965-99, **7**, 203-216. Attributed to Śāriputra in the Chinese tradition, and to Mahākauṣṭhila in the Sanskrit and Tibetan traditions.

[7] Sutta 34 of *Dīgha Nikāya*, trans. Rhys Davids, Rhys Davids 1899-1921, **3**, 250-265; Walshe 1987, 511-521.

[8] Trans. Woodward, Hare 1932-36; and Thera, Bodhi 1999 (partial translation).

One of the earliest lists is the list of thirty-seven limbs of enlightenment.[1] These thirty-seven terms are traditionally arranged in seven groups. They are discussed in the *Mahāsakuludāyi Sutta* (Greater Discourse to Sakuludāyin),[2] and they are also mentioned in a number of other places in the Pāli Canon, e.g. the *Mahāparinibbāna Sutta* (Great Passing),[3] the *Sampasādanīya Sutta* (Serene Faith),[4] and the *Pāsādika Sutta* (Delightful Discourse),[5] and the *Kinti Sutta* (What Do You Think About Me?).[6] These sources simply mention the seven groups that make up the thirty-seven limbs of enlightenment without elaboration. These seven groups are:

> [1] The four foundations of mindfulness [*smṛtyupasthāna*], [2] the four right efforts [*samyakpradhāna*], [3] the four roads to power [*ṛddhipāda*], [4] the five spiritual faculties [*indriya*], [5] the five mental powers [*bala*], [6] the seven factors of enlightenment [*bodhyaṅga*], [7] the Noble Eightfold Path [*ārya-aṣṭāṅga-mārga*].[7]

Interestingly, the passage in the *Kinti Sutta* continues with:

> ... in these things you should all train in concord, with mutual appreciation, without disputing. While you are training in concord, with mutual appreciation, without disputing, two bhikkhus [monks] might differ about the higher Dhamma [*abhidharma*].[8]

The term *abhidharma* (higher dharma) is used here in the *Kinti Sutta* to refer to the list of thirty-seven limbs of enlightenment just enumerated. This suggests that *abhidharma* was used from an early stage to refer to summaries of the Buddha's teachings (*dharma*) presented in these lists. The same term (*abhidharma*) is also used in a number of other ways.[9]

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[1] Sanskrit: *bodhipakṣika-dharma*, Pāli: *bodhipakkhiyā-dhammā*.

[2] Sutta 77 of *Majjhima Nikāya* (ii 11-12), trans. Horner 1954-59, **2**, 203-222; and Bodhi 1995, 636-638.

[3] Sutta 16 of *Dīgha Nikāya*, trans. Rhys Davids 1881, 1-136; Rhys Davids, Rhys Davids 1899-1921, **2**, 78-191; Walshe 1987, 231-277.

[4] Sutta 28 of *Dīgha Nikāya*, trans. Rhys Davids, Rhys Davids 1899-1921, **3**, 95-110; Walshe 1987, 417-425. Also trans. Rhys Davids 1881, 1-136.

[5] Sutta 29 of *Dīgha Nikāya*, trans. Rhys Davids, Rhys Davids 1899-1921, **3**, 111-131; Walshe 1987, 427-439.

[6] Sutta 103 of *Majjhima Nikāya*, trans. Horner 1954-59, **3**, 24-29; Bodhi 1995, 847-852.

[7] *Dīgha Nikāya* three locations: (1) ii 120 trans. Rhys Davids 1881, 61; Rhys Davids, Rhys Davids 1899-1921, **2**, 128; Walshe 1987, 253; (2) iii 103 trans. Rhys Davids, Rhys Davids 1899-1921, **3**, 97; Walshe 1987, 418; and (3) iii 127-128 trans. Rhys Davids, Rhys Davids 1899-1921, **3**, 120; Walshe 1987, 432. Also *Majjhima Nikāya* ii 238-239 trans. Horner 1954-59, **3**, 25; and Bodhi 1995, 847. All 37 are listed in Rhys Davids, Rhys Davids 1899-1921, **2**, 128-130 note 2.

[8] *Majjhima Nikāya* (ii 239) trans. Bodhi 1995, 847-848.

[9] Pruden 1988, xxxi-xxxvi.

Buswell and Jaini argue that the list of the thirty-seven limbs of enlightenment normally arranged in seven categories marks the first stage in the development of the *Abhidharma*:

> The beginnings of Abhidharma are found in certain fundamental listings of *dharmas* made by the Buddha, which are considered to be definitive and indisputable. The most important of these early listings was that of the thirty-seven limbs of enlightenment (Pāli *bodhipakhiyā dhammā*). ... Such tabulations of seven categories of factors as a definitive listing of the path-related factors acceptable to all Buddhas is common to many *sūtras* in all five *nikāyas*; it marks the first stage in the development of the Abhidharma.[1]

This view is echoed by Watanabe when he reports that:

> ... we find the same list of seven headings ... in many other texts of all known schools. We would say that the thirty-seven practical *dhammas* given by the Buddha at Vesāli gave rise to the idea of a set of *mātikas* and in due course to the various elaborations of it as *Abhidharma* philosophy ...[2]

Referring to this list of thirty-seven limbs of enlightenment, Bronkhorst says:

> It seems clear that this is an early, perhaps the earliest, list of the type that came to be called *mātṛka*/P. *mātikā* and formed the basis for the later Abhidharma works.[3]

Jaini also accepts that: "Whatever the original contents of the Mātikās may have been, there is no doubt that it formed the nucleus of the Abhidhamma literature, both Pāli and Sanskrit."[4]

Thus, the *Abhidharma* is completely Indian in origin. Further, the view that elements of existence possess an essential nature (*svabhāva*) was not introduced to the Sarvāstivādin *Abhidharma* school by the Greeks since it is common to various *Abhidharma* schools.

## Common ideas

The original lists of terms were composed during the Buddha's lifetime or shortly thereafter. These lists were intended to provide definitive summaries of the Buddha's teachings. Explanatory material was added to form various expositions and these works formed the *Abhidharma* sections of the various versions of the Buddhist Canon. Bronkhorst suggests that this process may have begun soon after the Buddha's death (c.486 BC):

> There is evidence that there were Abhidharma-like activities going on well before the Sūtras of the Sūtrapiṭaka had achieved anything like their present shape. ... An independent development of this Mātṛkā was used in the original Abhidharma-Vibhaṅga, which may date from less than 50 years after the death of the Buddha ...[5]

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[1] Buswell and Jaini in Potter ed. 1965-99, 7, 82 and 83.

[2] Watanabe 1983, 55.

[3] Bronkhorst 1985a, 305.

[4] Jaini 1959, 45.

[5] Bronkhorst 1985a, 318.

In the middle of the third century BC, the Buddhist king Aśoka sent missions to Sri Lanka and to northwest India. These missions took with them a common core of ideas that is now found in both the Theravādin *Abhidharma* of south-east Asia and the Sarvāstivādin *Abhidharma* of northwest India. Frauwallner describes how these two *Abhidharma* collections began from a common heritage:

> Both schools–the Pāli school in Ceylon and the Sarvāstivāda school in the extreme northwest–owe their foundation to the missions which were sent out under King Aśoka around the middle of the third century BC. Since both schools have a common core in the old, basic stock of their Abhidharma, it is obvious that this core predates the missions and was thus brought to the mission countries as a common heritage.[1]

Norman also accepts that there was a common core of ideas that predates the separation of the Sarvāstivādins from the Theravādins.

> The codification of such principles which require exposition would give rise to the *mātikā* lists which form the basis of the Abhidhamma books, and now serve as tables of contents. The elaboration of these principles, their definition, and their proof by adding *sutta* passages would form the Abhidhamma proper. This is what we find in the Abhidhamma-piṭaka collection as we have it. These matters must have been discussed before the separation of the Sarvāstivādins from the Theravādins, but not long before. The two sects agree closely in their Vinaya-piṭakas and Sutta-piṭakas, but beyond agreeing about the number of Abhidhamma texts, and the title of one book, there is little agreement in their Abhidhamma-piṭakas. The two collections are two sets of texts compiled by two sects who independently examined and elaborated the same subject matter.[2]

The ideas that are common to both the Sarvāstivādin and the Theravādin *Abhidharma* works date from a period before their separation and are entirely Indian in origin. There was an independent development of each tradition after their separation when Greek ideas could have influenced the Sarvāstivādin *Abhidharma* alone, but the material that is common to both traditions does not have a Greek origin. One idea that is common to both traditions is the idea of inherent existence (*svabhāva*).

## Origin of the term inherent existence (*svabhāva*)

The philosophical view that Nāgārjuna is mainly concerned to refute in his *Mūla Madhyamaka Kārika* is that of inherent existence (*svabhāva*). He devotes chapter fifteen, examination of inherent existence (*svabhāva-parīkṣā*), in particular, to a refutation of this view.

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[1] Frauwallner 1995, 124, see also pp. 40-41.

[2] Norman 1983, 97-98.

Nāgārjuna quotes the *Kātyāyanāvavāda Sūtra* (Discourse to Kātyāyana) to justify his claim to be following the Buddha's teachings in rejecting inherent existence:

> The Victorious One, through knowledge
> Of reality and unreality,
> In the *Discourse to Kātyāyana*,
> Refuted both "it is" and "it is not."[1]

Candrakīrti (600-650 AD) in his commentary on the *Mūla Madhyamaka Kārika*, the *Prasannapadā* (Clear Words),[2] quotes the passage from the *Kātyāyanāvavāda Sūtra* that Nāgārjuna used as his source and describes it as being accepted by all Buddhist schools.[3] The Pāli version of this *sūtra*, the *Kaccāyanagotta Sutta*, contains the Buddha's description of the correct view which is expressed in terms similar to those used in the *Kātyāyanāvavāda Sūtra*.[4] Candrakīrti also quotes two other sources, the *Ratnakūṭa Sūtra* (Heap of Jewels),[5] and the *Samādhirāja Sūtra* (King of Concentration),[6] both of which contain passages similar to the one in the *Kātyāyanāvavāda Sūtra*. Warder and Singh both describe this and four other places in the *Mūla Madhyamaka Kārika* where Nāgārjuna appears to have used sources similar to ones now found in the Pāli Canon.[7]

Nāgārjuna believes himself to be following the correct understanding of the Buddha's teachings in his efforts to refute the followers of the *Abhidharma* who propound the view of inherent existence. According to McEvilley, it is the Sarvāstivādins who propound this view and they do so because of Greek influence. McEvilley argues that evidence for this influence is found in the similarities between the Platonic theory of ideas and the Sarvāstivādin theory that the ultimate constituents of phenomena (*dharmas*) are inherently existent.

> There is, to begin with, an overall structural resemblance between the theory of [Platonic] Ideas and the earliest known Buddhist philosophy, the *abhidharma* of the Sarvāstavādin school. In both traditions, phenomena are not regarded as ultimately real but as

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[1] *Mūla Madhyamaka Kārika* (15.7), trans. Garfield 1995, 40, 222. See also Hayes 1994, 320 and 367-368.

[2] Trans. Sprung 1979.

[3] Passage translated in Sprung, Vyas 1973, 208; Sprung 1979, 159; and Hayes 1994, 373 note 10. See also Lindtner 1982, 257-258; and Lindtner 1986, 323-324.

[4] *Saṃyutta Nikāya* (ii 17), trans. Rhys Davids 1917-30, **2**, 11-12; Kalupahana 1986, 10-11; Kalupahana 1992, 58-59, and Bodhi 2000, **1**, 544. See also Bhattacharya 1937, 85-86. Kalupahana 1986, 81 suggests that the *Mūla Madhyamaka Kārika* is a grand commentary on the *Kaccāyanagotta Sutta*.

[5] Also called the *Kāśyapa Parivarta Sūtra*. Trans. Chang 1983, 387-414. See Potter ed. 1965-99, **8**, 88. Passage translated in Bhattacharya 1937, 85; Sprung, Vyas 1973, 209; Sprung 1979, 159; and Chang 1983, 395.

[6] Summarised in Potter ed. 1965-99, **8**, 185-192. Passage translated in Sprung 1979, 159.

[7] Warder 1973, 79-80. Singh 1983-84, 314-316.

compounded of constituents which are ultimately real, called Ideas in the one case, *dharmas* in the other. Both schools had lists of these constituents, though the Platonic lists have not survived; the Sarvāstavādin *dharma*-list recognised seventy-five impersonal "elements" or ultimate constituents of phenomena.[1]

However, the term inherent existence is not limited to the Sarvāstivādin tradition of northwest India since it also appears in the Theravādin tradition of south-east Asia. It is a term common to both traditions. First the evidence for the term in the Sarvāstivādin tradition.

## *Svabhāva* in the Sarvāstivādin tradition

The term inherent existence or essential nature (*svabhāva*) is found in a number of works that belong to or describe the Sarvāstivādin *Abhidharma* system. For instance, it is found in the *Vijñānakāya* (Consciousness Group), the *Mahāvibhāṣā* (Great Commentary), the *Abhidharmahṛdaya* (Essence of Higher Knowledge) and the *Abhidharmakośa* (Treasury of Higher Knowledge). These sources show that inherent existence is definitely part of the Sarvāstivādin tradition.

The *Vijñānakāya* was discussed above (in chapter three) in connection with the *Kathāvatthu* (Points of Controversy). The *Vijñānakāya* is a Sarvāstivādin *Abhidharma* work, whereas the *Kathāvatthu* is a Theravādin *Abhidharma* work. Both works use the same style of argument which most probably dates from a time before the independent development of these two schools, i.e. before Aśoka's missions around the middle of the third century BC.

The *Vijñānakāya* is renowned for propounding the view that phenomena exist in all three times.[2] The name Sarvāstivāda literally means 'the doctrine that all exists'.[3] The *Vijñānakāya* argues for its position in opposition to a certain Maudgalyāyana (Mulian) who claims that things exist only in the present and not in the past or future. Following this discussion, the *Vijñānakāya* argues that phenomena possess an essential nature (*svabhāva*).[4]

The same view is described in commentaries on the Sarvāstivādin *Abhidharma Piṭaka*. The first of the works making up the Sarvāstivādin *Abhidharma Piṭaka* is the *Jñānaprasthāna* (Foundation of Knowledge)[5] by Kātyāyanīputra who lived around the later part of the first

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[1] McEvilley 2002, 167.

[2] Cox 1995, 153 note 28.

[3] Williams 1981, 229.

[4] Taishō 26.537a-26.538b. Trans. Watanabe 1983, 177-180. See Buswell, Jaini in Potter ed. 1965-99, **7**, 105.

[5] Summarised by Takakusu 1904-05, 82-98; and by Gerow, Potter in Potter ed. 1965-99, **7**, 417-449.

century BC.[1] An encyclopaedic commentary on the *Jñānaprasthāna*, entitled the

*Mahāvibhāṣā* (Great Commentary),[2] was compiled following a council held in Kashmir

during the reign of King Kaniṣka in the second century AD.[3] The *Mahāvibhāṣā* survives now

only in Chinese translation. In a section discussing wrong views there is a discussion on

essential nature.[4]

The *Abhidharmahṛdaya* (Essence of Higher Knowledge) by Dharmaśrī (Fasheng) also

survives now only in Chinese translation.[5] Willemen places this work some time after 130

BC, since Dharmaśrī is said to be a Tocharian from Bactria, but before the *Mahāvibhāṣā* was

compiled, since he is mentioned in there as one of the Western masters (*bahirdeśakas*). Others

date the *Abhidharmahṛdaya* as late as 200 AD.[6] The work consists of ten chapters, the first of

these, on elements (*dhātu*), ends with an explanation that things are comprised within

something of their own nature.[7]

The *Abhidharmahṛdaya* is believed to have inspired the famous *Abhidharmakośa*

(Treasury of Higher Knowledge) by Vasubandhu (c.400-480 AD).[8] In the sixth chapter of his

own commentary on this work (*Abhidharmakośa-bhāṣya*), Vasubandhu explains that elements

of existence (*dharmas*) possess two types of characteristic, unique characteristics (*svalakṣaṇa*)

and general characteristics (*sāmānyalakṣaṇa*). Vasubandhu defines 'unique characteristic' as

an element's essential nature (*svabhāva*).[9]

There is no doubt that the term inherent existence or essential nature (*svabhāva*) played

a major role in Sarvāstivādin *Abhidharma* philosophy. However, it is not limited to the

Sarvāstivādin tradition since it also appears in works belonging to the Theravādin tradition.

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[1] Buswell, Jaini in Potter ed. 1965-99, **7**, 108.

[2] Summarised by Ichimura et al. in Potter 1965-99, **7**, 511-568.

[3] Described in Tāranātha 1970, 91-95. Watters 1904-05, 274-276 argues that the *Mahāvibhāṣā* was not produced following Kaniṣka's council.

[4] Ichimura et al. in Potter 1965-99, **7**, 517.

[5] Taishō: 1550. Also called the *Abhidharmasāra*. Trans. Willemen 1975. Summarised by Willemen in Potter ed. 1965-99, **7**, 451-470; and Pruden 1988-90, **1**, 44-48.

[6] Willemen 1975, vi-viii.

[7] Willemen 1975, 10.

[8] Frauwallner 1961, 131.

[9] *Abhidharmakośa* (6.14c-d), trans. Pruden 1988-90, **3**, 925. See Williams 1981, 242-243; and Cox 1995, 139.

## *Svabhāva* in the Theravādin tradition

This same term (Pāli: *sabhāva*) is also used in the Theravādin tradition. Evidence for this is found in the *Paṭisambhidāmagga* (Path of Discrimination), the *Buddhavaṃsa* (Lineage of the Buddhas), the *Peṭakopadesa* (Instructions to Students of the Piṭakas), as well as in a number of Theravādin commentaries.

The first of these, the *Paṭisambhidāmagga*,[1] is the twelfth text of the *Khuddaka Nikāya* (Collection of Little Texts) and not one of the seven works that make up the Theravādin *Abhidharma Piṭaka*, although it does follow the style of many *Abhidharma* works. According to Warder, "the *Paṭisambhidāmagga* was originally an *Abhidhamma* text"[2] and Frauwallner agrees, saying: "That this is clearly a work of the Abhidharma has always been recognised."[3] The work is traditionally attributed to Sāriputta. Warder dates the work as probably 349 BC,[4] except that additions were made to it at a later time, "bringing in some later concepts which have been discussed above, namely 'own-nature' (*sabhāva*) ... These probably take us into the 2nd century BC at least. That would be the likely period for the elaboration of Treatise XX (on emptiness, using the term 'own-nature') ... "[5]

The "Treatise XX" that Warder refers to is the 20th chapter of the *Paṭisambhidāmagga*. It discusses the term *sabhāva* which Ñāṇamoli translates as 'individual essence'.[6] This term is used in conjunction with a system of categorising the elements of existence (*dhammas*). Warder explains that in this system, "each *dhamma* is defined with a particular 'characteristic' peculiar to itself, in addition to the universal characteristics they all share."[7] The unique characteristic of each element of existence is described as its individual essence (*sabhāva*). This is the same as Vasubandhu's description of the Sarvāstivādin understanding of the term.

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[1] Trans. Ñāṇamoli 1982. Summarised by Norman 1983, 87-89; McDermott in Potter ed. 1965-99, 7, 219-264; and by Frauwallner 1995, 87-89.

[2] Warder 1982, xl.

[3] Frauwallner 1995, 42.

[4] Warder 1982, xxx.

[5] Warder 1982, xxxv. Warder goes on to say (p. xxxvii) that other material may have been added to the *Paṭisambhidāmagga* as late as the 1st century BC. See chronological table p. xxxix.

[6] Ñāṇamoli 1982, 356-361, the term *sabhāva* is mentioned on 357.

[7] Warder 1982, xvi.

According to Ñāṇamoli, "this seems to be the only Piṭaka reference for the term *sabhāva* (individual essence)."[1] However, the term is found in number of other Theravādin works. It is found in the *Buddhavaṃsa*,[2] the fourteenth text of the *Khuddaka Nikāya*. The author of this work is unknown and it is believed to be later than the *Paṭisambhidāmagga*.[3] Horner translates the passage in the *Buddhavaṃsa* containing the term *sabhāva*: "While I was reflecting on these things with their intrinsic nature [*sabhāva*], traits and characteristic marks,"[4] and Warder translates the same passage: "Of him comprehending these *dhammas* having their own natures [*sabhāva*], tastes and characteristics." Regarding this passage, Warder goes on to say:

> Obviously this presupposes the later system of defining *dhammas* according to their characteristics, 'tastes' (functions) and own natures [*sabhāva*], which is not actually found even in the *Paṭisambhidāmagga* although all three terms occur here with these special technical meanings already developing.[5]

The same term is also found in the *Peṭakopadesa* which is traditionally attributed to Mahākaccāyana. The *Peṭakopadesa* (Instructions to Students of the Piṭakas) is translated as the *Piṭaka-Disclosures*.[6] It is closely associated with another similar Theravādin work, the *Nettippakaraṇa* (The Guide).[7] Ñāṇamoli maintains that the *Peṭakopadesa* is the older of the two and that it was composed in India before the first century BC, perhaps as early as the second century BC or even a little earlier.[8] Norman agrees with this date.[9] Ñāṇamoli concludes that the *Peṭakopadesa* "represents the oldest layer of exegetical thought in the Theravāda outside the actual Canon (excluding perhaps the *Milindapañha*), a layer considerably older than that represented even by the *Netti* (itself prior to the main Pali Commentaries)."[10] Bond dates the *Peṭakopadesa* in 150 BC.[11]

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[1] Ñāṇamoli 1982, 362 note 1.

[2] Trans. Horner 1975, 1-99 (previously translation in 1938 by B.C. Law as *The Lineage of the Buddhas*. London: Pali Text Society). Summarised in Norman 1983, 92-94. See also Horner 1978.

[3] Law 1979, 156-157.

[4] Horner 1975, 23.

[5] Warder 1982, xvii.

[6] Trans. Ñāṇamoli 1964. Summarised by Bond in Potter ed. 1965-99, **7**, 381-401. See Zacchetti 2002.

[7] Trans. Ñāṇamoli 1962. Summarised by Bond in Potter ed. 1965-99, **7**, 403-416.

[8] Ñāṇamoli 1964, xi-xii.

[9] Norman 1983, 108.

[10] Ñāṇamoli 1964, xii.

[11] Potter ed. 1965-99, **7**, 381.

The *Peṭakopadesa* includes the term in question in a discussion on the difference between causes and conditions:

> Herein, what is the difference between the cause [*hetu*] and the condition [*paccaya*]? The same-essence (individual-essence) [*sabhāva*] is the cause and the other-essence [*parabhāva*] is the condition ... [1]

This passage closely resembles the view that Nāgārjuna refutes in his *Mūla Madhyamaka Kārika*.[2] Warder maintains that the passage in the *Peṭakopadesa* is the earliest description of the term *sabhāva* to be found in available Theravādin texts.

Potter describes these and other Theravādin sources for the term essential nature and explains how Nāgārjuna's rejection of it lead to his founding the Madhyamaka school.

> The *Paṭisambhidāmagga* seems to anticipate a later Theravāda description of factors according to their unique characteristics (Pali *lakkhaṇa*, Skt. *lakṣaṇa*), function (*rasa*), and essential natures (*sabhāva*; Skt. *svabhāva*). While the term *sabhāva* appears in Pali in the semicanonical *Peṭakopadesa*, and the *Dhammasaṅgaṇi-Aṭṭhakathā* (*Aṭṭhasālinī* 39), as well as in such independent treatises as *Visuddimagga*, it is only in the *Paṭisambhidāmagga* that it is described as being "empty by essential nature", a phrase that has been glossed by Mahānāma (ca. 6th century AD), the author of the commentary to the text, the *Saddammappakāsinī*, as "having emptiness as its own nature". This term gained currency in the Sarvāstivāda school, where *svabhāva* as the abiding nature of factors was contrasted with *kāritra*, or the ephemeral functioning of those factors. This elaboration of a theory of the essential nature of factors (*dharmasvabhāva*) eventually led to Nāgārjuna's dialectical critique of this position, and spawned the Madhyamaka school of Mahāyāna philosophy.[3]

These sources from both the Sarvāstivādin and the Theravādin traditions show that the term essential nature or inherent existence (*svabhāva*) is not limited to the Sarvāstivādin *Abhidharma* works but is an idea common to both traditions. This indicates that it most probably dates from a time before the independent development of these two traditions, i.e. before Aśoka sent missions to Sri Lanka and to northwest India in the third century BC. This would mean that the theory of an essential nature is Indian in origin and was not introduced to the Sarvāstivādin *Abhidharma* tradition by the Greeks as McEvilley suggests.[4] It follows from this that Nāgārjuna was not reacting to Greek ideas when he wrote the *Mūla Madhyamaka Kārika*, but was arguing against an Indian theory common to various *Abhidharma* traditions.

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[1] Trans. Ñāṇamoli 1964, 142

[2] *Mūla Madhyamaka Kārika* (1.3 and 15.3), trans. Streng 1967, 183 and 199; Inada 1970, 40 and 98; Kalupahana 1986, 107 and 229; and Garfield 1995, 110 and 221. See also Hayes 1994, 312-322 and 365.

[3] Potter ed. 1965-99, 7, 98. See also Warder 1982, xvii-xviii.

[4] McEvilley 2002, 167.

## 7.4.2 Nāgārjuna's dialectical method

McEvilley also claims that the dialectical method that Nāgārjuna uses to refute the

views of the *Abhidharma* tradition came from the Greeks since it appears in the *Mūla*

*Madhyamaka Kārika* (Nāgārjuna's *Verses*) without prior developmental stages:

> ... there is inadequate background–almost none whatever–to account for the sudden
> appearance of the full-blown formal dialectic in Nāgārjuna's *Verses*. Nāgārjuna's work
> has the whole pattern of the Greek dialectic, with its complex and extensive system of
> arguments which in Greece developed over a period of centuries; yet it arises suddenly,
> without evidence of developmental stages, in its own tradition.[1]

### Origin of the tetralemma

A distinctive feature of Nāgārjuna's dialectical method is the fourfold scheme of

predication (*catuṣkoṭi*), nowadays called the tetralemma (or quadrilemma). McEvilley points

out that a similar fourfold scheme was also used by Pyrrho:

> An extraordinary similarity, that has long been noticed, between Pyrrhonism and
> Mādhyamika is the formula known in connection with Buddhism as the fourfold negation
> (*catuṣkoṭi*) and which in Pyrrhonic form might be called the fourfold indeterminacy.[2]

The tetralemma consists of four statements (or questions) which taken together exhaust

the ways in which the predicate applies to the subject. Using 'A' to stand for the predicate, the

forms of these four statements are:

1. The subject is A
2. The subject is not A
3. The subject is both A and not A
4. The subject is neither A nor not A

Nāgārjuna uses the tetralemma in the opening verse of his *Mūla Madhyamaka Kārika*:

> Neither from itself nor from another,
>
> Nor from both,
>
> Nor without a cause,
>
> Does anything whatever, anywhere arise.[3]

This same fourfold scheme is used on numerous occasions throughout Nāgārjuna's

work. A very similar scheme is also found in the Greek tradition. A passage from a work by

Aristocles of Messene (late first century BC) preserved in Eusebius of Caesarea's (c.264-

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[1] McEvilley 2002, 500. See also McEvilley 1982, 28.

[2] McEvilley 2002, 495.

[3] *Mūla Madhyamaka Kārika* (1.1), trans. Garfield 1995, 3 and 105.

c.339 AD) *Praeparatio Evangelica* (Preparation of the Gospel) describes a fourfold scheme used by Pyrrho of Elis (c.365-c.275 BC) according to his follower Timon (c.322-c.232 BC):

> Pyrrho of Elis was also a powerful advocate of such a position. He himself has left nothing in writing; his pupil Timon, however, ... saying about each single thing that it no more [1] is than [2] is not or [3] both is and is not or [4] neither is nor is not.[1]

McEvilley concludes that:

> It is hard to identify any significant difference between either the methods or the stated purposes of Pyrrhonist and Mādhyamika dialectic.[2]

According to McEvilley then, the tetralemma that Nāgārjuna uses in the *Mūla Madhyamaka Kārika* has a Greek origin dating back at least to the days of Pyrrho. However, the tetralemma was used in India as early as the days of the Buddha, i.e. before the Greeks first arrived in India. This was discussed at some length above (in chapter two).

In the Indian tradition, the tetralemma is found first in the early Buddhist works. The logical principles that appear in these works indicate that statements can have at most four logical forms, i.e. where a subject is, is not, both is and is not, or neither is nor is not some predicate. If any one of these four statements is true then the other three are false. Sometimes, all four statements are said to be wrong, not because all four are false, but because true and false do not apply to some statements. There are four types of statement: unambiguous, vague, ambiguous, and misleading. These four types of statement correspond to four types of question, i.e. those requiring a categorical, discriminating, counter-question, and no reply, respectively. True and false do not apply to any of the four forms of misleading statements, and consequently, misleading questions must be set aside and not answered.

The Buddha refused to declare some statements to be true or false. These are the so-called indeterminate (*avyākatāni*) or undeclared points. A list of ten such points appears in a number of early Buddhist works.[3] Another version of this list contains fourteen points:

1-4.  The world is permanent, impermanent, both, or neither
5-8.  The world is finite, infinite, both, or neither
9-12.  The Tathāgata does, does not, both, or neither does nor does not exist after death
13-14.  The self (soul) is the same as, or different from the body

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[1] *Praeparatio Evangelica* (XIV 18.1-3), trans. Bett 1994, 140. See also De Lacy 1958, 69; Long, Sedley 1987, **1**, 14-15; and McEvilley 2002, 453.

[2] McEvilley 2002, 484.

[3] See for instance *Udāna* (6.4), trans. Woodward 1935, 81-83; *Aṅguttara Nikāya* (ii 41), trans. Woodward, Hare 1932-36, **2**, 47-48.

The Buddha explains that his reason for refusing to either affirm or deny any of these is because all such statements are misleading. That is, the predicate of each statement does not apply to its subject. This is explained in the *Abyākata Saṃyutta* (Connected Discourses on the Undeclared),[1] and in the *Aggivacchagotta Sutta* (To Vacchagotta on Fire).[2] Nāgārjuna refers to these so-called undeclared points in the *Mūla Madhyamaka Kārika*:

> How can the tetralemma of permanent and impermanent, etc.,
> Be true of the peaceful?
> How can the tetralemma of finite, infinite, etc.,
> Be true of the peaceful?[3]

Candrakīrti in his commentary on this verse also makes the point that the predicate of each statement does not apply to its subject:

> Similarly the four assertions concerning the eternal and the non-eternal have no relevance; because they are without relevance, as the predicates 'light' and 'dark' are without relevance for the son of a barren women ... [4]

This shows that there are Indian precedents for the tetralemma that Nāgārjuna uses and thus there is no need to invoke a Greek origin in order to account for it in the *Mūla Madhyamaka Kārika*. Pyrrho may well have used a similar fourfold scheme, but as explained above (in chapter two) the origin of Pyrrho's fourfold scheme is more likely to be Indian than to be Greek. Conze maintains that:

> ... if it is granted that Pyrrhon owed his basic ideas to his conversion by Indians, and if his philosophy is very similar to that of the Madhyamikas, then the Madhyamika doctrines, which are known to us only from writings certainly not older than about 100 BC, must go back in their essentials to ca 350 BC, i.e. to within 150 years after the Buddha's Nirvana.[5]

## Tetralemma is not a negation

McEvilley concedes that there may be an Indian version of the tetralemma, but he maintains that Nāgārjuna's interpretation of it as a negation was due to Greek influence:

> The redefinition of the four alternatives into a fourfold negation which occurred with the Mādhyamika school had happened considerably earlier in Greece, and even though the four alternatives may not have been planted in India by Greek influence, it is quite plausible that the redefinition of them as negations may have been.[6]

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[1] *Saṃyutta Nikāya* (iv 379), trans. Bodhi 2000, 2, 1383.

[2] *Majjhima Nikāya* (i 486-487), trans. Bodhi 1995, 592-593.

[3] *Mūla Madhyamaka Kārika* (22.12), trans. Garfield 1995, 61 and 281.

[4] Trans. Sprung 1979, 203.

[5] Conze 1951, 142. See also Conze 1949, 196.

[6] McEvilley 2002, 497.

The problem with this claim is that the tetralemma is not a negation, nor was it redefined into a negation in the Mādhyamika school as McEvilley claims. It is not entirely clear what McEvilley means here by "the redefinition of the four alternatives into a fourfold negation". The term "*catuṣkoṭi*" is, however, occasionally translated as "four-cornered negation".[1] This may be done to emphasis the fact that none of the four alternatives should be asserted in situations where the predicate does not apply to its subject. Nāgārjuna provides an example of this:

> "Empty" should not be asserted.
> "Nonempty" should not be asserted.
> Neither both nor neither should be asserted.
> They are only used nominally.[2]

Nāgārjuna's claim that none of these alternatives should be asserted is perhaps what McEvilley means when he says that the four alternatives were redefined into a fourfold negation. However, this is certainly not new to the Mādhyamika school, since it is the acknowledged position of the Buddha.[3] Further, Nāgārjuna does not always claim that these alternatives should be denied. Occasionally all four are asserted. For instance, Nāgārjuna says:

> Everything is real and is not real,
> Both real and not real,
> Neither real nor not real.
> This is Lord Buddha's teaching.[4]

The tetralemma is in fact a fourfold scheme of predication, not a fourfold negation. It consists of four statements that express the ways in which the predicate applies to the subject. If these four are straightforward unambiguous statements then one of the four will be true and the other three false. If the predicate does not apply to the subject then all four are considered to be misleading statements and none of them are asserted to be true or false. The tetralemma has a history of use in India dating back to the days before the Greeks first arrived in India. Robinson, for instance, describes the tetralemma as "simply a pattern consisting of four

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[1] See for instance: Raju 1954; Bahm 1957-58; Conze 1962, 219; Tripathi 1963, 233; Smart 1964, 35; Ross Reat in Potter ed. 1965-99, 7, 37; Gunaratne 1979, 597; Ghose 1987, 294; and Tuck 1990, 55.

[2] *Mūla Madhyamaka Kārika* (22.11), trans. Garfield 1995, 61 and 280.

[3] McEvilley 2002, 426 says: "there is no evidence as to whether the Noble Silence was a part of primitive Buddhism."

[4] *Mūla Madhyamaka Kārika* (18.8), trans. Garfield 1995, 49 and 250.

propositions",[1] and Hayes describes it as "a fairly primitive framework for posing questions that was in use before the time of the Buddha".[2] It is frequently used in the *Mūla Madhyamaka Kārika*, but this is not evidence of Greek influence as McEvilley claims.

## Eleatics and Mādhyamikas

McEvilley also claims that Nāgārjuna's arguments are similar to those of the Eleatics:

> There exist, then, extremely close parallels between the fundamental arguments of the Eleatics and Mādhyamikas against origination, destruction, motion, change, and plurality. It is not exaggerating to say that the two traditions comprise a single discourse on this subject.[3]

The Eleatics refers to three philosophers who were active in the early to mid-fifth century BC. They are: Parmenides (c.480 BC), Zeno of Elea (c.470 BC), and Melissus (c.440 BC), called collectively the Eleatics after Elea (now Velia) in southern Italy.[4] Zeno is well known for the paradoxes of motion recorded by Aristotle.[5] Nāgārjuna's arguments on motion have often been compared with those of Zeno. Jacobi noted in 1911 that Nāgārjuna's system "may be compared with the philosophy of Zeno".[6] In 1927, Stcherbatsky agreed with this, but maintained that "there is no trace of Nāgārjuna having known them [i.e. Zeno's arguments]".[7] Murti later (1955) argued that Nāgārjuna's arguments are superior to those of Zeno.[8] Next, Siderits and O'Brien (1976) described what they say seem to be "striking parallels between certain of Zeno's and Nāgārjuna's arguments, both in methodologies and in targets."[9] In 1984, Mabbett agreed with Murti's analysis and argued that "the temptation to make comparisons with Zeno, however natural, tends grievously to obscure Nāgārjuna's meaning."[10] Bhattacharya argued on a number of occasions (1980-85)[11] for a grammatical interpretation of Nāgārjuna's arguments. He rejected the mathematical interpretation of Siderits and O'Brien,

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[1] Robinson 1969, 76.

[2] Hayes 1994, 322.

[3] McEvilley 2002, 425.

[4] Honderich ed. 1995, 222.

[5] The Dichotomy (*Physics* 239b11-13), the Achilles (*Physics* 239b14-16), the Arrow (*Physics* 239b5-9, 239b30-3), and the Moving Rows or the Stadium (*Physics* 239b33-40a1).

[6] Jacobi 1911, 1 note 2.

[7] Stcherbatsky 1927, 211 note 2; see also 86 and 107.

[8] Murti 1955, 178, 183-184.

[9] Siderits, O'Brien 1976, 281.

[10] Mabbett 1984, 402.

[11] See Bhattacharya 1980, Bhattacharya 1980-81, and Bhattacharya 1985.

and argued that Nāgārjuna's arguments have "nothing to do with Zeno's arrow paradox".[1] Then in 1987, Galloway disagreed with Bhattacharya's criticism of Siderits and O'Brien, and claimed that Nāgārjuna's arguments "can be most conveniently and clearly explained mathematico-physically."[2] McEvilley also accepts that there are close parallels between Zeno's and Nāgārjuna's arguments, suggesting thereby that the Greeks influenced Nāgārjuna's arguments on motion.[3]

The extent to which Nāgājuna's arguments are similar to those of Zeno remains unclear, but they are not without precedent in Indian literature. Thus, there is no need to invoke Greek influence in order to account for their occurrence in Nāgājuna's works.

Nāgājuna's arguments against motion employ a grammatical method of analysis. In the second chapter of the *Mūla Madhyamaka Kārika*, examination of motion (*gatāgata-parīkṣā*), Nāgārjuna says:

> If there were a twofold motion,
> The subject of that motion would be twofold.
> For without a subject of motion,
> There cannot be motion.[4]

Here Nāgārjuna argues that the act of moving requires an agent or mover, and if there are two acts of moving then there must be two agents or movers. Candrakīrti in his commentary on this verse says:

> As an activity necessarily requires certain factors for its realization, either an agent or an object, the activity of motion must reside in an agent and so requires a mover (*gantā*).[5]

According to Bhattacharya, Nāgārjuna's arguments are based on grammatical concepts that date back to Patañjali (c.2nd century BC), if not to Pāṇini himself (c.350 BC).[6] These concepts, he argues, are essential for Nāgārjuna's method of argument:

> I believe equally, however, that the Mādhyamika would never have been able to formulate his arguments against motion if he had not found in grammar the concepts which furnish him with the technical basis for them.[7]

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[1] Bhattacharya 1985, 9.

[2] Galloway 1987, 81.

[3] McEvilley 2002, 422-428.

[4] *Mūla Madhyamaka Kārika* (2.6), trans. Garfield 1995, 7 and 127.

[5] Trans. Sprung 1979, 80.

[6] Bhattacharya 1985, 12.

[7] Bhattacharya 1985, 13.

Hayes accepts Bhattacharya's analysis of Nāgārjuna's method:

> Bhattacharya finds it significant that hardly a single argument used by Nāgārjuna was unknown to the grammatical tradition. It is his indebtedness to the grammarians that distinguished Nāgārjuna from those Buddhists that preceded him and from the Greeks ... [1]

Hayes also notes Candrakīrti's debt to the grammarian Bhartṛhari.[2]

In chapter seven of the *Mūla Madhyamaka Kārika*, examination of the conditioned (*saṃskṛta-parīkṣā*), Nāgārjuna makes reference to the argument he previously used in the discussion on motion:

> The arisen, the non-arisen and that which is arising
>
> Do not arise in any way at all.
>
> Thus they should be understood
>
> Just like the gone, the not-gone, and the going.[3]

That is, the same arguments that are used in the section on motion, and that have been likened to Zeno's arguments, are also used in the refutation of events like arising. Warder notes that a similar argument is found in the *Paṭisambhidāmagga*:

> Treatise XXIII on *abhisamaya* ('convergence', insight) presupposes the forms of debate and the logical terminology of the *Kathāvatthu* ... The Treatise concludes with a remarkable argument (ii 217-8, §11) to the effect that neither a past defilement, nor a future defilement, nor a presently-arising defilement, is abandoned. This seems to go beyond some of the *Yamaka* discussions involving oppositions of times in the direction of the Madhyamaka ... [4]

The argument in the *Paṭisambhidāmagga* that Warder refers to is quoted here in full:

> [When] this [noble person] abandons defilements, [then] he abandons past defilements, abandons future defilements, abandons presently-arisen defilements?
>
> [Suppose that] he abandons past defilements. If he abandons past defilements, he destroys what has already been destroyed, causes to cease what has already ceased, causes to vanish what has already vanished, causes to subside what has already subsided. What is past, which is non-existent, that he abandons? He does not abandon past defilements.
>
> [Suppose that] he abandons future defilements. If he abandons future defilements, he abandons what has not been born, he abandons what has not been generated, he abandons what has not arisen, he abandons what has not become manifest. What is future, which is non-existent, that he abandons? He does not abandon future defilements.

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[1] Hayes 1994, 353.

[2] Hayes 1994, 375 note 24.

[3] *Mūla Madhyamaka Kārika* (7.14), trans. Garfield 1995, 20 and 167.

[4] Warder 1982, xxxvi.

[Suppose that] he abandons presently-arisen defilements. If he abandons presently-arisen defilements, then though inflamed with greed, he abandons greed, though corrupted by hate, he abandons hate, though deluded, he abandons delusion, though shackled, he abandons conceit [pride], though misapprehending, he abandons [false] view, though distracted, he abandons agitation, though undecided, he abandons uncertainty, though having inveterate habits, he abandons underlying-tendency, dark and bright ideas occur coupled together, and there is development of a path that has defilement.

He does not abandon past defilements, he does not abandon future defilements, he does not abandon presently-arisen defilements. If he does not abandon past defilements and he does not abandon future defilements, and he does not abandon presently-arisen defilements, then there is no development of the path, there is no realization of its fruition, there is no convergence of ideas?[1]

Warder dates the *Paṭisambhidāmagga* as probably 349 BC,[2] i.e. before Alexander's visit in 326-325 BC. However, he feels obliged to date Treatise XXIII, including the argument in question, as late as the 1st century BC since the argument is so similar to those of Nāgārjuna.[3] The exact date of this section of the *Paṭisambhidāmagga* remains unclear, but it is certainly earlier than Nāgārjuna (c.2nd century AD).

Thus, there are Indian precedents for Nāgārjuna's arguments on motion. These are found in the grammatical tradition and in the *Abhidharma* tradition. Also, the fourfold scheme of predication (*catuṣkoṭi*), nowadays called the tetralemma, has a history of use in India dating back to the days of the Buddha, i.e. before the Greeks first arrived in India. The view that Nāgārjuna argues against in the *Mūla Madhyamaka Kārika*, that elements of existence (*dharmas*) possess an essential nature (*svabhāva*), also has an Indian origin. Further, Nāgārjuna's style of argument, involving consequences (*prasaṅga*) and refutation only, has developmental stages in the Indian logical tradition. Nāgārjuna uses this style of argument throughout his works. In his *Vaidalya Prakaraṇa*, Nāgārjuna uses such arguments to refute the Nyāya system of logic. This shows that he is very well aware of the five-membered proof described in the *Nyāya Sūtra*. The combination of this evidence completely disproves McEvilley's claim that "the array of Greek dialectical forms turns up in India, mature, complete, and without evidence of developmental stages, in the school of Buddhist thought called Mādhyamika."[4]

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[1] Ñāṇamoli 1982, 389.

[2] Warder 1982, xxx.

[3] Warder 1982, xxxvii.

[4] McEvilley 2002, 416.

# Chapter eight: Greek works in India

The final argument for Greek influence in Indian logic is that the Greeks are known to have influenced Indian astronomy, and thus they must have influenced Indian logic as well. However, this argument does not prove that the Greeks definitely influenced Indian logic. It shows only that they could have done so and that claims of Greek influence in Indian logic should therefore be taken seriously.

## 8.1    Greek works taken to India

The arguments for Greek influence in Indian logic are supported by claims that Greek works were taken to India and translated into Indian languages. There are claims that Greek works influenced both types of logic in ancient India. The first type of logic is represented by the *Nyāya Sūtra* and the system of structured proofs governed by rules. Vidyābhūṣaṇa claims that Aristotle's works influenced the first type of logic:

> Aristotle's works were brought down to Alexandria (in Egypt) by Callimachus, the celebrated librarian of Ptolemy Philadelphus during 285-247 BC, and it seems that copies of some of these works reached India through Syria, Susiana, Bactria, and Taxila in subsequent times. From the stages in the development of the syllogism in Hindu logic ... it will appear that Aristotle's works migrated into India during three distinct periods.[1]

The second type of logic is represented by Nāgārjuna's Mādhyamika school and its system of dialectical refutations. McEvilley claims that Greek dialectical handbooks influenced the second type of logic:

> The cumulative heritage of seven hundred years of Greek dialectic was summed up in handbooks in and before the time of Sextus, and the contents of such a handbook, or their equivalent, may all be found in the Mādhyamika texts.[2]

> Between Gorgias's *On Nature, or On Non-Being* and Sextus's *Outlines of Pyrrhonism* there were scores of Greek dialectical books, no longer extant, at least one of which seems to have made its way to India during or shortly before the time of Nāgārjuna.[3]

> ... a dialectical handbook such as are known to have floated around the Hellenistic-Roman world–perhaps the famous one by Aenesidemus (*Pyrrhonic Discourses*), or by Cleitomachus, or Agrippa, or one of those by students of Arcesilaus and Carneades, or countless others, some by nameless authors or compliers–all containing more or less the same accumulated apparatus of arguments, any one capable of accounting for the entire argumentation of the early Mādhyamika thinkers ... [4]

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[1] Vidyābhūṣaṇa 1918, 486; repr. Vidyābhūṣaṇa 1920, 511.

[2] McEvilley 2002, 422.

[3] McEvilley 2002, 501. See also McEvilley 1982, 30.

[4] McEvilley 2002, 503.

That is, both types of Indian logic are said to be based on Greek works which had been taken to India and studied by Indians. The proponents of this view argue that these works could have travelled to India quite easily since there was a large amount of trade between India and the west.

## 8.2    Trade

Trade between India and the Mediterranean probably existed from very early times, both over land and by sea. Greek records show that trade by sea was common in the sixth century BC. Herodotus (484-424 BC) has preserved in his *History* a passage from a work by Skylax of Caryanda. Skylax was the first to write about India in Greek and his work now exists only in fragments. Herodotus quotes Skylax on his voyage down the Indus river. Darius, the king of Persia (522-486 BC), had sent Skylax to explore the Indus around 518-515 BC. The passage ends: "After this voyage was completed, Darius conquered the Indians, and made use of the sea in those parts".[1]

This trade may have originally used coastal boats,[2] but at some stage more direct routes between India and the Rea Sea ports serving Alexandria were used. The Greeks were probably not the first to sail directly to India; they originally traded through intermediaries in Arabian ports.[3] When Greek sailors learnt to use the seasonal monsoon winds to sail directly to India, there was a great increase in trade with India. This occurred during the rule of the Roman emperor Augustus (reigned 27 BC - 14 AD). A comment by the Greek geographer Strabo (c.63 BC-c.24 AD) describes the amount of trade with India around 25 BC:

> At any rate, when Gallus was prefect of Egypt, I accompanied him and ascended the Nile as far as Syene and the frontiers of Ethiopia, and I learned that as many as one hundred and twenty vessels were sailing from Myos Hormos to India, whereas formerly, under the Ptolemies, only a very few ventured to undertake the voyage and to carry on traffic in Indian merchandise.[4]

Myos Hormos (Mussel Harbour), identified with Abu Scha'ar, was one of the Rea Sea ports serving Alexandria. Strabo's reference to the dramatic increase in the number of ships sailing to India probably marks the beginning of direct voyages to India by Greek ships. The

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[1] *Herodotus* (IV 44), trans. Rawlinson 1910, 320-321.

[2] Karttunen 1997, 328.

[3] McCrindle 1879, 135; Tarn 1938, 370; and Casson 1989, 11-12.

[4] *Geography of Strabo* (2.5.12), trans. Jones 1917, **1**, 455. See also McCrindle 1901, 6 and 98.

credit for discovering a direct route was given to Hippalus, but he may have been simply the first Greek to sail directly to India.[1]

The *Periplus Maris Erythraei* (Circumnavigation of the Rea Sea) was written in the first century AD by a Greek merchant or sailor for traders who sailed the Red Sea, the coast of eastern Africa, southern Arabia and western India. The author of this work attributes the discovery of a direct route to India to Hippalus:

> The ship captain Hippalos, by plotting the location of the ports of trade and the configuration of the sea, was the first to discover the route over open water.[2]

Warmington suggests that Hippalus simply "helped to unravel a secret held perhaps for ages by Arabians and Indians, the Greeks knowing only that the winds existed."[3] In any event the monsoon winds used to sail directly from the Red Sea ports to Indian were called the Hippalus. Pliny (23-79 AD) describes in his *Natural History* (written 51-77 AD) the route from Alexandria to India and return as well as the times to sail. He mentions the time taken to reach India:

> But the most advantageous way of sailing to India is to set out from Cella; from that port it is a 40 days' voyage, if the Hippalus is blowing, to the first trading-station in India, Cranganore ... [4]

Pliny also mentions the amount of trade between India and Alexandria:

> And it will not be amiss to set out the whole of the voyage from Egypt, now that reliable knowledge of it is for the first time accessible. It is an important subject, in view of the fact that in no year does India absorb less than fifty million sesterces of our empire's wealth, sending back merchandise to be sold with us at a hundred times its prime cost.[5]

Later in his *Natural History*, Pliny says:

> And by the lowest reckoning India, China and the Arabian peninsula take from our empire 100 million sesterces every year–that is the sum our luxuries and our women cost us ... [6]

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[1] Rawlinson 1916, 91, 104-106; Tarn, Griffith 1927, 246-248; Warmington 1928, 6; Wheeler 1954, 115, 129; and Puskás 1987.

[2] *Periplus Maris Erythraei* (57.19.5-7), trans. Casson 1989, 87, see also 224. Also McCrindle 1879, 138.

[3] Warmington 1928, 47. See also McCrindle 1879, 135.

[4] *Natural History* (6.26.104), trans. Rackham 1938-63, 2, 419. See also McCrindle 1901, 111.

[5] *Natural History* (6.26.101-102), trans. Rackham 1938-63, 2, 417.

[6] *Natural History* (12.41.84), trans. Rackham 1938-63, 4, 63.

This implies that half the trade was with India. If 120 ships sailed each year to India in Strabo's day (around 25 BC), then by Pliny's time some 70-90 years later, the number of ships would be in the hundreds. Another indication of the level of commercial activity with India is the amount of money involved. Trade typically involved the exchange of Roman coins for goods, rather than the exchange of goods for goods. The cost of this trade was so great that the emperor Tiberius (reigned 14-37 AD) felt compelled to write a letter to the Senate drawing attention to the damaging drainage of wealth.[1] The importation of exotic luxuries only increased during Nero's reign. This has been confirmed by archaeological evidence. Sedlar explains that large numbers of Roman coins have been found in India. These bear dates ranging over five and a half centuries, but there are more coins belonging to the period from Augustus (reigned 29 BC-14 AD) to Nero (reigned 54-68 AD) than for any other period.[2] Barnett in a description of the commercial relations between India and the west says:

> The direct trade of the Roman Empire with India, founded by Augustus, reached its acme between 50 and 100 AD, and then began to decline. It was mainly concerned with the importation of Oriental luxuries and treasures into the West. After the reign of Caracalla, who in 215 massacred the Alexandrians and the traders in their port, ... the trade almost disappeared as the Roman world sank deeper into bankruptcy; but under the Byzantine emperors it revived slightly for a time, as a small amount of industrial products began to be imported, chiefly from the south-western coast of India, and then again disappeared.[3]

The massive amount of trade between India and Alexandria must have involved large numbers of ships plying these trade routes on a regular basis. According to McEvilley:

> This trade may have flagged during the third century AD due to wars and generally unsettled conditions in the Roman Empire, but it resurged in the fourth, and in both the second and the fourth centuries whole Greek books are known to have passed along this route to India, to have been translated into Indian languages, and to have exerted a permanent and significant influence there.[4]

The Greek books that McEvilley refers to here are probably books on astronomy.

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[1] Sedlar 1980, 95.

[2] Sedlar 1980, 95.

[3] Barnett 1917-20, 104. See also Sedlar 1980, 96-97.

[4] McEvilley 2002, 350. See also McEvilley 2002, 380.

## 8.3 Astronomy

**Argument for Greek influence**

There is strong support for Greek influence in Indian astronomy. Pingree has long argued for significant foreign influence in Indian astronomy:

> That Indian astronomy was not completely static is due almost entirely to the repeated intrusion of new theories from the West. Five times have such intrusions occurred–in the fifth century BC, from Mesopotamia via Iran; in the second and third centuries AD, from Mesopotamia via Greece; in the fourth century AD, directly from Greece; in the tenth to eighteenth centuries, from Iran; and in the nineteenth century, from England.[1]

The earliest traces of astronomy in India are found in Vedic texts, an ancient body of literature that was gradually compiled between 2000 and 1000 BC. These works describe the correct times for performing rituals and their terminology was adopted in later astronomical works. This terminology includes names for various periods (*yugas*), years (*saṃvatsaras*), half-years (*ayanas*), seasons (*ṛtus*), months (*māsas*), intercalary months (*adhimāsas*), half-months (*pakṣas*), as well as constellations (*nakṣatras*). The earliest astronomical works form the *Jyotiṣa Vedāṅga* (Astronomical Section of the Vedas)[2] which is associated with Lagadha.[3]

The origin of the early astronomical ideas is the subject of some dispute. Pingree argues that the fundamental concepts of the *Jyotiṣa Vedāṅga* can be traced to Mesopotamia. This influence, he suggests, entered India when the Achaemenids dominated northwest India during the period after Darius the Great annexed the Indus valley around 515 BC up until Alexander the Great conquered the same area in 326 BC.[4] Achar disagrees with Pingree, arguing instead that there is absolutely no need to invoke a Mesopotamian origin for the astronomical ideas in the *Jyotiṣa Vedāṅga* since every astronomical concept it describes can be traced to Vedic sources.[5]

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[1] Pingree 1978a, 533; summarised in Pingree 1996a.

[2] Trans. Sarma 1985.

[3] Pingree's date for Lagadha is 400 BC, while others argue for an earlier date. See Achar 1997.

[4] Pingree 1963 and 1973.

[5] Achar 1997 and 1998.

A later period in Indian astronomy is from the second to the fourth centuries AD, when trade between India and the Roman Empire was at its height. Pingree maintains that Greek treatises on astrology were translated into Sanskrit during this period:

> In 150 AD Yavaneśvara, the Lord of the Greeks, translated into Sanskrit prose a Greek astrological text which had been written in Alexandria in the preceding half-century. This translation is now lost, but there is preserved in an early thirteenth-century palm-leaf manuscript in Kathmandu a versification of it made in 270 by the Yavanarāja Sphujidhvaja. In the second century another Greek text on the same subject was translated into Sanskrit; this text and Yavaneśvara's were both used by a third-century author named Satya. Unfortunately, the second translation from the Greek is lost, and Satya's work is known only from the citations of later astrologers and in what appears to be a fairly recent forgery. However, there has survived a work based on both Sphujidhvaja and Satya; this is the Vṛddhayavanajātaka of Mīnarāja.[1]

He further adds:

> Other Sanskrit translations of Graeco-Babylonian texts in this period include the Vasiṣṭha, Romaka, and Pauliśa siddhāntas, which we know of only through the somewhat incompetent summaries provided by Varāhamihira in the Pañcasiddhāntikā that he wrote in about 550.[2]

Pingree analyses the astronomical theories recorded in Indian works during the period from the second to fourth centuries AD and concludes that:

> There seems to be very little in it that one can positively assert to have originated in India, and the overwhelming accumulation of evidence pointing to at least four Greek sources, transformed in Western India into the Yavanajātaka and the siddhāntas of Vasiṣṭha, Romaka, and Pauliśa.[3]

The Yavanajātaka (Greek Genethlialogy)[4] and the Pañcasiddhāntikā (Commentary on Five Works),[5] containing the works of Vasiṣṭha, Romaka and Pauliśa, are both available in English translation.

A later period beginning in the fifth century AD is characterised by a planetary theory that Pingree argues was inspired by the Greeks, and he claims that probably two more Greek works[6] were translated into Sanskrit during this period.[7] This position has been disputed.[8]

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[1] Pingree 1963, 234-235. See also Kane 1955; and Jairazbhoy 1963, 73.

[2] Pingree 1996a, 125-126.

[3] Pingree 1976, 114. See also Pingree 1996b.

[4] Pingree 1978b.

[5] Neugebauer, Pingree 1970-71.

[6] Pingree 1976, 121.

[7] Pingree 1976, 115; and Pingree 1978a, 555. See also Pingree 1971.

[8] van der Waerden, Pingree 1980.

## Evidence for Greek influence

There is some uncertainty over specific details, but there is general agreement that some Greek works were translated into Sanskrit and studied in India, and the most compelling evidence seems to be associated with the period when trade between India and Alexandria was at its height, i.e. between the first and fourth centuries AD.

The evidence supporting this position can be classified into four types: Firstly, Indian authors refer to book titles that appear to have western origins. The *Romaka Compendium* and *Paulisa Compendium*, in particular, appear to contain Sanskrit transliterations of "Rome" and "Paulus" respectively.

Secondly, there are many terms that appear to have a Greek or Latin origin. The signs of the zodiac, for instance, first appeared in Indian literature in the *Yavanajātaka*.[1] Lists comparing the Greek, Latin and Sanskrit names for these signs, and for the names of planets, have been published many times since 1827.[2] The Indian names appear to be either translations or transliterations of their western counterparts. The similarity between these names has been noted by a number of authors.[3]

Greek astronomical terms also appear in rock inscriptions. Chakravarty describes inscriptions written in the Kharoṣṭhī script that are associated with the Śaka and Kushān rulers who controlled northwest India from the first century BC to the third century AD. These inscriptions are dated in years, months and days. Chakravarty explains that: "The Kharoṣṭhī inscriptions mention months by Greek names, Sanskrit names and sanskritized Greek names."[4]

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[1] Pingree 1976, 112.

[2] Noted by Burgess 1893, 746. Reference is to C.M. Whish 1827 'On the antiquity of the Hindu zodiac'. *Transactions of the Madras Library.*

[3] See for instance: Weber 1878, 255; Vogel 1912, 40; Rawlinson 1914, 236; Rawlinson 1916, 173; Kaye 1924, 40; Jairazbhoy 1963, 71; and Sagar 1992, 260. Burgess 1864-66, 327-328; and Das 1928, 75-77, both argue that the lunar divisions of the zodiac have an Indian origin.

[4] Chakravarty 1988, 21. Karttunen 1997, 318, mentions that two sun-dials were found during excavations at Ai Khanum.

Thirdly, there are references to westerners (Greeks or Romans) by Indian writers. For instance, Varāhamihira (c.550 AD) says in his *Bṛhatsaṃhitā* (2.14):

> For although the Greeks are barbarians, they have brought this science to perfection and so are honoured as sages; how much more honourable, then, is an astrologer who is a Brāhmaṇa![1]

Pingree mentions another instance where reference is made to westerners. This is in a passage quoted by Bhāskara (AD 629) in his commentary on the *Āryabhaṭīya* of Āryabhaṭa (AD 499):

> Here the Romakas [*i.e.*, Romans], who do not know the ultimate purpose read: 'The sages say that an ayana [begins] from the beginning of Vasudeva [Dhaniṣṭā] ... [2]

Kay mentions that "Varāha Mihira, Brahmagupta [c.630 AD] and others refer to Greek astronomers",[3] and Kern says that Utpala (c.966 AD) also refers to "the ancient Greeks".[4]

Lastly, there is the correspondence in the ideas and methods used in both Indian and Greek astronomy. Much of this evidence is of a technical nature and can be appreciated only when the details of the relevant astronomical systems are closely compared. Pingree has made an extensive study of these similarities.[5] He lists the things found in the Indian astronomical systems that appear to have a Greek origin. These are:

> ... adoptions of Babylonian lunar and planetary theories; the year-length of Hipparchus, an adaptation of his coordinate-system for the fixed stars, and his theories of precession and trepidation; tables of chords transformed into tables of sines; Peripatetic planetary models employing double epicycles and concentres with equants; non-Ptolemaic planetary models combining an eccentre with an epicycle; the solution of problems in spherical astronomy by means of gnomons and analemmata; the computation and, probably, the projection of eclipses; the essential data for computing planetary parameters; models for determining planetary latitudes; and the basic theory used in determining planetary distances.[6]

These four types of evidence are exactly the types of evidence that should be found in Indian works on logic if the Greeks had influenced Indian logicians as has been claimed.

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[1] Pingree 1978b, 1. Das 1928, 72-73, dismisses this quotation as evidence of Greek influence in Indian astronomy.

[2] Pingree 1972, 28.

[3] Kaye 1924, 39. See also Das 1928, 72-73.

[4] Kern 1865, 597-598. See also Kane 1955, 3.

[5] See especially Pingree 1978a.

[6] Pingree 1976, 109-110.

## A model for logic

The evidence supporting Greek influence in Indian astronomy is used to argue for Greek influence in other Indian disciplines. Weber, for instance, uses this argument:

> It was, however, Greek influence that first infused a real life into Indian astronomy. This occupies a much more important position in relation to it than has hitherto been supposed; and the fact that this is so, *eo ipso* implies that Greek influence affected other branches of the literature as well, even though we may be unable at present directly to trace it elsewhere.[1]

McEvilley also makes the same point:

> Greek input into Indian astronomy is known, on hard evidence, to have been serious and major, as was Greek input into Indian Buddhist art. The idea that Greek input into Buddhist philosophy may have been important during the same period flows naturally from these facts.[2]

That is, given the evidence of Greek influence in Indian astronomy, there may well have been similar influence in other Indian disciples, philosophy and logic in particular. Supporting this argument is the fact that Greek influence in Indian logic would involve the same communities living in the same places and at the same times as those involved in the case of Greek influence in Indian astronomy. McEvilley argues that the two cases are parallel:

> If a complex Greek astronomical work could arrive whole in India and there be understood and assimilated, there is no reason to doubt that a complex Greek philosophical work could have the same fate–for example, the lost book of Aenesidemus, or that of Agrippa, or some of Sextus Empiricus's works ... [3]

However, if the two cases are parallel then the evidence in support of each case should be similar. That is, if the Greeks influenced Indian logic as they influenced Indian astronomy then there should be the same types of evidence found in Indian works on logic as there are found in Indian works on astronomy. But there is no such evidence.

Firstly, there are no known references in any Indian work on logic to any book title that appears to have a western origin. All references are to works that are clearly Indian. Secondly, there are no known instances where Indian works use logical terms that appear to have a western origin. There is no hint of anything resembling a translation or transliteration of a Greek or Latin logical term. Thirdly, there are no known cases where Indian logicians refer to western authors. They refer exclusively to Indian authors.

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[1] Weber 1878, 251.

[2] McEvilley 2002, 390.

[3] McEvilley 2002, 385.

The fact that no Indian work on logic ever mentions a Greek work, term or author does not prove that the Greeks had no influence in Indian logic. Vogel, for instance, mentions that: "In the whole of Sanskrit literature not a single reference is found to the Macedonian hero and to his invasion of the Land of the Five Rivers."[1] Lévi mentions the same point: "The name of Alexander the Great ... has not yet been discovered even in a single Indian text."[2] McEvilley uses this example to dismiss the fact that no Indian work on logic every makes reference to anything Greek:

> The fact that no Indian text mentions this is simply not important: No Indian text is known to mention Alexander the Great either, though he left some forty colonies in northwest India and seems to have had a major influence on the development of the Mauryan Empire.[3]

That is, the fact that Alexander is never mentioned in Indian literature does not prove that he did not conquer northwest India. Similarly, the fact that no Indian work on logic ever makes a reference to anything Greek is not proof that the Greeks had no influence in Indian logic. However, it is equally true that Greek influence in Indian astronomy does not prove that the Greeks influenced Indian logic. It proves only that they could have influenced Indian logic and this shows only that claims of Greek influence in Indian logic should be taken seriously.

The more compelling reason involves the last of the four types of evidence found in the case of Greek influence in Indian astronomy. That is, McEvilley and others claim that the concepts and techniques used in Indian logic are similar to those used in Greek logic. The degree of similarity is the subject of some dispute, but even allowing that there is a high degree of similarity, this does not on its own prove that the Greeks influenced Indian logic. If the mere fact that Indian and Greek logic are similar were sufficient reason to prove that the Greeks influenced Indian logic, then it would also be sufficient reason to prove the very opposite, i.e. that the Indians influenced Greek logic. Additional reasons must be added to the mere fact of similarity. McEvilley adds the reason that logic appears in Indian literature complete and without any evidence of prior developmental stages. He then argues that only Greek influence can account for the sudden appearance of this logic in Indian literature.

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[1] Vogel 1912, 33.

[2] Lévi 1936, 121.

[3] McEvilley 2002, 501. See also McEvilley 1982, 30.

The deep problem with this argument is that, as shown above, there are developmental stages for both types of logic that McEvilley claims were the result of Greek influence. The first type of logic is a system of structured proofs governed by rules. McEvilley claims that this system appeared first in the *Nyāya Sūtra* complete and without prior developmental stages.[1] However, there are prior developmental stages for the five-part proof in *Nyāya Sūtra*. These are found in the *Caraka Saṃhitā*, which describes not only the five-part proof but also the five epistemic terms that together made up the original ten-membered proof. Vātsyāyana in his commentary on the *Nyāya Sūtra* also explains that ancient Indian logicians accepted a ten-membered proof. Bhadrabāhu describes another version of a ten-part proof and yet another version is found in the *Kathāvatthu*.

The second type of logic is a system of dialectics. McEvilley claims that this system appeared first in Nāgārjuna's works complete and without prior developmental stages.[2] However, there are precedents for a style of argument that involves refutation only. These are the term wrangle (*vitaṇḍā*) in both the *Nyāya Sūtra* and the *Caraka Saṃhitā*. Also, the debates in both the *Kathāvatthu* and the *Vijñānakāya* are negative in the sense that they attempt to refute an opponent without attempting to establish an alternate position. Further, the so-called hair-splitters who lived in the days of the Buddha also devised purely negative arguments. The Indian precedents for using consequences (*prasaṅga*) are the futile rejoinders (*jāti*) in the *Nyāya Sūtra*, the refutations (*dūṣaṇa*) in the *Upāyahṛdaya* and the rejoinders (*uttara*) in the *Caraka Saṃhitā*. The Indian precedents for using the tetralemma (*catuṣkoṭi*) are many since it has a history of use in India dating back to the days of the Buddha, i.e. before the Greeks first arrived in India.

These instances of developmental stages for the system of structured proofs in the *Nyāya Sūtra* and for the system of dialectics in Nāgārjuna's works completely undermines McEvilley's argument that these two systems appear without prior developmental stages and that only Greek influence can account for their sudden appearance in Indian literature. Further, the very argument that McEvilley uses to support his claim of Greek influence is in fact used rather selectively. Not only does this argument not apply in the case of Indian logic, but it actually applies in the case of Greek logic. That is, the Aristotelian syllogism appears

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[1] McEvilley 2002, 515.

[2] McEvilley 2002, 416 and 500. See also McEvilley 1982, 28.

complete and without any prior developmental stages in the Greek tradition. However, the complete absence of any developmental stages for the Aristotelian syllogism is not considered by McEvilley as proof of outside influence in Greek logic, whereas the absence of developmental stages is claimed to be proof of outside influence in Indian logic.

This thesis does not prove that the Greeks had no influence in Indian logic. What it does prove is the claim that logic appeared in Indian literature complete and without developmental stages is false. It does this by setting out the all the stages in the development of early Indian logic from the very earliest records up to the *Nyāya Sūtra* and Nāgārjuna. This shows that the argument that only Greek influence can account for logic in India is not convincing.

The burden of proof is on those making the claim that there was Greek influence in Indian logic. The arguments put forward thus far to support this claim have been found unconvincing. It is now up to those claiming that Indian logic was influenced by the Greeks to produce the arguments to prove their claims.

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Sources are in two sections: the traditional sources are listed alphabetically by their titles in the language in which they are commonly known, followed by English translations in chronological order. Modern sources are listed alphabetically by author in the normal manner. This order ignores the diacritical marks required to correctly transliterate Indian languages. Where more than one publication year is given for a source, the underlined year indicates the version used in references.

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