Buddhist logico-epistemology

Buddhist logico-epistemology is *a* term used in Western scholarship for *pramāṇa-vāda* (doctrine of proof) and *Hetu-vidya* (science of causes). Pramāṇa-vāda is an epistemological study of the nature of knowledge; Hetu-vidya is a system of logic.[1] These models developed in India during the 5th through 7th centuries.

The early Buddhist texts show that the historical Buddha was familiar with certain rules of reasoning used for debating purposes and made use of these against his opponents. He also seems to have held certain ideas about epistemology and reasoning, though he did not put forth a logico-epistemological system. The structure of debating rules and processes can be seen in the early Theravada text the Kathāvatthu.

The first Buddhist thinker to discuss logical and epistemic issues systematically was Vasubandhu in his *Vāda-vidhi* ("A Method for Argumentation"), who was influenced by the Hindu work on reasoning, the *Nyāya-sūtra*.[2]

A mature system of Buddhist logic and epistemology was founded by the Buddhist scholar Dignāga (c. 480–540 CE) in his *magnum opus*, the *Pramāṇa-samuccaya*.[3][4] Dharmakirti further developed this system with several innovations. Dharmakirti's *Pramanavarttika* ('Commentary on Valid Cognition') became the main source of epistemology and reasoning in Tibetan Buddhism.[5]

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Definition

Scholars such as H.N. Randle and Fyodor Shcherbatskoy (1930s) initially employed terms such as “Indian Logic” and “Buddhist Logic” to refer to the Indian tradition of inference (anumana), epistemology (pramana) and 'science of causes' (*hetu-vidya*). This tradition developed in the orthodox Hindu tradition known as Nyaya as well as in Buddhist philosophy. Logic in classical India, writes Bimal Krishna Matilal, is "the systematic study of informal inference-patterns, the rules of debate, the identification of sound inference vis-à-vis sophistical argument, and similar topics".[6] As Matilal notes, this tradition developed out systematic debate theory (*vadavidya*):

> Logic as the study of the form of correct arguments and inference patterns, developed in India from the methodology of philosophical debate. The art of conducting a philosophical debate was prevalent probably as early as the time of the Buddha and the Mahavira (Jina), but it became more systematic and methodical a few hundred years later.[7]

‘Indian Logic’ should be understood as being a different system of logic than modern classical logic (e.g. modern predicate calculus), but as *anumāna*-theory, a system in its own right.[8] ‘Indian Logic’ was also influenced by the study of grammar, whereas Classical Logic which principally informed modern Western Logic was influenced by the study of mathematics.[9]

A key difference between Western Logic and Indian Logic is that certain epistemological issues are included within Indian Logic, whereas in modern Western Logic they are deliberately excluded. Indian Logic includes general questions regarding the ‘nature of the derivation of knowledge’, epistemology, from information supplied by evidence, evidence which in turn may be another item of knowledge.[9] For this reason, other scholars use the term "logico-epistemology" to refer to this tradition, emphasizing the centrality of the epistemic project for Indian logical reasoning.[10][11][12] According to Georges Dreyfus, while Western logic tends to be focused on formal validity and deduction:

> The concern of Indian "logicians" is quite different. They intend to provide a critical and systematic analysis of the diverse means of correct cognition that we use practically in our quest for knowledge. In this task, they discuss the nature and types of pramana. Although Indian philosophers disagree on the types of cognition that can be considered valid, most recognize perception and inference as valid. Within this context, which is mostly epistemological and practically oriented, topics such as the nature and types of correct reasoning that pertain to logic in the large sense of the word are discussed.[13]

Pramana

Pramāṇa (Tib. *tshad ma*) is often translated as "valid cognition" or "instrument of knowledge" and refers to epistemic ways of knowing. Decisive in distinguishing Buddhist pramana from what is generally understood as Orthodox Hindu philosophy is the issue of epistemological justification. All schools of Indian logic recognize various sets of 'valid justifications for knowledge' or *pramana*. Buddhist logico-epistemology was influenced by the Nyāya school's methodology, but where the Nyaya recognised a set of four pramanas—perception, inference, comparison and testimony—the Buddhists (i.e. the school of Dignaga) only recognized two: perception and inference. For Dignaga, comparison and testimony are just special forms of inference.[14]

Most Indic *pramanavada* accept 'perception' (Sanskrit: pratyakṣa) and 'inference' (Sanskrit: anumāna), but for some schools of orthodox Hinduism the 'received textual tradition' (Sanskrit: āgamāḥ) is an epistemological category equal to perception and inference. The Buddhist logical tradition of Dignaga and Dharmakirti accept scriptural tradition *only* if it accords with pratyakṣa and anumāna. This view is thus in line with the Buddha's injunction in the *Kalama Sutta* not to accept anything on mere tradition or scripture.[15]

Overview

Early Buddhist background

Epistemology

The time of the Buddha Gautama was a lively intellectual culture with many differing philosophical theories. KN Jayatilleke, in his "Early Buddhist Theory of Knowledge", uses the Pali Nikayas to glean the possible epistemological views of the historical Buddha and those of his contemporaries. According to his analysis of the Sangarava Sutta, during the Buddha's time, Indian views were divided into three major camps with regards to knowledge:[16]

- The Traditionalists (Anussavika) who regarded knowledge as being derived from scriptural sources (the Brahmins who upheld the Vedas).
- The Rationalists (Takki Vimamsi) who only used reasoning or *takka* (the skeptics and materialists).
- The "Experientialists" who held that besides reasoning, a kind of supra-normal yogic insight was able to bring about unique forms of knowledge (the Jains, the middle and late Upanishadic sages).

The Buddha rejected the first view in several texts such as the Kalama sutta, arguing that a claim to scriptural authority (*sadda*) was not a source of knowledge, as was claimed by the later Hindu Mimamsa school.[17] The Buddha also seems to have criticized those who used reason (*takka*). According to Jayatilleke, in the Pali Nikayas, this term refers "primarily to denote the reasoning that was employed to construct and defend metaphysical theories and perhaps meant the reasoning of sophists and dialecticians only in a secondary sense".[18] The Buddha rejected metaphysical speculations, and put aside certain questions which he named the unanswerables (*avyakatas*), including questions about the soul and if the universe is eternal or not.

The Buddha's epistemological view has been a subject of debate among modern scholars. Some such as David Kalupahana, have seen him first and foremost as an empiricist because of his teaching that knowledge required verification through the six sense fields (ayatanas).[19] The Kalama sutta states that verification through one's own personal experience (and the experiences of the wise) is an important means of knowledge.[20]

However, the Buddha's view of truth was also based on the soteriological and therapeutic concern of ending suffering. In the "Discourse to Prince Abhaya" (MN.I.392–4) the Buddha states that a belief should only be accepted if it leads to wholesome consequences.[21] This has led scholars such as Mrs Rhys Davids and Vallée-Poussin to see the Buddha's view as a form of Pragmatism.[22][23] This sense of truth as what is useful is also shown by the Buddha's parable of the arrow.

K. N. Jayatilleke sees Buddha's epistemological view as empirically based which also includes a particular view of causation (dependent origination): "*inductive* inferences in Buddhism are based on a theory of causation. These inferences are made on the data of perception. What is considered to constitute knowledge are direct inferences made on the basis of such perceptions."[24] Jayatilleke argues the Buddhas statements in the Nikayas tacitly imply an adherence to some form of correspondence theory, this is most explicit in the 'Apannaka Sutta'. He also notes that Coherentism is also taken as a criterion for truth in the Nikayas, which contains many instances of the Buddha debating opponents by showing how they have contradicted themselves.[25] He also notes that the Buddha seems to have held that utility and truth go hand in hand, and therefore something which is true is also useful (and vice versa, something false is not useful for ending suffering).[26] Echoing this view, Christian Coseru writes:

> canonical sources make quite clear that several distinct factors play a crucial role in the acquisition of knowledge. These are variously identified with the testimony of sense experience, introspective or intuitive experience, inferences drawn from these two types of experience, and some form of coherentism, which demands that truth claims remain consistent across the entire corpus of doctrine. Thus, to the extent that Buddhists employ reason, they do so primarily in order further to advance the empirical investigation of phenomena.[27]

Debate and analysis

The Early Buddhist Texts show that during this period many different kinds of philosophers often engaged in public debates (*vivada*). The early texts also mention that there was a set procedure (*patipada*) for these debates and that if someone does not abide by it they are unsuitable to be debated.[28] There also seems to have been at least a basic conception of valid and invalid reasoning, including, according to Jayatilleke, fallacies (*hetvabhasah*) such as *petitio principii*.[29] Various fallacies were further covered under what were called *nigrahasthana* or "reasons for censure" by which one could lose the debate. Other *nigrahasthanas* included *arthantaram* or "shifting the topic", and not giving a coherent reply.[30]

According to Jayatilleke, 'pure reasoning' or 'a priori' reasoning is rejected by the Buddha as a source of knowledge.[31] While reason could be useful in deliberation, it could not establish truth on its own.

In contrast to his opponents, the Buddha termed himself a defender of 'analysis' or 'vibhajjavada'. He held that after proper rational analysis, assertions could be classified in the following way:[32]

- Those which can be asserted or denied categorically (*ekamsika*)
- Those which cannot be asserted or denied categorically (*anekamsika*), which the Buddha further divided into:
  - Those which after analysis (*vibhajja-*) could be known to be true or false.
  - Those like the avyakata-theses, which could not be thus known.

This view of analysis differed from that of the Jains, which held that all views were *anekamsika* and also were relative, that is, they were true or false depending on the standpoint one viewed it from (anekantavada).

The early texts also mention that the Buddha held there to be 'four kinds of explanations of questions".[33]

- a question which ought to be explained categorically
- a question which ought to be answered with a counter question
- a question which ought to be set aside (*thapaniya*)
- a question which ought to be explained analytically

The Buddha also made use of various terms which reveal some of his views on meaning and language. For example, he held that many concepts or designations (*paññatti*) could be used in conventional everyday speech while at the same time not referring to anything that exists ultimately (such as the pronouns like "I" and "Me").[34] Richard Hayes likewise points to the Potthapada sutta as an example of the Early Buddhist tendency towards a nominalist perspective on language and meaning in contrast to the Brahmanical view which tended to see language as reflecting real existents.[35]

The Buddha also divided statements (bhasitam) into two types with regards to their meaning: those which were intelligible, meaningful (*sappatihirakatam*) and those meaningless or incomprehensible (*appatihirakatam*).[36] According to Jayatilleke, "in the Nikayas it is considered meaningless to make a statement unless the speaker could attach a verifiable content to each of its terms."[37] This is why the Buddha held that statements about the existence of a self or soul (atman) were ultimately meaningless, because they could not be verified.

The Buddha, like his contemporaries, also made use of the "four corners" (catuṣkoṭi) logical structure as a tool in argumentation. According to Jayatilleke, these "four forms of predication" can be rendered thus:[38]

1. S is P, e.g. *atthi paro loko* (there is a next world).
2. S is not P, e.g. *natthi paro loko* (there is no next world).
3. S is and is not P, e.g. *atthi ca natthi ca paro loko* (there is and is no next world).
4. S neither is nor is not P, e.g. *n'ev'atthi na natthi paro loko* (there neither is nor is there no next world)

The Buddha in the Nikayas seems to regard these as "'the four possible positions' or logical alternatives that a proposition can take".[39] Jayatilleke notes that the last two are clearly non-Aristotelian in nature. The Buddhists in the Nikayas use this logical structure to analyze the truth of statements and classify them. When all four were denied regarding a statement or question, it was held to be meaningless and thus set aside or rejected (but *not negated*).[40]

Two levels of Truth

The early texts mention two modes of discourse used by the Buddha. Jayatilleke writes:

> when he is speaking about things or persons we should not presume that he is speaking about entities or substances; to this extent his meaning is to be inferred (neyyattha-). But when he is pointing out the misleading implications of speech or using language without these implications, his meaning is plain and direct and nothing is to be inferred (nitattha-). This is a valid distinction which certainly holds good for the Nikāyas at least, in the light of the above-statement.[41]

The later commentarial and Abhidharma literature began to use this distinction as an epistemic one. They spoke of two levels of truth, the conventional (samutti), and the absolute (paramattha).[42] This theory of double truth became very influential in later Buddhist epistemic discourse.

Kathāvatthu

The Theravada Kathāvatthu (points of controversy) is a Pali Buddhist text which discusses the proper method for critical discussions on doctrine. Its date is debated by scholars but it might date to the time of Ashoka (C. 240 BC).[43] Western scholarship by St. Schayer and following him A. K. Warder, have argued

that there is an "anticipations of propositional logic" in the text.[44] However, according to Jonardon Ganeri "the leading concern of the text is with issues of *balance* and *fairness* in the conduct of a dialogue and it recommends a strategy of argumentation which guarantees that both parties to a point of controversy have their arguments properly weighed and considered."[45]

In the Kathāvatthu, a proper reasoned dialogue (*vadayutti*) is structured as follows: there is a point of contention - whether A is B; this is divided into several 'openings' (*atthamukha*):[45]

1. Is A B?
2. Is A not B?
3. Is A B everywhere?
4. Is A B always?
5. Is A B in everything?
6. Is A not B everywhere?
7. Is A not B always?
8. Is A not B in everything?

These help clarify the attitude of someone towards their thesis in the proceeding argumentative process. Jonardon Ganeri outlines the process thus:

> Each such 'opening' now proceeds as an independent dialogue, and each is divided into five stages: the way forward (anuloma), the way back (patikamma), the refutation (niggaha), the application (upanayana) and the conclusion (niggamana). In the way forward, the proponent solicits from the respondent the endorsement of a thesis, and then tries to argue against it. In the way back, the respondent turns the tables, soliciting from the proponent the endorsement of the counter-thesis, and then trying argue against it. In the refutation, the respondent, continuing, seeks to refute the argument that the proponent had advanced against the thesis. The application and conclusion repeat and reaffirm that the proponent's argument against the respondent's thesis is unsound, while the respondent's argument against the proponent's counter-thesis is sound.[45]

Milinda-panha

Another Buddhist text which depicts the standards for rational debate among Buddhists is the Milindapanha ("Questions of Menander", 1st century BCE) which is a dialogue between the Buddhist monk Nagasena and an Indo-Greek King. In describing the art of debate and dialogue, Nagasena states:

> When scholars talk a matter over one with another, then is there a winding up, an unravelling, one or other is convicted of error, and he then acknowledges his mistake; distinctions are drawn, and contra-distinctions; and yet thereby they are not angered.[46]

The various elements outlined here make up the standard procedure of Buddhist debate theory. There is an 'unravelling' or explication (*nibbethanam*) of one's thesis and stances and then there is also a 'winding up' ending in the censure (*niggaho*) of one side based on premises he has accepted and the rejoinders of his opponent.[46]

Abhidharma

The Buddhist Abhidharma schools developed a classification of four types of reasoning which became widely used in Buddhist thought. The Mahayana philosopher Asanga in his Abhidharma-samuccaya, outlines these four reasons (*yukti*) that one may use to inquire about the nature of things. According to Cristian Coseru these are:[27]

1. The principle of dependence (apeksāyukti), which takes into account the fact that conditioned things necessarily arise in dependence upon conditions: it is a principle of reason, for instance, that sprouts depend on seeds.
2. The principle of causal efficacy (kāryakāranayukti), which accounts for the difference between things in terms of the different causal conditions for their apprehension: it is a principle of reason, thus, that, in dependence upon form, a faculty of vision, and visual awareness, one has visual rather than, say, auditory or tactile experiences.
3. The realization of evidence from experience (sāksātkriyāsādhanayukti). We realize the presence of water from moisture and of fire from smoke.
4. The principle of natural reasoning, or the principle of reality (dharmatāyukti), which concerns the phenomenal character of things as perceived (for instance, the wetness and fluidity of water).

According to Coseru "what we have here are examples of natural reasoning or of reasoning from experience, rather than attempts to use deliberative modes of reasoning for the purpose of justifying a given thesis or arguing for its conditions of satisfaction."[27]

Nyaya

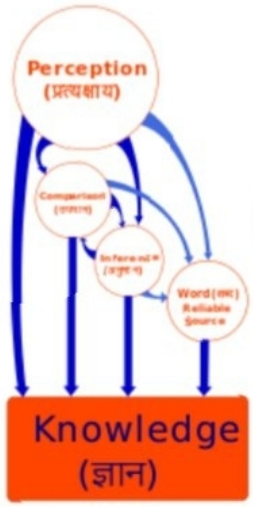
The Nyāya Sūtras of Gotama (c. 1st or 2nd century CE) is the founding text of the Nyaya school. The text systematically lays out logical rules for argumentation in the form of a five step schema and also sets forth a theory of epistemology.[47] According to Jonardon Ganeri, the Nyaya sutra brought about a transformation in Indian thinking about logic. First, it began a shift away from interest in argumentation and debate towards the formal properties of sound inference. Secondly the Nyaya sutra led a shift to rule governed forms of logical thinking.[47]

BK Matilal outlines the five steps or limbs of the Nyaya method of reasoning as follows:[48]

1. There is fire on the hill. [thesis]
2. For there is smoke. [reason]
3. (Wherever there is smoke, there is fire), as in the kitchen. [example]
4. This is such a case (smoke on the hill).
5. Therefore, it is so, i.e., there is fire on the hill.

Later Buddhist thinkers like Vasubandhu would see several of these steps as redundant and would affirm that only the first two or three were necessary.[48]

The Naiyayikas (the Nyaya scholars) also accepted four valid means (*pramaṇa*) of obtaining valid knowledge (*pramana*) - perception (*pratyakṣa*), inference (*anumāna*), comparison (*upamāna*) and word/testimony of reliable sources (*śabda*).



Nyayasutras

The Nyaya school considers perception, inference, comparison/analogy, and testimony from reliable sources as four means to correct knowledge, holding that perception is the ultimate source of such knowledge.

The systematic discussions of the Nyaya school influenced the Medieval Buddhist philosophers who developed their own theories of inferential reasoning and epistemic warrant (pramana). The Nyaya became one of the main opponents of the Buddhists.

Mahayana Buddhist philosophy

Nagarjuna (c. 150 – c. 250 CE), one of the most influential Buddhist thinkers, defended the theory of the emptiness (shunyata) of phenomena and attacked theories which posited an essence or true existence (svabhava) to phenomena in his magnum opus The Fundamental Verses on the Middle Way.[49] He used the Buddhist catuṣkoṭi ("four corners" or "four positions") to construct reductio ad absurdum arguments against numerous theories which posited essences to certain phenomena, such as causality and movement. In Nagarjuna's works and those of his followers, the four positions on a particular thesis are negated or ruled out (Sk. *pratiṣedha*) as exemplified by the first verse of Nagarjuna's Middle way verses which focuses on a critique of causation:[50]

> "Entities of any kind are not ever found anywhere produced from themselves, from another, from both [themselves and another], and also from no cause."

Nagarjuna also famously relied upon refutation based argumentation (*vitanda*) drawing out the consequences (*prasanga*) and presuppositions of his opponents' own theories and showing them to be self refuting.[51] Because the *vaitandika* only seeks to disprove his opponents arguments without putting forward a thesis of his own, the Hindu Nyaya school philosophers such as Vatsyayana saw it as unfair and also irrational (because if you argue against P, you must have a thesis, mainly not P).[52] According to Matilal, Nagarjuna's position of not putting forth any implied thesis through his refutations would be rational if seen as a form of illocutionary act.[52]

Nagarjuna's reductions and the structure of the catuṣkoṭi became very influential in the Buddhist Madhyamaka school of philosophy which sees itself as a continuation of Nagarjuna's thought. Nagarjuna also discusses the four modes of knowing of the Nyaya school, but he is unwilling to accept that such epistemic means bring us ultimate knowledge.[27]

Nagarjuna's epistemic stance continues to be debated among modern scholars, his skepticism of the ability of reason and language to capture the nature of reality and his view of reality as being empty of true existence have led some to see him as a skeptic, mystic, nihilist or agnostic, while others interpret him as a Wittgensteinian analyst, an anti-realist, or deconstructionist.[27]

Nagarjuna is also said to be the author of the *Upāyaśṛdaya* one of the first B pr reasoning and argumentation.[53] He also developed the Buddhist theory of two t ultir truth as the truth of emptiness.

Vasubandhu was one of the first Buddhist thinkers to write various works on sound reasoning and debate, including the *Vādavidhi* (Methods of Debate), and the *Vādavidhāna* (Rules of Debate).[53] Vasubandhu was influenced by the system of the Nyaya school. Vasubandhu also introduced the concept of 'logical pervasion' (vyapti).[2] He also introduced the Trairūpya (triple inferential sign). The Trairūpya is a logical argument that contains three constituents which a logical 'sign' or 'mark' (linga) must fulfill to be 'valid source of knowledge' (pramana):[54]

1. It should be present in the case or object under consideration, the 'subject-locus' (pakṣa)
2. It should be present in a 'similar case' or a homologue (sapakṣa)
3. It should not be present in any 'dissimilar case' or heterologue (vipakṣa)

> It is this praxis that leads a representative thinker such as Dharmakīrti to claim that the Buddha, whose view he and his successors claim to propound, is a true embodiment of the sources of knowledge. Thus, far from seeing a tension between empirical scrutiny and the exercise of reason, the Buddhist epistemological enterprise positions itself not merely as a dialogical disputational method for avoiding unwarranted beliefs, but as a practice aimed at achieving concrete, pragmatic ends. As Dharmakīrti reminds his fellow Buddhists, the successful accomplishment of any human goal is wholly dependent on having correct knowledge.[27]

Later philosophers who worked on Buddhist epistemology and logic include Devendrabuddhi (630-690 C.E.), Dharmottara (750-8 10 C.E.), Prajñākaragupta (740-800 C.E.), Jñanasrimitra (975–1025) and Ratnakīrti (11th century).

Bhāvaviveka and *svatantrika*

Bhāvaviveka (c. 500 - c. 578) appears to be the first Buddhist logician to employ the 'formal syllogism' (Wylie: sbyor ba'i tshig; Sanskrit: prayoga-vākya) in expounding the Mādhyamaka view, which he employed to considerable effect in his commentary to Nagarjuna's *Mūlamadhyamakakārikā* entitled the *Prajñāpradīpa*.[66]

Bhāvaviveka was later criticized by Chandrakirti (540-600) for his use of logical arguments. For Chandrakirti, a true Mādhyamika only uses reductio ad absurdum arguments and does not put forth positive arguments. Chandrakirti saw in the logico-epistemic tradition a commitment to a foundationalist epistemology and essentialist ontology, while for him a Mādhyamika's job should be to just deconstruct concepts which presuppose an essence.[67]

In spite of these criticisms, Buddhist philosophers such as Jñanagarbha (700-760) and Śāntarakṣita (725–788) continued to explain Madhyamaka philosophy through the use of formal syllogisms as well as adopting the conceptual schemas of the Dignaga-Dharmakirti school.[67] This tendency is termed *Svātantrika*, while Chandrakirti's stance is termed *Prasangika*. The Svatantrika-Prasaṅgika distinction is a central topic of debate in Tibetan Buddhist philosophy.

Tibetan tradition

Tom Tillemans, in discussing the Tibetan translation and assimilation of the logico-epistemological tradition, identifies two currents and transmission streams:

The first is the tradition of the Kadampa scholar Ngok Lodzawa Loden Shayrap (1059–1109) and Chapa Chögyi Sengge (1109–69) and their disciples, mainly located at Sangpu Neutok .[68] Chapa's *Tshad ma'i bsdus pa* (English: 'Summaries of Epistemology and Logic') became the groundwork for the 'Collected Topics' (Tibetan: Düra; Wylie: bsdus grwa) literature, which in large part furnished the Gelugpa-based logical architecture and epistemology.[68] These two scholars (whose works are now lost) strengthened the influence of Dharmakirti in Tibetan Buddhist scholarship.[69]

There is also another tradition of interpretation founded by Sakya Pandita (1182–1251), who wrote the *Tshad-ma rigs-gter* (English: "Treasury of Logic on Valid Cognition").[70][71][68] Sakya pandita secured the place of Dharmakirti's *pramanavarttika* as the foundational text on epistemology in Tibet. Later thinkers of the Gelug school such as Gyeltsap and Kaydrup attempted a synthesis of the two traditions, with varying results. This is because the views of Chapa were mostly that of Philosophical realism, while Sakya pandita was an anti-realist.[72]