

Epistemic Reduction: The Case of *Arthāpatti*

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An introduction into Hindu and Buddhist epistemology

The three questions of epistemology.

- What do we know?
- How can we know it?
- What grounds what we know?

Pramāṇas: Means/instruments of knowledge

- *pratyakṣa* (perception)
- *anumāṇa* (inference)
- *upamāṇa* (analogy/comparison)
- *śabda* (testimony)
- *anupalabdhi* (non-perception)
- *arthāpatti* (postulation)
- *abhāva* (awareness of absence)
- *sambhava*
- *aithiya*
- . . . others

Different schools accept different *pramādnas*

	<i>pratyakṣa</i>	<i>anumāṇa</i>	<i>śabda</i>	<i>upamāṇa</i>	<i>arthāpatti</i>	<i>abhāva</i>
Cārvākas	x					
Buddhists	x	x				
Jains	x	x	x			
Naiyāyikas	x	x	x	x		
Prābhākaras	x	x	x	x	x	
Bhāṭṭas	x	x	x	x	x	x

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What is *anumāṇa*?



Vasubandhu, Buddhist monk, 4th–5th C

An *anumāṇa* consists in three parts:

- a subject (*pakṣa*)
- two properties (the *hetu* or ground property and the *sādhya* or target property)

These three parts are arranged into a three-step argument form:

- ① thesis (what is to be proven): “*p* has *S*”.
- ② ground (premise which grounds the thesis): “*p* has *H*”.
- ③ indispensability (the warrant which gets you from the ground to the thesis): “*H* pervades *S*” (or “Whatever has *H* has *S*”).

Two examples of *anumāṇa*

Example

- ① thesis: This chair has a color.
- ② ground: This chair has the color red.
- ③ warrant: Whatever has the color red has a color.

Example

- ① thesis: This chair has a brain.
- ② ground: This chair was made in outer space.
- ③ warrant: Whatever was made in outer space has a brain.

What makes a good *anumāṇa*?

- ① The *hetu* must occur in the *pakṣa*.
- ② The *hetu* must occur in similar examples, i.e., in examples which have the *sādhya*.
- ③ The *hetu* must not occur in the dissimilar examples, i.e., ones without the *sādhya*.

The developments of Dignāga



Dignāga, Buddhist monk, c480– c540

Example

- ① thesis: sound is non-eternal (sound = *pakṣa*; non-eternal = *sādhya*).
- ② ground: because of resulting from effort (= *hetu*).
- ③ concomitance + example: Whatever results from effort is observed to be non-eternal, like a pot. (pot = *dṛṣṭānta*).

Another example

Example

- ① thesis: “there is fire on the mountain” (mountain = *pakṣa*; fire = *sādhya*).
- ② ground: because there is smoke (= *hetu*).
- ③ concomitance + example: Wherever there is smoke, there is fire, like in a kitchen, unlike in a lake. (kitchen = positive *dr̥ṣṭānta*; lake = negative *dr̥ṣṭānta*)

Dignāga’s account of *anumāna* was highly influential not only on later Buddhist authors but also on Hindu authors, especially in the Nyāya school.

What is *arthāpatti*?

Usually translated “postulation” or “supposing”.

Definition (Bhāṣya)

Postulation is when something which is seen or heard is incomprehensible otherwise, and thus there is a posited object.

Definition

Something is *incongruous* if it is “the contradiction between two deliverances of knowledge sources”.

For example, when specific knowledge is contradicted by general knowledge.

Some examples of *arthāpatti*

Example (Caitra)

Caitra is a very old man, and it is known that very old people do not leave their houses. Yet you go to Caitra's house, and he is not there! By *arthāpatti*, you conclude that he must be outside.

(General knowledge-cognition: Caitra is alive somewhere; specific knowledge-cognition; Caitra is not alive in his house.)

Example (Devadatta)

Devadatta is very fat, and yet he is not observed to eat during the day. By *arthāpatti*, you conclude that he must eat at night.

Example (Door)

Several people are in a room, and a door is open. Someone says "Door! Door!" By *arthāpatti*, you conclude that that person wants the door closed.

Types of *arthāpatti* (1)

- Experiential postulation (e.g., Caitra, Devadatta examples)
- Verbal postulation, “when, in order to establish linguistic connection in an incomplete sentence, words are brought in”. (e.g., “door, door!”)

Types of *arthāpatti* (2)

Experiential postulation can be further divided on the basis of where the experiential component comes from:

- 1 Postulation because of a perceived referent.
- 2 Postulation because of an inferred referent.
- 3 Postulation because of an analogical referent.
- 4 Postulation because of a postulated referent.
- 5 Postulation because of a non-present referent.
- 6 Postulation because of a testimonial referent.

Examples of these six types (1)

Example (Postulation based on perception)

Referent We perceive fire.

Inconsistency Fire is concomitant with combustion.

Postulation We assume the burning potency of fire.

Example (Postulation based on inference)

Referent The sun changes position.

Inconsistency Whatever changes position moves.

Postulation We assume the kinetic potency of the sun.

Example (Postulation based on analogy)

Referent *Some analogy.*

Inconsistency "A particular cow qualified by similarity to a particular gayal".

Postulation We assume that potency is apprehensible.

Examples of these six types (2)

Example (Postulation based on (another) postulation)

Referent Testimony has a signifying potency.

Inconsistency *some referent produced by testimony.*

Postulation We assume that testimony is permanent.

Example (Postulation based on non-presence)

Referent Caitra is not in his home.

Inconsistency Caitra is alive.

Postulation We assume that Caitra is outside.

(No example of postulation based on testimony given in the text.)

Just what *is arthāpatti*?

Arthāpatti is about resolving doubt/inconsistency through the postulation of an unknown truth.

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- Inference to the best explanation.
- A method for generating hypotheses.
- Models of expectations/default reasoning.
- Epistemic luck?
- Understanding vs. knowledge.

What is the relationship between *anumāna* and *arthāpatti*?

- Buddhists:
- Naiyāyikas:
- Mīmāṃsakas:

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Buddhists on *arthāpatti*

- *Arthāpatti* cannot ever produce knowledge because:
- It allows us to get to things that we haven't yet experienced.
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But this is just guesswork!

Naiyāyikas on *arthāpatti*

- *arthāpatti* can produce genuine knowledge but:
- It is not distinct from/is reducible to *anumāna*.

Reducing *arthāpatti* to *anumāna*

What does it mean for one *pramāna* to be reducible to another?

- Everything you could know by *arthāpatti* you could know by *anumāna* (but I can't tell you how).
- Given a knowledge-cognition produced by *arthāpatti* I have a method by which will generate an *anumāna* that produces the same knowledge-cognition.
- Knowledge-cognitions produced by *arthāpatti* and *anumāna* are simply *the same*.
- The instruments themselves (*arthāpatti* and *anumāna*) are simply the same.

Reductionism in other contexts

- Logical: Everything that you can prove in intuitionistic logic I can prove in classical logic.
- Mathematical: Any mathematical statement can be reduced to a statement about set theory/logic.
- Mental: The mind is reducible to the body.
- Scientific: Pain is reducible to synapses firing; heat is reducible to mean molecular motion.

In many cases, the reduction follows because of an identity; can also follow because of supervenience.

Epistemic reductionism: What is it?

- Oppenheim & Putnam: epistemological reduction is a reduction that is “true in virtue of the meanings of the terms involved”.
- An epistemological reductionist concerning a science or theory S holds that in fact, we are (or at some point will be) able to reduce S to a more fundamental science [SEP].

This is reductionism of the epistemological *outcomes*, not the epistemological *methods*.

Why might we think *arthāpatti* could be reduced?

Back to the Caitra example:

- If Caitra is alive, he must be somewhere.
- He is not in the house.
- Therefore he is outside.

This seems like it could be converted into an inference (adding in some extra premises):

$$\frac{\frac{c \rightarrow (h \vee \neg h) \quad c}{h \vee \neg h} \quad \neg h}{\neg h}$$

Why might we *not* think *arthāpatti* could be reduced?

Why do we assume Caitra is outside rather than that he is dead?

Prior to grasping that someone is outside, it is not possible to recognize his not being in the house and his being alive as being combined.

Because of this uncertainty, *anumāna* is insufficient to establish that Devadatta is outside; however, one can *postulate* that he is, and that is how postulation differs from *anumāna*.

Why *arthāpatti* can't be *anumāna*

The inferential causal apparatus—that is, the *pakṣa*—is missing.

The probandum (*sādhya*) is either:

- Caitra, qualified by an outer presence, or
- The outer presence, qualified by Caitra

The possible inferential signs (*hetu*) are:

- Caitra, qualified by absence in the house
- The house, qualified by absence of Caitra
- The absence of Caitra in the house
- The non-perception of Caitra in the house

But “none of these is characterized by the property-possessor relation” (§3.6:20), because no pair of *sādhya* and *hetu* satisfies the requirements of positive and negative concomitance.

Dead Caitra

- Not even the pair “Caitra, qualified by an outer presence” and “Caitra, qualified by absence in the house” satisfies the pervasion requirements;
- because he could be dead and thus the *hetu* would be inconclusive.
- To draw any conclusion about Caitra’s non-presence in the house, we must both know that he is alive (e.g., via testimony), *and* postulate his presence outside via his absence in the house.

What about Devadatta?

- Suppose someone says: “The fat one does not eat during the day”.
- When we hear this, there is an incongruity.
- The special cognition ‘eating-at-night’ resolves this incongruity.

Which *pramāna* generates this special cognition, if not *arthāpatti*?

- It is not generated by perception, because “it is beyond the reach of the senses”.
- It is not generated by inference, because the cognition ‘eating-at-night’ is accessible even without identifying a relevant pervasion relation (which would be required for an inference).
- We can’t even make sense of how it might be generated by analogy or non-presence.

Which *pramāna* generates this special cognition?

Therefore it has to be generated from testimony (*śabda*). However, it can't be generated by testimony alone, because:

- A single sentence cannot convey both an assertion and a negation.
- 'Night' is not a part of what is spoken.

Given this, 'eating-at-night' "is caused by an assumed testimony". What then is the cause of this assumed testimony?

- It cannot be perception, because assumed testimony is not manifest, and what is not manifest cannot be perceived.
- It cannot be an inferential sign because again it is apprehended without pervasion.

So where are we at?

- Still work in progress.
- Hard to extrapolate from three examples.
- New volume on *arthāpatti*—translated texts, commentaries, and analytical papers—coming out next year.