




Take-home: a) ignores kevalin [fair]; b) to be developed: synthesis & revision; *naya*-relative rationality [no implication imported into *nayas*: cf. *R*]; deficient views




Like contemporary discourse in **physics** or **computer science**, the discourse in **classical Indian philosophy** collectively contains a mass of assertions & contradictory counter-assertions, each backed up with plausible arguments.

The **Jains** faced a globally inconsistent set of propositions divided into internally consistent sub-sets. Each of these particular philosophical perspectives constituted a so-called **naya** [standpoint].

Let propositions be **arguable** if they are assertible within some **naya**.

Question: How should one rationally respond to a class of arguable and globally inconsistent propositions?



Doctrinalism: "One can always find out, in principle, which of two inconsistent assertions is true."


Skepticism: "Having reasons both for and against a given proposition is reason to deny that we can justifiably assert or deny it." [cf. *Nāgārjuna*, *Sextus Empiricus*]

Pluralism [Jain response]: "Assent to propositions is only conditional & justification **naya**-relative."

Not our situation.

Natural & philosophically interesting.

Avoids one-sidedness.



Both skeptics & pluralists **deny** that we have reason to privilege one position [as the doctrinalist would], & are under pressure to revise classical logic

Problem: If *u* were the same as *t* and *f* simultaneously, (5) would seem to collapse into (4).

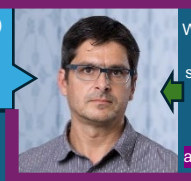
Solution: this is not so, which becomes clear if we pay attention to the "arguably" operator [*syāḍ* / *ṽ*].

(1) $|p| = t \text{ iff } \tilde{V}p$, i.e., iff there is a *naya* σ within which *p* is **arguable**, i.e., iff $\exists \sigma [\sigma : p]$

(2) $|p| = f \text{ iff } \tilde{V}\neg p$, i.e., iff there is a *naya* σ within which $\neg p$ is **arguable**, i.e., iff $\exists \sigma [\sigma : \neg p]$

(3) $|p| = t \text{ iff } \tilde{V}p \text{ AND } \tilde{V}\neg p$, i.e., iff $\exists \sigma [\sigma : p] \text{ AND } \exists \sigma [\sigma : \neg p]$

Question: How about (4) [i.e., *u*]?



We can code assertible as **true** (*t*), denial as **false** (*f*), & both simultaneously as **non-assertible** (*u*).

The 7 represent all possible combinations of these three. ***u* appears to be a product of *t* and *f*.**


optimal standpoint = pr a standpoint in which, for any given proposition, it is determined whether it is *t* or *f*.

Suppose [for now] that all **nayas** are optimal.

Vāḍideva Sūri distinguishes (1) conditional assertion, (2) conditional denial, (3) successive conditional assertion and conditional denial, (4) simultaneous conditional assertion and conditional denial, (5) conditional assertion and simultaneous conditional assertion and conditional denial both, (6) conditional denial and simultaneous conditional assertion and conditional denial both, (7) successive conditional assertion and conditional denial and simultaneous conditional assertion and conditional denial both.

If so, then every proposition is either [1] true in all **nayas** [, [2] false in all **nayas**, or [3] true in some **nayas** & false in all others. This yields a 3-valued logic [*t*, *f*, *u*]: M3 / J3.


But again: how to interpret (4)?



The **skeptic** doesn't want to assert anything and thus has an issue with "for all *p*, either *p* or *not-p* is true" [i.e. the law of excluded middle].

The **pluralist** wants to assert both *p* and *not-p*, so must, it seems, deny the law of non-contradiction. **Claim:** the Jains don't really embrace inconsistency.

Objection 1: While some **very special sentences** [e.g., paradoxical ones] can arguably be both true and false, those are not the ones the Jains have in mind.



Claim: Calling this **unassertible** [*avaktavyam*] makes intuitive sense.

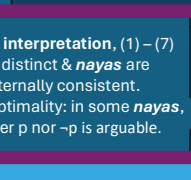
Many interpreters suggest a paraconsistent interpretation since elaborations such as **Vāḍideva Sūri's** [see above] can sound like this is what Jains want.

But they need not assume that some **nayas** are internally inconsistent.

(4) is read as $|p| = u \text{ iff } \exists \sigma [\neg(\sigma : p) \text{ \& } \neg(\sigma : \neg p)]$.

Example: Within the **naya** of physics, neither "Happiness is a precondition of virtue" nor its negation are arguable / assertible.

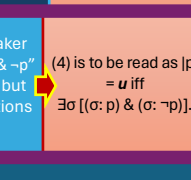
On my interpretation, (1) – (7) are distinct & **nayas** are internally consistent. I **drop** optimality: in some **nayas**, neither *p* nor $\neg p$ is arguable.



This is a bit weaker [not implied: "*p* & $\neg p$ " can be stated], but the same objections apply.

(4) is to be read as $|p| = u \text{ iff } \exists \sigma [(\sigma : p) \text{ \& } (\sigma : \neg p)]$.

Bharucha & Kamat (1984): "simultaneous affirmation and denial" is interpreted as embracing a paraconsistent logic, i.e., one on which one can entertain contradictions. (4) is read as $|p| = u \text{ iff } \exists \sigma [\sigma : p \text{ \& } \neg p]$.



Objection 2: We should reject an interpretation of (1) – (7) on which (5) and, for analogous reasons, (6) collapse into (4). They do here.

Jain Logic allows to perspicuously track how assertible a claim is in a given discourse.

Agreed. But they also don't need to rule it out. Some **nayas** may be [non-obviously] contradictory.

Ganeri doesn't say the Jains would accept [(*R*)] as stated (interestingly).

I doubt they would, for what entails what may differ from *naya* to *naya*, so the entailment relation would need to be relativized to a *naya*.

Yes, I don't interpret *u* in terms of simultaneity, but support for this reading is found in Prabhācandra's work (9th century CE).

Neat: If optimality is dropped, then with respect to all **nayas**, any proposition *p* can be in any of exactly **seven states**:

(1) *p* is arguable in all **nayas**, (2) $\neg p$ is arguable in all **nayas**, (3) *p* is arguable in some, $\neg p$ in all other **nayas**, (4) *p* is arguable in some, takes *u* in all other **nayas**, (5) $\neg p$ is arguable in some, takes *u* in all other **nayas**, (6) *p* is *u* in all **nayas**, (7) *p* is arguable in some **nayas**, $\neg p$ in others, in all others it takes *u*.

Suggestion: Rescher's system A1 [Rescher 1968] should allow the axiomatization of the modal standpoint operator.

Yes, J7 is not truth-functional. Still, its truth table is embeddable in a quasi-truth-functional system, which is, in turn, equivalent to a many-valued, strictly truth-functional system.

Upshot: J7's lack of truth-functionality is not a fatal flaw.

Moffat & Ritchie's 1990 system M7 is such a system and maps well onto J3, but not well onto J7. Still, such a system should be findable. **[DISCLAIMER:** I don't do this here].

Question: What is the truth value of "*A* & *B*" if we have "*uA*" [read: it has been asserted that *A*] and "*uB*" [analogous reading]? T? F? TF?

This depends on whether *p* and *q*, respectively, are arguable [1] in all **nayas**; [2] in none; [3] in some, not in all others; etc. [7 options]

Strategy: focus on states [1]–[3] [J3] [bracketing, thus, the case of non-assertibility & granting optimality], expand to [1] – [7] [J7] later.

Easy cases: *p*, *q* are both either [1] or [2].

Harder case: both are [3], i.e., arguable in some **nayas**, not in all others]

"*p* & *q*" could then be [3] or [2] [arguable in some **nayas**, false in all others; or: false in all].

Still: Modal logics aren't truth-functional [one can't deduce the truth value of complex sentences from those of its sentential parts]; nor is, thus, D2.

Importantly, J's modal logic is driven by motivations that parallel those of the Jains.

Jaśkowski uses an unsuitable modal logic to model his system [S5 is too strong; it entails, e.g., "*p* \rightarrow ϕp ", although not everything that is the case is also asserted], but that's an easy fix. Some weaker system does it.

In *nuce*: Whatever someone asserts [using "*u*" as a modal operator to mean "it is asserted that"] is a theorem, but theorems originating from different speakers can't be freely combined.

Worry: the resulting logic [within a discourse] is **not truth-functional**. compare

Stanisław Jaśkowski

2 observations reg. logic within larger discourses:

a) sentences containing vague or ambiguous terms often get different truth assignments from different speakers;

b) in scientific explanations, we sometimes draw on theories that are inconsistent with each other.

Distinction: A **contradictory** deductive system includes contradicting pairs of theorems; an **over-complete** deductive system has every well-formed formula as a theorem.

Suggestion: to integrate is **not** to create new **nayas** that allow for inconsistencies, but to aim for a **complete picture** of what's arguable from **each naya**. If on this ideal, each truth IS asserted from some *naya*, Jains can employ a modal logic stronger than S3^o.

Question: How is integrating inconsistent views possible? Is such integration even a coherent thing to aim for?

Additional claim: Since every *naya* reveals a facet of reality, we need to **synthesize and integrate** them all.

Main Jain innovations: recognize and skillfully make precise the idea that **assertions are always only conditionally justifiable**.

Def. modal operator \tilde{V} [arguably]:
 $\tilde{V}p \text{ iff } \exists \sigma [\sigma : p]$
 [+ suitably weak axioms, e.g., S3^o]

In J3, **optimality** would be added:
 $\neg \exists \sigma [\neg(\sigma : p) \text{ AND } \neg(\sigma : \neg p)]$

Claim: the Jaina system would need to be a bit more complex [so as to account for speakers and **nayas**], but it would be of the same type as a modalized Rescher assertion logic.

What we have here is a **quasi-truth-functional system**, which maps **sets of input truth values** to **sets of output truth values**.

Note: such a system is always equivalent to some many-valued, strictly truth-functional system.

Nicholas Rescher

In **classical logic**, all contradictory systems are over-complete [since from a contradiction, one can derive whatever one wants]. In Jaśkowski's **discussive logic** [D2], he separates these two features, by denying that from any "*p*", "*q*", uttered by anyone, "*p* & *q*" may be derived.

Additional claim: Since every *naya* reveals a facet of reality, we need to **synthesize and integrate** them all.

Main Jain innovations: recognize and skillfully make precise the idea that **assertions are always only conditionally justifiable**.