

Uncertainty, time, and modal-aspect interaction in Bangla conditionals

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Background + scope

- Modal environments affect temporal interpretation [3, 4]
- This work: linguistic outcome of such interaction in conditional constructions
 - Indicative and counterfactual conditionals
 - If you sing, I will dance (indicative)
 - If you sang, I would dance (counterfactual)
- Scope: regular tense-aspect marking in the antecedent of present tense indicative conditionals in Bangla
- Bangla (Bengali): Indo-Aryan language spoken in West Bengal in India, and Bangladesh
- Data from Standard Colloquial Bangla (SCB; [2]), variety spoken in/around Kolkata

The puzzle

- Indicative conditionals: an episodic predicate directly embedded under the connective *jodi* 'if' cannot express habitual-generic meanings, is incompatible with progressive morphology, and has an obligatorily futurate reading with simple present and present perfect morphology.
- Why temporal restrictions?
- Why this specific set of restrictions?

Proposal summary

- not random– all restricted readings are temporal reflexes of a single modal restriction on Bangla conditionals: antecedent must be metaphysically open (MU)
- this restriction– draws from cross-linguistic requirement for uncertainty in conditional antecedent
- inherent link between temporal and modal meaning means that satisfying MU restricts the possibilities for temporal interpretation in the antecedent, and the observed restrictions on tense-aspect morphology result from that

Verbal morphology in Bangla

- Present tense is morphologically unmarked (Φ)
- progressive: *-ch-*; perfect: *-ech-*
- No overt distinction between 'past indicative' and counterfactual conditionals [1]. Focus of this work: present indicative conditionals

References

- [1] Tista Bagchi. Causation and tense in subordinate clauses: Conjunctive participles in Bangla and Hindi. *Polymorphous linguistics: Jim McCawley's legacy*, pages 109–134, 2005.
- [2] Suniti Kumar Chatterji. *The origin and development of the Bengali language*. Calcutta University Press, 1926.
- [3] Cleo Condoravdi. Temporal interpretation of modals: Modals for the present and for the past. *The construction of meaning*, 5987, 2002.
- [4] Stefan Kaufmann. Conditional truth and future reference. *Journal of semantics*, 22(3):231–280, 2005.

Data

- Unembedded sentences with simple present, prog, and perf
 mini phOl kha- ϕ -e/ kha-ch-e/ kh-ech-e
 mini fruit eat-PRS-3/ eat-PROG-3/ eat-PRF-3
 Mini eats/ is eating/ has eaten the fruit
- episodic predicates without overt adverbials
 - in unembedded sentences: habitual-generic reading
 mini machh kha- ϕ -e
 mini fish eat-PRS-3
 Mini eats fish
 - in antecedent of conditional: futurate reading (habitual/generic reading unavailable)
 mini jodi mach kha- ϕ -e, tahole phOl khabe na/
 mini if fish eat-PRS-3, then fruit eat.FUT.3 NEG/
 #eTa pOchondo korbe
 #this-CLF like do.FUT.3
 Available: if Mini eats the fish, she will not eat the fruit
 Unavailable: if Mini eats fish (generally/habitually), then she will like this
- Progressive morphology not acceptable:
 mini jodi phOl ??kha-ch- ϕ -e, tahole ami khuSi hObo
 mini if fruit ??eat-PROG-PRS-3, then I happy be.FUT
 Intended: If Mini is eating the fruit, then I will be happy
- Perfect morphology has an obligatorily future reading:
 tumi jodi e-ta kor-ech- ϕ -o, ami khub dukkho pabo
 you if this-CLF do-PRF-PRS-3, I much hurt get.FUT.1
 Available: If you do this (at some future time), I will be very upset
 Unavailable: If you have done this, I will be very upset (context: there has been a theft, but we don't know who has done it)

The most natural way to express a present perfect in the antecedent is to use the auxiliary *thak-*, which in unembedded sentences expresses a generic meaning.

- Habitual-generic, progressive, and present perfect readings are allowed in doubly embedded antecedents:
 jodi emon-Ta hOye je [mini phOl kha- ϕ -e/
 if like.this-CLF happen that [mini fruit eat-PRS-3/
 kha-ch- ϕ -e/ kh-ech- ϕ -e], tahole ami khuSi hObo
 eat-PROG-PRS-3/ eat-PRF-PRS-3], then I happy be.FUT
 If it so happens that Mini eats (in general)/ is eating/ has eaten fruit, then I will be happy

morphology	unembedded sentence	conditional antecedent
simple present	habitual-generic	futurate —no habitual-generic
prog	PROG	?? —unacceptable
perf	PERF	future PERF —no present PERF

Table 1. Interpretation of episodic predicates in unembedded clauses vs antecedent of indicative conditional

Analysis

Ingredients

- The antecedent of an indicative conditional is usually understood as expressing some uncertainty about the statement it makes:
 (7) ## If I am presenting a poster right now, then I will need coffee
- Two sources of uncertainty: subjective (epistemic/doxastic)—verifiable, objective (metaphysical)—unverifiable:
 (8) a. If Jackson is hungry right now, he will eat something soon (epistemic)
 b. If it rains tomorrow, I will make tea (metaphysical)
- Metaphysical uncertainty entails epistemic uncertainty, but not vice-versa
- Link to time? –metaphysical uncertainty can only be about the future—the past is objectively settled. Epistemic uncertainty can be about any time—we can lack subjective knowledge about past and future alike:

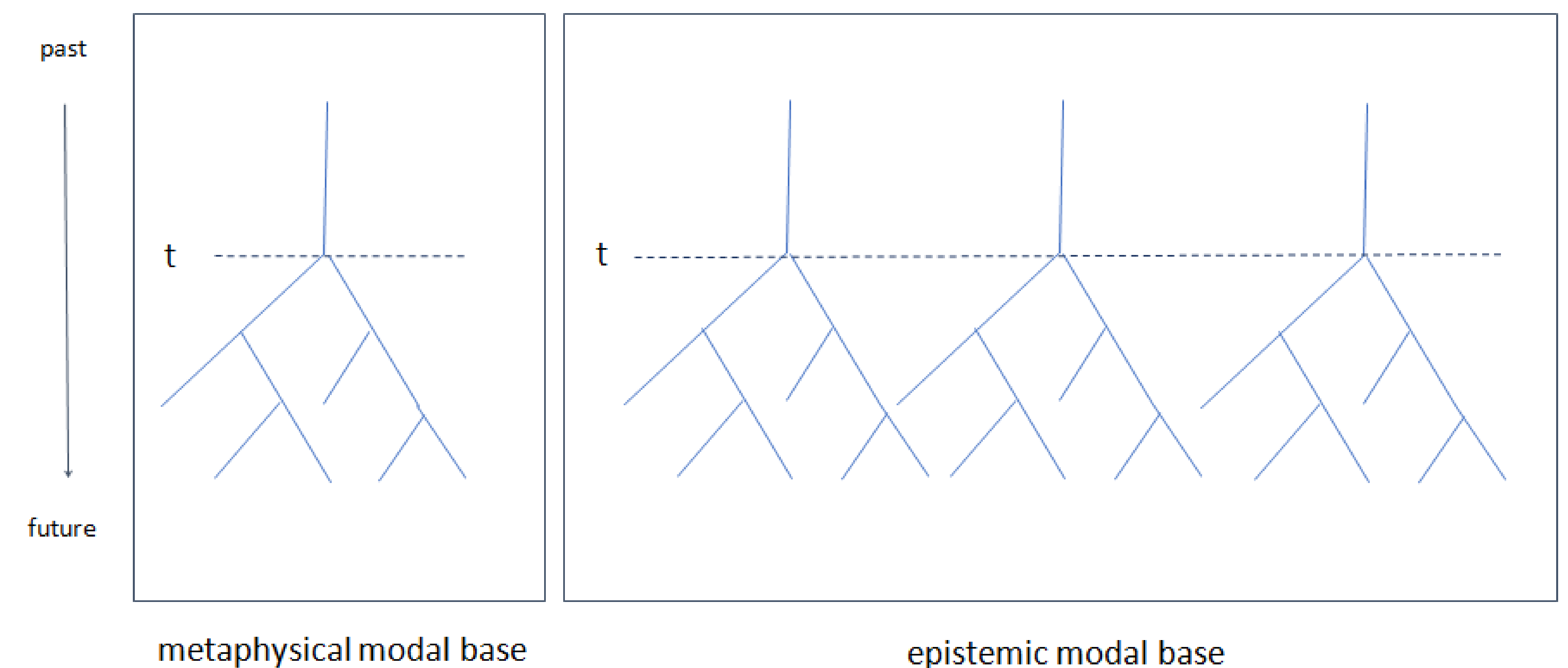


Figure 1. past-future asymmetry: branching time

- Metaphysical Uncertainty = truth crucially depends on future facts

Proposal

- Indicative conditionals presuppose that the proposition in the antecedent is epistemically open– general assertability condition on conditionals
- Bangla: more stringent version of same assertability condition: indicative conditionals presuppose that the proposition in the antecedent is not only epistemically open, but **also metaphysically open (MU condition)**
- Link to tense/aspect: present perfect, habitual-generic assertions are verifiable with information from the here and now. But future-shifted and future perfect configurations are not.
- Not that certain temporal constructions are categorically unavailable, but rather that the presupposition favors readings that represent MU-respecting configurations
- Doubly-embedded antecedents: clause embedded under *jodi* denotes a knowledge-gaining event, which has not happened yet, and can be subject to metaphysical uncertainty

(epistemically) **Open question:** Progressive? intuition of verifiability vs semantics for progressive: intensional component?