The heuristic of Economy and the reflexes of Proto-Iranian stop clusters

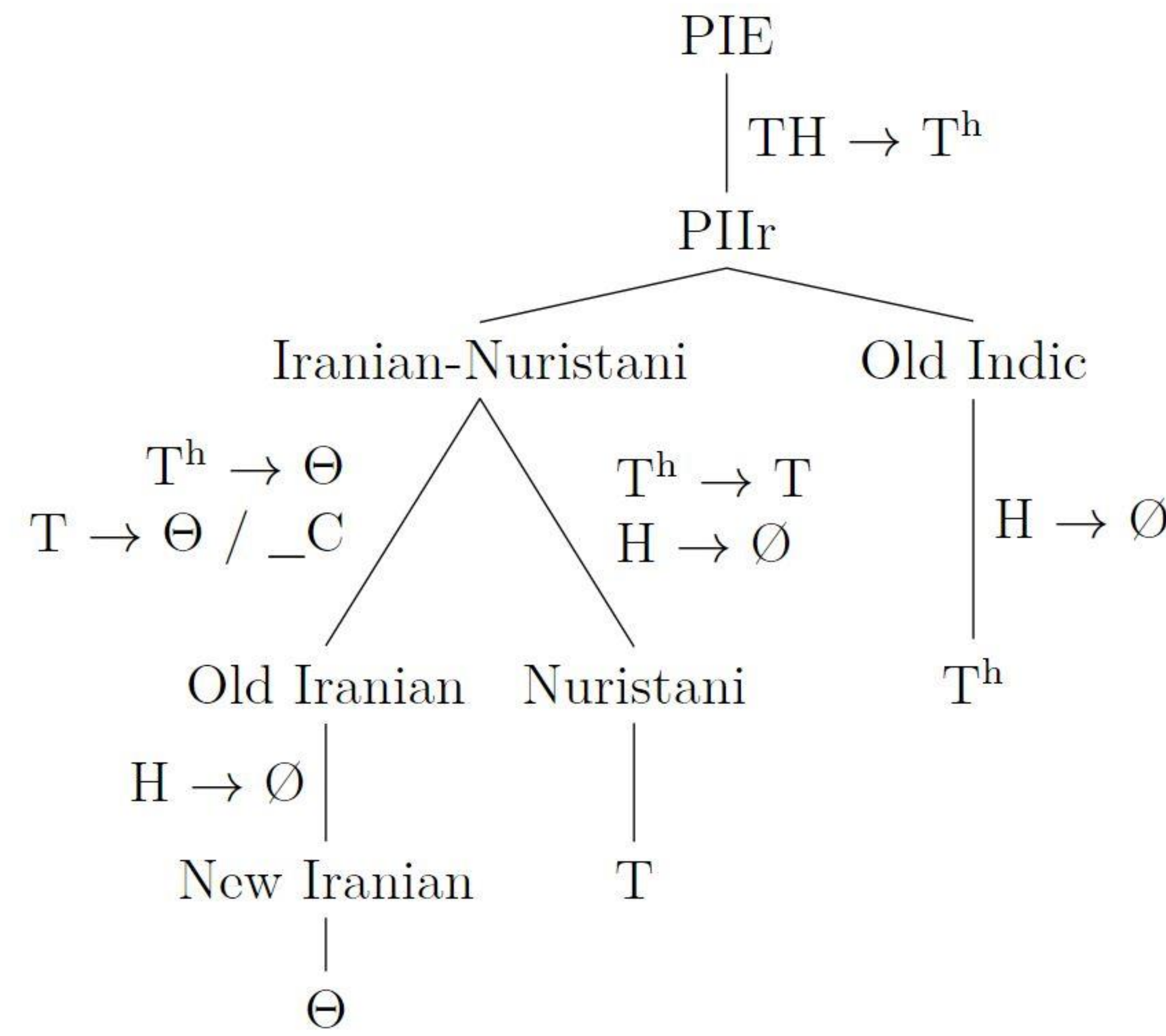## Shuan Osman Karim, Goethe University Frankfurt

This presentation in a nutshell:

- The reflexes of Proto-Indo-Iranian consonant clusters is well known from the extant Old, Middle, and New Indic, Iranian, and Nuristani languages.
- Voiceless-stop-laryngeal clusters become fricatives in Iranian, voiceless stops in Nuristani, and Voiceless aspirated stops in Indic:

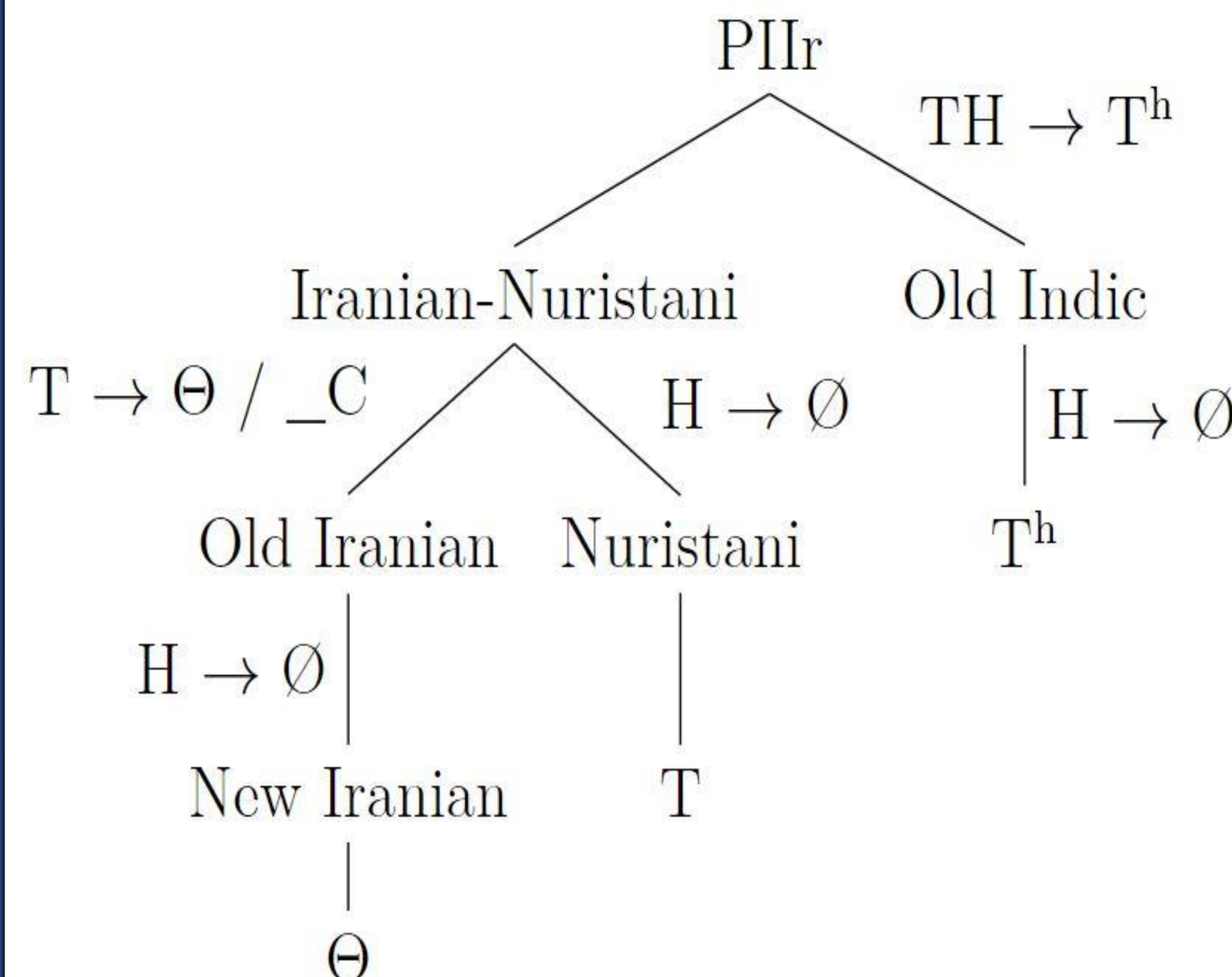| PIE	PIIr.	Iranian	Nuristani	Indic
*pH	*pʰ	f	p	pʰ
*tH	*tʰ	θ	t	tʰ
*kH	*kʰ	x	k	kʰ

- However, the conception that these clusters (TH) became fricatives in Iranian proves redundant as their transformation is subsumed under other known shifts, e.g., T > Θ and H > ∅.
- Likewise, the two sets of palatals Ḱ and K (before front vowels) are thought to have undergone a complex dance to avoid merger.
- This proves to be an unnecessary bulky solution given that each of these changes is subsumed under other known shifts.
- The comparative method gives us the necessary tools to evaluate the traditional proposals and the one I offer here.

Heuristics for the justification of reconstruction:

1. Majority wins / Occam's Razor

   k : k : k : k : s > *k

2. Directionality / Naturalness

   *s > h   vs.   *h > s

3. Factoring in features held in common

IPA	ɢ	ʔ	g	k	χ	q	*q
Voicing	voiced	voiceless	voiced	voiceless	voiceless	voiceless	voiceless
Place	uvular	glottal	uvular	velar	velar	uvular	uvular
Manner	stop	stop	stop	stop	stop	fricative	stop

4. Economy
   a. In a family, shared innovation > independent innovation
   b. In a language, fewer changes > more changes

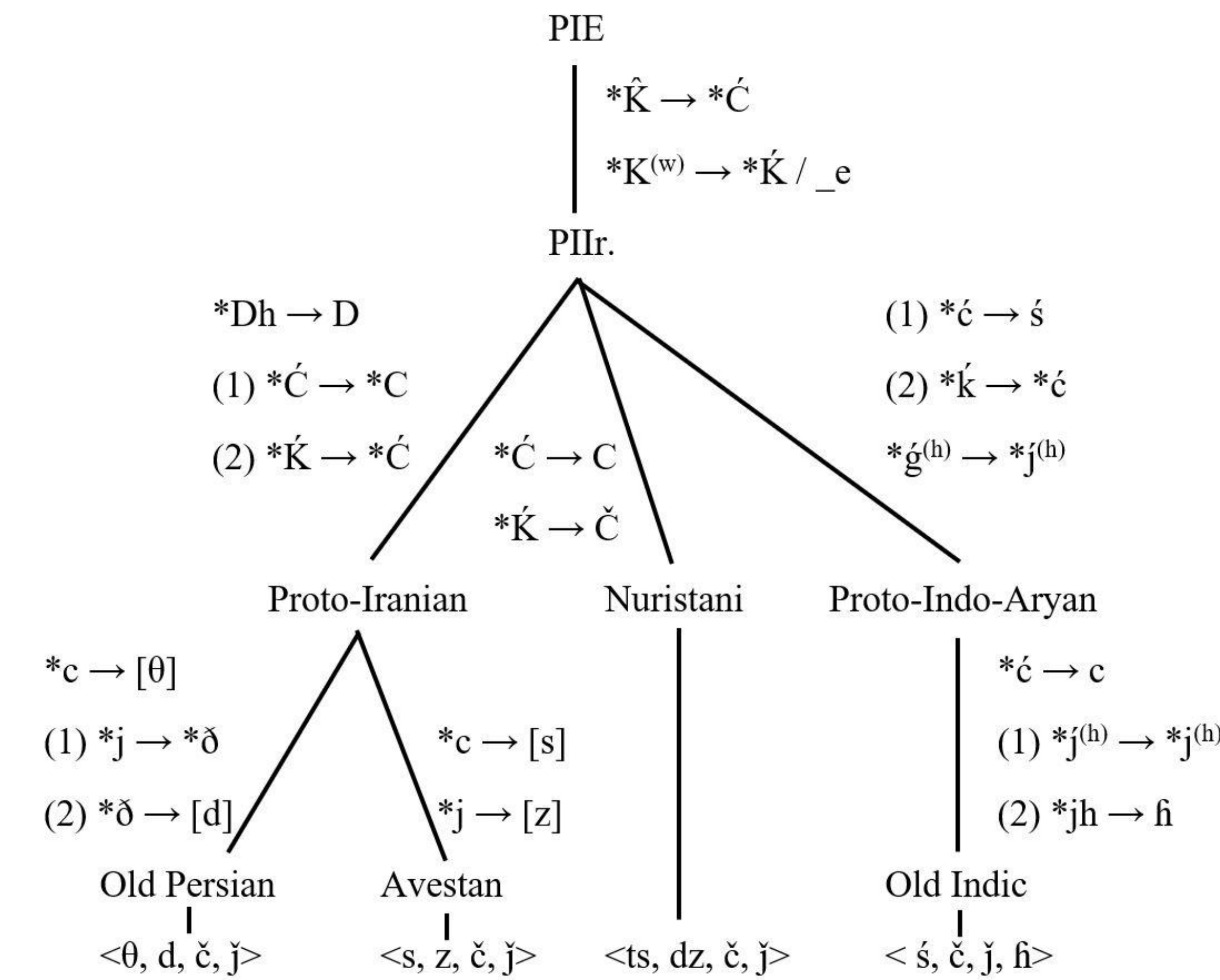| Proposal 1	Proposal 2
(1) ðᶜ → d	(1) Cᶜ → C
(2) Cᶜ → C	(2) ð → d
ð → d	

Standard solution for TH clusters

- Voiceless-stop-laryngeal aspirate so that they can deaspirate in Iranian and Nuristani.
- Laryngeals are lost on the way from Old Iranian to New Iranian: H > ∅ / C_V.
- Voiceless stops become aspirates before consonants: T > Θ / _C.
- A TH > Θ rule (with a medial Tʰ stage) is redundant.

Economical solution for TH clusters
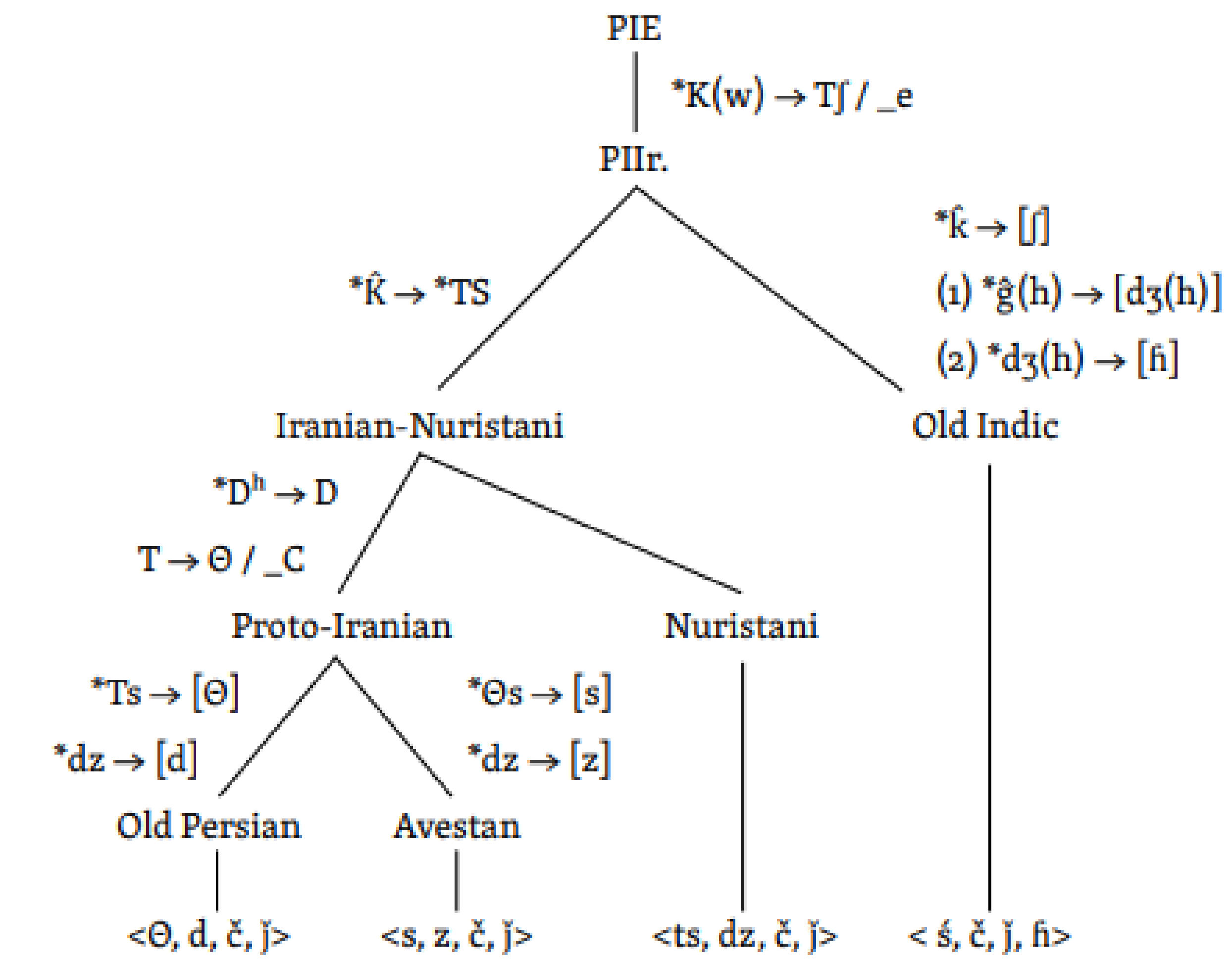

Standard solution for palatal consonants

- The dance:
  - Uralic borrows PIIr. palatovelars as velars and palatalized velars as alveo-palatals; thus,
    - Palatovelars move out of the way becoming palatal stops
  - while velars palatalize
  - This begins a chain shift
    - palatal stops become alveolar affricates
    - Palatalized velars become palatal stops (then alveo-palatal affricates)
    - Iranian breaks into two groups that deaffricate the alveolar affricates
  - In the Southwestern group,
    - [ts] > θ
    - [dz] > ð, but due to a lack of /ð/ it stops > d
  - Problems:
    - The complex dance is meant to prevent mergers. However, there is no evidence of any outcome of the palatalized velars other than alveo-palatal affricates
    - There is only a possibility of a merger in Indic, where the outcome of the voiceless palatovelar, [ʃ] is a fricative, not an affricate
    - There is no reason for *j > ð, *c > θ is already subsumed by the preconsonantal spirantization: T > Θ /_C

Economical solution for palatal consonants

Summary/Selected References

		*K(ʷ) → Tʃ / _e		
		*DH → *Dʰ		
*Ḱ → *TS			*k̂ → [ʃ] (1) *ĝ(h) → [dʒ(h)] (2) *dʒ(h) → [ɦ]	
			*TH → *Tʰ	
Dʰ → D T → Θ / _C				
*Θs → Θ *dz → d *H → ∅	*Θs → s *dz → z *H → ∅		*H → ∅	*H → ∅
Old Persian	**Younger Avestan**		**Nuristani**	**Sanskrit**

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