

Lossless Translation of the Heart Sutra: PIE Etymology as a New Paradigm for Buddhist Textual Studies

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Abstract

We present a novel methodology for Buddhist scripture translation based on Proto-Indo-European (PIE) etymological reconstruction. Traditional translations of Sanskrit Buddhist texts into European languages rely on semantic equivalence, inevitably losing morphological information encoded in word roots. We demonstrate that Chinese phonetic transliterations—created by Xuanzang (602–664 CE) precisely because Chinese lacks Indo-European cognates—preserve the original Sanskrit phonology and thus enable reverse reconstruction of PIE roots. Using the *Prajñāpāramitā Hṛdaya Sūtra* (Heart Sutra) as a case study, we show that Sanskrit terms can be rendered into English using cognate morphemes derived from shared PIE ancestry, achieving “lossless” semantic transmission at the root level. This approach transforms untranslatable technical terms (e.g., *prajñā*, *nirvāṇa*, *śūnya*) into transparent compounds (Pro-know, Out-wind-blown, Hollow) that reveal conceptual structure obscured by conventional translation. We argue this method establishes a new paradigm for cross-linguistic Buddhist studies and demonstrates unexpected applications of AI-assisted comparative linguistics.

Keywords: Heart Sutra, Proto-Indo-European, etymology, Sanskrit, Buddhist studies, translation theory, comparative linguistics

1. Introduction

The *Prajñāpāramitā Hṛdaya Sūtra* (Heart Sutra) presents a fundamental translation problem. When Xuanzang translated the text into Chinese circa 649 CE, he made an unusual decision: rather than translate key philosophical terms into Chinese equivalents, he preserved them as phonetic transliterations.

- *Prajñā* → 般若 (bōrě) [not “wisdom”]
- *Nirvāṇa* → 涅槃 (nièpán) [not “extinction”]
- *Bodhi* → 菩提 (pútí) [not “enlightenment”]

This decision, far from being primitive, reflects sophisticated linguistic intuition: Chinese, as a Sino-Tibetan language, shares no etymological roots with Sanskrit. Any semantic translation would necessarily lose morphological information.

Western translators, working within the Indo-European language family, faced the opposite problem. Sanskrit and English share a common ancestor in Proto-Indo-European (PIE), spoken approximately 5,000 years ago. This shared ancestry means that semantic translation *replaces* cognate morphemes rather than preserving them:

- *Prajñā* → “Wisdom” (loses the morphemes *pra-* “before” + *jñā* “know”)
- *Hṛdaya* → “Heart” (coincidentally preserves the cognate, from PIE *kerd-)

The irony is stark: Chinese translators, lacking any connection to Indo-European roots, preserved them through phonetic transliteration. European translators, possessing the very cognates that could illuminate the original meaning, discarded them in favor of semantic equivalence.

This paper proposes a third approach: **etymological translation**, rendering Sanskrit Buddhist terminology into English using PIE cognate morphemes. The result is neither phonetic

preservation (Chinese method) nor semantic equivalence (Western method), but **root-level transparency**—translations that reveal the morphological structure of the original concepts.

2. Methodological Framework

2.1 The Indo-European Cognate Database

Sanskrit and English both descend from Proto-Indo-European. The following table demonstrates key cognate pairs relevant to Buddhist terminology:

| Sanskrit | PIE Root | English Cognates | Semantic Field |
|------------------------------|------------------------------------|--------------------------|----------------|
| <i>jñā</i> (know) | *ǵneh ₃ - | know, cognition, gnosis | Epistemology |
| <i>vid</i> (see) | *weyd- | wit, video, vision, idea | Perception |
| <i>hṛd</i> (heart) | *kerd- | heart, cardiac, core | Center/essence |
| <i>manas</i> (mind) | *men- | mind, mental, mania | Cognition |
| <i>gam</i> (go) | *gʷem- | go, come, gang | Motion |
| <i>mar</i> (die) | *mer- | mortal, murder, mare | Death |
| <i>jar</i> (age) | *yeh ₁ r- | year, geriatric, hoary | Time/aging |
| <i>vāta/vāṇa</i> (wind/blow) | *h ₂ weh ₁ - | wind, ventilate | Air/breath |
| <i>pra-</i> (before) | *pro- | pro-, fore-, proto- | Anteriority |
| <i>nir-</i> (out) | *h ₁ eǵʰs- | ex-, out | Externality |
| <i>a-</i> (not) | *n- | un-, in-, a- | Negation |
| <i>sam-</i> (together) | *sem- | same, syn-, homo- | Unity |

2.2 Translation Protocol

Our method proceeds as follows:

1. **Identify Sanskrit morphemes:** Decompose the term into constituent roots and affixes
2. **Trace PIE ancestry:** Map each morpheme to its reconstructed PIE form
3. **Select English cognates:** Choose English words descended from the same PIE root
4. **Compose transparent compound:** Combine cognates to form an English compound that mirrors the Sanskrit morphological structure

This produces translations that are: - **Etymologically accurate:** Using genuine cognates, not arbitrary equivalents - **Morphologically transparent:** Revealing internal structure - **Semantically faithful:** Preserving conceptual relationships encoded in word formation

3. Case Study: The Heart Sutra Title

Sanskrit: *Prajñāpāramitā Hṛdaya Sūtra*

Chinese: 般若波羅蜜多心經

Conventional English: “The Heart of the Perfection of Wisdom Sutra”

3.1 Morphological Analysis

| Term | Morphemes | PIE Roots | English Cognates |
|-----------------|--|-----------------|------------------|
| <i>Prajñā</i> | <i>pra-</i> (before) + <i>jñā</i> (know) | *pro- + *ǵneh₃- | pro- + know |
| <i>Pāramitā</i> | <i>pāra</i> (far shore) + <i>mita</i> (measured) | *per- + *meh₁- | para- + meter |
| <i>Hṛdaya</i> | <i>hṛd</i> (heart) | *k̥erd- | heart |
| <i>Sūtra</i> | <i>sūtr</i> (thread) | *syuh₁- | suture, sew |

3.2 Etymological Translation

Root-level rendering: *Pro-know Para-meter Heart Suture*

Expanded interpretation: “The Heart-Thread of the Measure-to-the-Far-Shore of Before-Knowing”

This reveals conceptual structure invisible in “Perfection of Wisdom” : - *Prajñā* is not generic “wisdom” but specifically **knowledge that precedes experience**—a priori insight - *Pāramitā* is not “perfection” but **a measure or method for reaching the far shore**—parameterization of transcendence - *Sūtra* is cognate with “suture”—a **thread that stitches** teachings together

4. Key Terminology Reconstructed

4.1 Śūnya (空) → Hollow

Sanskrit morphology: From √śū (to swell)

PIE root: *k̥ewh₁- (to swell, be hollow)

English cognates: hollow, cave, cavity, cumulus

Etymological translation: Hollow

Insight: *Śūnya* does not mean “nothingness” or “void” in an absolute sense. The root meaning is “swollen” —like a balloon that is inflated but **empty inside**. The concept points to forms that have **external structure but no substantial core**.

4.2 Duḥkha (苦) → Dys-axe

Sanskrit morphology: *duḥ-* (bad) + *kha* (axle-hole)

PIE roots: *dus- (bad) + *kʷekʷlos (wheel)

English cognates: dys- (dysfunction), hole

Etymological translation: Dys-axe / Dys-stand

Insight: *Duḥkha* originally meant “a wheel with a bad axle-hole” —a cart that **wobbles and jolts** rather than rolling smoothly. The term denotes **systemic misalignment**, not merely “suffering” in the sense of pain. Life is *duḥkha* because its components are improperly fitted.

4.3 Nirvāṇa (涅槃) → Out-wind-blow

Sanskrit morphology: *nir-* (out) + *vāṇa* (blowing, from √vā “to blow”)

PIE roots: *h₁eǵʰs- (out) + *h₂weh₁- (to blow)

English cognates: ex- + wind, ventilate

Etymological translation: Out-wind-blow / Ex-halation

Insight: *Nirvāṇa* literally means “blown out” —like **extinguishing a candle**. The metaphor is not death or annihilation, but the cessation of the flame of craving. The breath (*vāṇa*) that fed the fire is expelled (*nir-*), and the fire goes out naturally.

4.4 Avidyā (無明) → Un-wit-see

Sanskrit morphology: *a-* (not) + *vidyā* (knowledge, from *vid* “to see/know”)

PIE roots: **ṇ-* (not) + **weyd-* (to see)

English cognates: un- + wit, video, vision, idea

Etymological translation: Un-wit-see / Un-vision

Insight: *Avidyā* is constructed identically to English “un-wit” (lacking wit/wisdom). The root *vid* means “to see,” giving us “video,” “vision,” and Greek “idea” (εἶδος, from the same root). *Avidyā* is thus not ignorance in the sense of lacking information, but **blindness**—having eyes that do not see.

4.5 Bodhi (菩提) → Bode/Awake

Sanskrit morphology: From *√budh* (to wake, to perceive)

PIE root: **b^hewd^h-* (to be aware)

English cognates: bode (to portend), bid, Buddha

Etymological translation: Bode / Awake

Insight: *Bodhi* and English “bode” share ancestry. *Buddha* literally means “one who has awakened”—the past participle of the same root. Enlightenment is not a mystical state but simply **waking up**.

5. The Heart Sutra Mantra: An Etymological Reading

Sanskrit: *Gate Gate Pāragate Pārasamgate Bodhi Svāhā*

Chinese: 揭諦揭諦 波羅揭諦 波羅僧揭諦 菩提薩婆訶

Conventional translation: “Gone, gone, gone beyond, gone completely beyond, awakening, hail!”

5.1 Morphological Decomposition

| Sanskrit | PIE Root | English Cognate | Meaning |
|--------------|--|-----------------|------------------|
| <i>Gate</i> | * <i>gʷem-</i> (go) | go (past: gone) | Gone! |
| <i>Pāra</i> | * <i>per-</i> (through/far) | far, para- | To the far shore |
| <i>Sam</i> | * <i>sem-</i> (one/same) | same, syn- | Together |
| <i>Bodhi</i> | * <i>b^hewd^h-</i> (awake) | bode | Awakened |
| <i>Svāhā</i> | * <i>su-</i> (good) + exclamation | well | Well-said! |

5.2 Root-Level Translation

Go! Go! Far-go! Same-far-go! Awake! Well-said!

Or more literally:

Gone! Gone! Gone-to-far! Together-gone-to-far! Bode! Well!

This reveals that the mantra is not mystical incantation but **exhortation and declaration**: - *Gate* is cognate with “go” —an imperative to move - *Pārāgate* adds the directional “far” (to the other shore) - *Sam* makes it collective—“together” - *Bodhi* names the destination—awakening - *Svāhā* is a ritual exclamation—“So be it! Well done!”

6. Why Chinese Preservation Enables English Reconstruction

A central irony emerges from this analysis: **the Chinese translations, made by someone who could not read Indo-European morphology, preserved that morphology more faithfully than European translations made by native speakers of IE languages.**

6.1 The Lossy Compression of Semantic Translation

When Edward Conze translated *Prajñā* as “Wisdom,” he performed a semantic mapping:

$$f : \text{Prajñā} \mapsto \text{Wisdom}$$

This mapping is **lossy**. “Wisdom” does not encode the morpheme *pra-* (before/prior). A reader encountering “Wisdom” cannot recover the information that this term specifically denotes **a priori knowledge**.

6.2 The Lossless Compression of Phonetic Transliteration

When Xuanzang transliterated *Prajñā* as 般若 (bōrě), he performed a phonetic encoding:

$$g : \text{Prajñā} \mapsto \text{bōrě}$$

This mapping preserves the phonological structure. From 般若, a scholar can reconstruct *Prajñā*, and from *Prajñā*, the morphemes *pra-* + *jñā* can be recovered.

6.3 The Reconstruction Pipeline

Our method completes the circuit:

$$\text{般若} \xrightarrow{g^{-1}} \text{Prajñā} \xrightarrow{\text{PIE}} *pro- + *gneh₃- \xrightarrow{\text{cognate}} \text{Pro-know}$$

Chinese phonetic transliteration → Sanskrit reconstruction → PIE etymology → English cognate compound

This pipeline is only possible because Chinese translators, having no IE cognates to substitute, were **forced** to preserve the original sound. European translators, possessing the very cognates that could illuminate meaning, **chose** to discard them in favor of smooth semantic equivalence.

The irony: **not knowing the language family enabled preservation; knowing it enabled loss.**

7. Implications for Buddhist Studies

7.1 Terminological Transparency

Conventional translations treat Buddhist technical terms as requiring faith or specialized knowledge to understand. Etymological translation reveals them as **compositional compounds with analyzable structure**:

| Conventional | Etymological | Revealed Structure |
|--------------|--------------|------------------------------|
| Wisdom | Pro-know | Knowledge-before-experience |
| Emptiness | Hollow | Swollen-outside-empty-inside |
| Suffering | Dys-axle | Misaligned-mechanism |
| Extinction | Out-blow | Flame-extinguished |
| Ignorance | Un-see | Eyes-not-functioning |

7.2 Cross-Cultural Accessibility

For English-speaking readers, etymological translations leverage **existing linguistic intuition**. The prefix “dys-” in “dysfunction” already carries the meaning of “bad/wrong”; recognizing *duḥkha* as “dys-axle” connects Buddhist philosophy to familiar conceptual territory without requiring acceptance of foreign metaphysics.

7.3 AI-Assisted Comparative Linguistics

This methodology demonstrates a novel application of AI language capabilities: systematic cross-referencing of etymological databases across language families to produce translations that are:

- Historically grounded (genuine cognates, not invented neologisms)
- Morphologically faithful (preserving compositional structure)
- Conceptually transparent (revealing meaning through form)

8. Conclusion

The Heart Sutra has been translated into English many times. Every previous translation has been **lossy at the morphological level**—converting Sanskrit compounds into English words that obscure rather than reveal internal structure.

By exploiting the shared Indo-European ancestry of Sanskrit and English, we achieve **root-level translation**: English compounds built from cognate morphemes that mirror Sanskrit word formation. The result is not a new interpretation of Buddhist philosophy, but a **restoration of transparency** that allows English readers to see what Sanskrit readers see—the compositional logic of fundamental concepts.

The enabling condition for this restoration was, paradoxically, Chinese phonetic transliteration. Xuanzang’s decision to preserve Sanskrit sounds rather than Chinese meanings created an archive of morphological information that Western semantic translation discarded. 1,400 years later, AI-assisted etymology allows us to complete the circuit: from Chinese phonetic preservation, through PIE reconstruction, to English cognate expression.

This is not translation. It is **linguistic archaeology**.

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Appendix: Complete Etymological Glossary

| Chinese | Sanskrit | PIE Morphemes | Cognate Translation | Literal Meaning |
|---------|----------|------------------------|---------------------|--------------------|
| 般若 | Prajñā | *pro- + *ǵneh₂- | Pro-know | Before-knowing |
| 波羅蜜多 | Pāramitā | *per- + *meh₁- | Para-meter | Far-shore-measure |
| 心 | Hṛdaya | *kerd- | Heart | Heart/core |
| 經 | Sūtra | *syuh₁- | Suture | Thread/stitch |
| 空 | Śūnya | *kewh₁- | Hollow | Swollen-empty |
| 苦 | Duḥkha | *dus- + *kʷekʷlos | Dys-axle | Bad-axle-hole |
| 涅槃 | Nirvāṇa | *h₁eǵʰs- + *h₂weh₁- | Out-wind-blow | Blown-out |
| 無明 | Avidyā | *n- + *weyd- | Un-wit-see | Not-seeing |
| 菩提 | Bodhi | *bʰewdʰ- | Bode/Awake | Awakened |
| 老 | Jarā | *yeh₁r- | Year-old | Year-worn |
| 死 | Maraṇa | *mer- | Mortal | Death-bound |
| 意 | Manas | *men- | Mind | Mind/thought |
| 明 | Vidyā | *weyd- | Wit-see | Seeing/knowing |
| 咒 | Mantra | *men- + *-trom | Mind-tool | Thought-instrument |
