Resonant Variation in Proto-Indo-European

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Abstract

Upon close inspection, many roots in the reconstructed vocabulary of Proto-Indo-European show similarities, both phonetic and semantic, that suggest ancient genetic affiliations. In particular, cases of resonant variation within the context of a fixed consonant structure often show striking semantic uniformity. The examples provided suggest that, at a very early pre-Proto-Indo-European stage of the language, these resonant-variations were morphological variants of earlier primitive roots. Additionally, when evaluating the likelihood of distant language affiliations, these generalized primitive roots, not their derived variants, are the principal forms that can be meaningfully compared to the lexica of other proto-languages.

Dedication

This work is dedicated to E. J. Michael Witzel, Wales Professor of Sanskrit at Harvard University, without whose contributions, both in encouragement and in helpful suggestions, this project would never have been realized.

Introduction

The following table compares three PIE roots that share a semantic field and that are identical phonetically except for the variation seen in the resonants. The question arises: Is this resemblance accidental, or does it reflect some ancient morphological system? I

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will argue that this pattern of resonant variation parallels other familiar non-
etymologically-significant root-variations such as changes in vowel gradation, s-mobile,
and nasal infix, that are universally recognized in PIE comparative linguistics.

\[ ^*g^h(R)eb^h \cdot \text{ ‘Grab, take, seize, hold’} \]

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>^*g^h^eb^h</td>
<td>^*g^h^</td>
<td>( \emptyset )</td>
<td>( b^h )</td>
<td>1</td>
<td>Grasp, seize, cause another to grasp (give)</td>
<td></td>
</tr>
<tr>
<td>^*g^h^reb^h</td>
<td>^*g^h^</td>
<td>( r )</td>
<td>( b^h )</td>
<td>2</td>
<td>Grab, seize, snatch up, devour, take</td>
<td></td>
</tr>
<tr>
<td>^*g^h^reb^h</td>
<td>^*g^h^</td>
<td>( r )</td>
<td>( i )</td>
<td>( b^h )</td>
<td>3</td>
<td>Grip, grasp, seize</td>
</tr>
</tbody>
</table>

1. \(^*g^h^eb^h\) ‘Grasp, seize, cause another to grasp, i.e. give’

Lat \( habeō \) ‘grasp, possess, have,’ Umb \( habe \) ‘have,’ OIr \( gaibid \) ‘take, take hold of, seize, catch, grasp,’ Goth \( gabei \) ‘riches, wealth,’ \( giban \) ‘give,’ Lith \( gebu \) ‘to be capable’ (\( \text{capable} \) is literally the ability to catch, take, seize), Pol \( gabać \) ‘lay hands on, seize, hold,’ WRus \( habać \) ‘take, grab.’ —LIV 193; IEW 407-09; EIEC 563; Mallory and Adams (2006) 271; Bomhard 349, 376.

Words for \( \text{give} \) and \( \text{take} \) often interchange in PIE (Watkins 2011: xxvii).

2. \(^*g^h^reb^h\) ‘Grab, seize, snatch up, devour, take’

Skt \( grbhnāti \) ‘grabs,’ MHG \( grabben \) ‘seize,’ Latv \( grebju \) ‘seize,’ OCS \( grabiti \) ‘snatch up,’ Hit \( k(a)rāp- \) ‘devour,’ Av \( gərəvənăiti \) ‘takes,’ NE \( grab \) (from MDutch). —Mallory and Adams (2006) 271; Watkins (2011) 32; IEW 455-56; EIEC 563; LIV \(^*g^h^rebh\) - 201.

3. \(^*g^h^reb^h\) ‘Grip, grasp, seize’

Goth \( greipan \) ‘grasp, seize, catch,’ Lith \( griebiū \) ‘take hold of, seize,’ ON \( greipa \) ‘commit, perpetrate,’ \( greip \) ‘grip, hand,’ OE \( grāp \) ‘fist, grip,’ NE \( grip, gripe, grope, \)

***

The semantic values of these three roots are closely aligned. Phonetically, they are identical except for the fluidity of the resonants. As will be seen in the following examples, this is no isolated instance, rather it is a common pattern seen in what appears to be the oldest strata of the language.

Some Initial Methodological Observations

1. Resonant Variants (R) may include any resonant: r, l, n, m, ū, ū, ø (null-grade), or a laryngeal: h₁, h₂, or h₃. Inside the root, laryngeals function as do the other resonants. This has been noted by Todd B. Krause and Jonathan Slocum, who write, “Given the ability of the laryngeals to vocalize between consonants, it is occasionally convenient to think of the laryngeals likewise as resonants.”

2. A root may contain zero, one, or two resonants. In rare cases, roots are found with two resonants and a laryngeal.

3. The structure of the primitive root can be generalized as: *(s)-C [+/− R (R)] -C [+/− C].

4. The glosses indicating the semantic value of PIE roots included in this analysis may sometimes differ from those given in the etymological dictionaries of Rix, Pokorny, Watkins, Mallory and Adams, Wodtko, or others. For example, in the Lexikon der Indogermanischen Verben, the root, *streu-, is glossed streuen ‘strew.’ In modern English, strew means “to spread here and there, scatter, disperse, spread over a wide area.”

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One of the attestations given in LIV for *stre̞u̞- is Latin struō. The primary definitions for that word, as given in the Oxford Latin Dictionary, are: “To set in position, arrange (so as to construct something), stand fast, ...construct, put together, build, ... build up, establish.”

It would appear then that the meaning of struō in Latin is roughly the opposite of “strew.” Rather than scattering randomly or dispersing, it indicates the placing of something very precisely for the purpose of building. The form of the perfect tense of this Latin word is structum, the source of the English words structure, and construction, two very non-random concepts.

Because of its phonetic alignment (allowing for resonant variations) with other PIE roots that signify “to set in place, to stand, to build, to establish,” it appears that Latin preserves the original meaning of the root more faithfully, and therefore *stre̞u̞- is here glossed accordingly, even though this is at variance with the general gloss given in LIV.

5. The sources for the semantic values assigned to roots are always cited following the lists of attestations. Where it has been necessary to rely on glosses given in etymological dictionaries of PIE, these have often required translation from German to English. Since that translation-process could be an opportunity for personal bias to enter in, readers may wish to verify the accuracy of those translations by consulting the sources cited and reading the German or the original languages directly.

6. The grammatical significance of resonant variations within PIE roots is unclear. They appear too systematic to have been the result of a fusion of related dialects. If they represent some archaic morphological pattern of verb aspect or of noun declension, that function is no longer obvious. The question is left for future investigators.

6 See *(s)dʰe(R)- infra.
7. The attestations cited for each root are primarily for identification purposes and are in no way exhaustive. Semantic outliers are generally excluded. The selection presented probably reflects, to some degree, the semantics of the resonant series as a whole.

8. In roots that deal with taboo subjects, one must deal with obliquities and circumlocutions at every level, both in the original documentary evidence, and at each stage of lexicography.

9. In one or two occasions, new roots have been proposed for the PIE lexicon. This occurs primarily when a word with no known etymology fits semantically and phonetically very tightly within a strong resonant series. If the reader has doubts about that inclusion, he or she is advised to disregard the proposed root, as it will rarely affect the viability or credibility of the series as a whole.

10. The s-mobile presents special challenges. When roots in a resonant-series contain forms both with and without initial *s-, those with the initial sibilant are here typically considered to be the result of the s-mobile. Where the s-mobile has been added to a root beginning with *g-, that voiced stop must have eventually become de-voiced to *sk-. In one or two cases, this assumption has been made where the semantics and phonetics are otherwise especially compelling. In like manner, where the s-mobile has been added to a root beginning with *dʰ-, that voiced stop must have eventually become de-voiced to *st-.

11. Occasionally one encounters a root that matches the semantics of a resonant-series so closely that there is no reasonable doubt that it belongs there, but that phonetically it differs in some minor quality. For formal reasons, such roots have generally been omitted from inclusion here, although future reconsideration is not out of the question.

12. The resonants function like an archaic ablaut system, acting anciently as non-etymologically-significant vowel modifiers. In the later stages of PIE, these morphological variants took on the status of independent roots as their earlier genetic affiliations were gradually forgotten.
13. It is unclear which (if any) of the resonant variants was the fundamental form of the primitive root. It is tempting to posit the zero (resonant) grade as the fundamental, since it is the simplest, but that variant is often unattested.

14. The resonant *m- functions either independently or as a variation of *n- when that nasal precedes a labial consonant.

15. The following proposed root-families are based on resonant variations that have been determined solely through internal analysis of PIE, uninfluenced by considerations of possible connections to non-Indo-European languages.

But, in order to estimate the approximate time-depth of the process that created the resonant variations, it is useful to look for comparanda among external language-families that may have possible genetic connections to PIE.

Proponents of the so-called Nostratic Hypothesis have assembled large sets of data relating to such outside language families. While remaining agnostic regarding the validity of that general hypothesis, I have made use of the data that such proponents have presented, in particular, the work of Allan Bomhard. Because his documentation of sources is explicit and well organized, his work lends itself well for comparative purposes.

Roots that appear in Bomhard’s list of 676 PIE roots for which he claims to have found a Nostratic etymology have been cited when they occur in the following resonant-families. The etymologies suggested by Bomhard vary significantly in quality, some being quite convincing and others rather doubtful. For this reason an assessment has been provided that indicates their strength and applicability for the present purposes.

If two or more PIE roots within a proposed resonant series can be shown to have strong phonetic and semantic parallels to Afrasian, Uralic, Altaic, Kartvelian, Dravidian, etc., then this would suggest that the separation of these PIE resonant-variants from an earlier primitive root occurred before the separation of PIE from the other language families. This may provide an approximation of the time-depth involved, assuming, of course, that the hypothesis of an ancient super-family is valid.
The results of this comparison are as follows:

The number of PIE resonant-families identified in this investigation: 85

The number of resonant-families in which:

One PIE root in the family has credible outside connections: 17
Two PIE roots in the family have credible outside connections: 12
Three PIE roots in the family have credible outside connections: 6
Four PIE roots in the family have credible outside connections: 2

This tally indicates that 20 of the 85 resonant families identified here show two or more roots with credible connections to the outside language groups compared by Bomhard. This would indicate that at least some of the resonant-variants within those families had differentiated during the period when PIE was still in contact with the linguistic community that would later separate into Afrasian, Dravidian, Altaic, Uralic, etc. The dates assigned to this community are approximately 12,000 to 15,000 BC (Bomhard 2014: 257). The remainder of the resonant-variants would have completed the differentiation process between that time and the point at which PIE broke up into the attested daughter languages.

It should be strongly emphasized that this preliminary attempt to assign approximate dates to the differentiation of PIE resonants is secondary to the main thesis presented here, which is the system of resonant variation within a fixed consonantal root structure.

16. Abbreviations employed include the following:

ALEW: Altltitauisches etymologisches Wörterbuch, Wolfgang Hock, et al., Berlin, 2019
Balg: Comparative Glossary of the Gothic Language, G. H. Balg, 1887-89
Bosworth and Toller: Anglo-Saxon Dictionary, Oxford University Press, 1921
Families of Proto-Indo-European Resonant-Variants

Additional representative examples of resonant-variants are shown below. This listing is not intended to be exhaustive as these are merely some of the more obvious cases. Roots are grouped by initial consonant only; the order within these groups is random.
Table 1: *h₁(R)eg- ‘Break’

<table>
<thead>
<tr>
<th>PIE Root</th>
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<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*h₁eg-</td>
<td>b₁</td>
<td>ø</td>
<td>g</td>
<td></td>
<td>1</td>
<td>Break</td>
</tr>
<tr>
<td>*h₁re₃g-</td>
<td>b₁</td>
<td>r</td>
<td>g₁</td>
<td></td>
<td>2</td>
<td>Break</td>
</tr>
</tbody>
</table>

1. *h₁eg- ‘Break’


2. *h₁re₃g- ‘Break’


Notes on possible outside root connections:
1. Bomhard 17 cites Proto-Afroasiatic *bak’, etc. ‘cleave, split, break open, scratch, tear, scrape, rake, sharpen, rip open, bore, excavate, break,’ Dravidian paku, etc. ‘split, divide, separate, apportion distribute, break, crack, go to pieces, burst, rend,’ Kartvelian *bek’, etc. ‘trample down, press close,’ Uralic *pakka- ‘burst, rend, split, break, open, blossom,’ Proto-Altaic *baka- ‘divide, separate, break, divide bread,’ Eskimo *pakak-, etc. ‘knock into, knock against and break, jostle, parry a thrust, slap,’ and Chukchi-Kamchatkan *pako- ‘strike, knock, flick, touch or knock against, cut into.’

Conclusions: The close phonetic and semantic parallels seen in the outside language families suggest a genetic connection to this PIE root.

Table 2: *h₁e(R)d- ‘Beat, break, strike, crush’

<table>
<thead>
<tr>
<th>PIE Root</th>
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<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
</table>
1. *bh*eld- ‘Beat, break, batter’

Lith bèldžiu (bèlsti) ‘beat, break, crush, pound, batter,’ Germanic *bul*ta(n) ‘bolt, rivet, pin, peg,’ Swed *bulta* ‘beat, break, batter,’ Latv bèżt ‘give a blow,’ bèžiēns ‘a blow, a blow with the fist.’ — LIV 73; IEW 124.

2. *bh*eyd- ‘Beat, strike, pound’

OE bēatan ‘beat, strike, push,’ OIr *bibd*u ‘guilty, culpable, enemy,’ MIr *bú*alaim ‘beat, strike,’ OE beafton ‘lament, bewail,’ ON bauta ‘beat, pound, strike, push,’ OE býtel ‘hammer,’ MHG bèzel ‘mallet, club.’ — LIV 82; IEW 112; Bomhard 15.

3. *bh*ead- ‘Break, split, crush, shatter, destroy’

Ved bhid ‘split, break, destroy,’ bhidāpana ‘split, break, shatter, crush, destroy,’ bhedá ‘breaking, splitting, cleaving, rending,’ a-bhedya ‘not to be divided, broken or pierced,’ KeltIber bō*etu*ù ‘chip or strike,’ Ved bhinná ‘broken, shattered, pierced, destroyed,’ Lat findō ‘split apart, cleave,’ Khot bitte ‘bore through,’ Goth beītan ‘bite.’ — LIV 70; IEW 116-17; Moiner-Williams 75,756-57,766; OLD 702.

Notes on possible outside root connections:
2. Bomhard 15 cites Proto-Afrasian *bah-, etc. ‘cut, strike, wound, drive off, kill, trap, tear,’ and Dravidian *pāy, etc. ‘butt, gore, knock against, strike, beat, shoot, kill.’

Conclusions: Although the semantics are fairly close, neither of these proposed outside connections shows a final dental consonant, so that genetic affiliation is uncertain.

Table 3: *b*h(R)ed- ‘Active water, water in movement’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>**bh*led-</td>
<td>bʰ</td>
<td>l</td>
<td>d</td>
<td>1</td>
<td>Splash, boil, splutter, seethe, bubble, gush, spout, effervesce, sparkle</td>
<td></td>
</tr>
<tr>
<td><em>bh</em>leid-</td>
<td>bʰ</td>
<td>l</td>
<td>j</td>
<td>d</td>
<td>2</td>
<td>Bubble, boil up, gush, spout, simmer, seethe, overflow, bloat</td>
</tr>
</tbody>
</table>
# HAYNES — RESONANT VARIATION IN PROTO-INDO-EUROPEAN

<table>
<thead>
<tr>
<th>*bhleu̯d-h₂-</th>
<th>bʱ</th>
<th>l</th>
<th>y</th>
<th>d</th>
<th>3</th>
<th>Have an excess of moisture, become soft or flabby; blisters, sores</th>
</tr>
</thead>
<tbody>
<tr>
<td>*bhred-</td>
<td>bʱ</td>
<td>r</td>
<td></td>
<td>d</td>
<td>4</td>
<td>Wade in water, jump, gush, spout, burst, leap, spring</td>
</tr>
<tr>
<td>*bhrend-</td>
<td>bʱ</td>
<td>r</td>
<td>n</td>
<td>d</td>
<td>5</td>
<td>Gush forth, flow, spring from, swell, steep, soak, bubble up</td>
</tr>
</tbody>
</table>

1. *bhle̱d-  ‘Splash, boil, splutter, seethe, bubble, gush, spout’

Grk παφλάζειν  ‘splash, boil, splutter, seethe,’ OHG uz-ar-pulzit  ‘bubble, effervesce, boil up, gush, spout, brim over, sparkle,’ OIr ind:láidi  ‘boast, brag,’ Latv blāžu  ‘chatter, gossip.’ — LIV 86; IEW 155; L&S 1350.

2. *bhle̱d-  ‘Bubble, boil, gush, seethe, overflow, bloat’

Grk φλοιδούμενος  ‘bubble, boil up, gush, spout, seethe,’ φλιδάνει  ‘overflow with moisture, be ready to burst, NE bloat.’ — LIV 88; IEW 156; L&S 1944.

3. *bhleu̯d-h₂  ‘Have an excess of moisture, become soft or flabby, blisters’

Grk φλυδά ‘have an excess of moisture, become soft or flabby,’ ἐκ-φλυνδάνει  ‘break out’ (in sores). — LIV 90; IEW 159; L&S 1946.

4. *bhred-  ‘Wade in water, jump, gush, spout’

Lith bredū, bredžiōti  ‘wade, walk in water,’ OCS bredo  ‘wade,’ OCzech brdu  ‘wade,’ Alb bredh  ‘leap, spring, jump, hop, gush, spout, burst.’ — LIV 91 *bhred- or *bhrend- (see note #1); IEW 164; ALEW 146.

5. *bhrend-  ‘Gush forth, flow, spring from, swell, steep, soak, bubble up’

OIr doxe-prinn  ‘gush forth, flow or arise from, spring from, swell,’ Mir bruinnid  ‘make to gush forth, make to swell up,’ Lith bri’stu  ‘steep, soak, bubble or well up, swell.’ — LIV 95; IEW 167-68.

**Table 4:** *b’h(e(R)g-  ‘Food: desire it, get a portion, prepare, eat, and enjoy it’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
</table>
1. *bhag- ‘Get a portion, share with, partake, enjoy, wish, desire, long for’

Grk ἐφαγον, φαγεῖν ‘eat, devour, Ved bhájati ‘divide, distribute, allot, share with, receive a portion, obtain as one’s share, partake of, enjoy, possess, have, prefer, choose,’ YAv baxšaiti ‘divide out,’ baxšaite ‘get a share,’ Ved abhakṣayam ‘enjoyed, drank,’ bhikṣate ‘wish, desire, long for.’ — LIV 65; IEW 107; L&S 1911; Monier-Williams 743.

2. *bhelg- ‘Wish for, desire, long for, want, crave, roast, toast, bake’

Rus bažú ‘wish, desire, long for, want, hanker after, crave,’ Grk φώγω ‘roast, toast, parch,’ OE bacan ‘bake,’ Czech bažiti ‘to long for something.’ — LIV 70; IEW 113; L&S 1967; Bosworth and Toller 65.

3. *bheug- ‘Eat, feed, drink, enjoy, nourish, support, maintain, use, possess’

Ved bhójate ‘have eaten, have enjoyed,’ Arm bowci ‘nourish, feed,’ Ved bhunákti ‘enjoy, use, possess, enjoy a meal, eat, eat and drink, consume, take possession of,’ bhunjáte ‘enjoy,’ Arm bowcanem ‘nourish, feed, support, maintain.’ — LIV 84; IEW 153; Monier-Williams 759.

4. *breyHG- ‘Need, want, require, use, enjoy, be blessed with, delight in’

Goth brūkjan ‘need, want, require, use,’ OE brūcan ‘need, want, require, use,’ Lat fruor ‘avail oneself of, enjoy, to have as one’s lot something good, to be blessed with, to derive pleasure from, delight in.’ — LIV 96; IEW 173; OLD 739-40; Bomhard 52.
Notes on possible outside root connections:

4. Bomhard 52 cites Afrasian barḵūk, etc. ‘plum, apricot,’ Dravidian piṟika, etc. ‘green mango, unripe mango,’ and Proto-Kartvelian *berq’en-, etc. ‘wild pear, wild plum.’

**Conclusions:** Semantics are dubious as they indicate specific fruits only.

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**Table 5:** *ḥe(R)̱g̱̑-* ‘Prepare, protect, or posture for conflict; intimidate, confront’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>ḥeṞg̱̑-</em></td>
<td>ḇh</td>
<td>h₁</td>
<td>̱g̑</td>
<td>̱g̑</td>
<td>1</td>
<td>Vex, irritate, reproach, threaten, menace, quarrel, struggle, fight</td>
</tr>
<tr>
<td><em>ḥelg̱̑-</em></td>
<td>ḇh</td>
<td>l</td>
<td>̱g̑</td>
<td>̱g̑</td>
<td>2</td>
<td>Puff or swell up with anger, be enraged, be inflamed with passion</td>
</tr>
<tr>
<td><em>ḥerg̱̑-</em></td>
<td>ḇh</td>
<td>r</td>
<td>̱g̑</td>
<td>̱g̑</td>
<td>3</td>
<td>Raise oneself up, prepare, store away, strengthen, entrench, fortify</td>
</tr>
<tr>
<td><em>ḥeṉg̱̑-</em></td>
<td>ḇh</td>
<td>n</td>
<td>̱g̑</td>
<td>̱g̑</td>
<td>4</td>
<td>Increase, strengthen, establish, secure, thick, tight, impervious</td>
</tr>
</tbody>
</table>

1. *ḥeṞg̑-* ‘Vex, irritate, reproach, threaten, menace, struggle, fight’

OHG bāgan ‘reprimand, reproach, scold, quarrel, struggle, fight,’ Latv buožuós ‘bristle up of the hair, annoy, vex, irritate, put out of temper,’ OIr bágaid ‘boast, brag, swagger, threaten, menace, fight,’ báig ‘fight, battle, conflict.’ —LIV 68; IEW 115.

2. *ḥelg̑-* ‘Swell up with anger, be enraged, be inflamed with passion’

OE belgan ‘to cause oneself to swell with anger, irritate oneself, enrage oneself, swell with anger, be angry, be enraged,’ ON belgja ‘puff up, swell up,’ OHG belgan glossed in Bosworth and Toller as ‘tumere, irasci’ —tumere: ‘to swell up, to be inflamed with passion or unrest, (in undesirable situations) to be in process of coming to a head,’ to be puffed up with conceit or presumption, be proud, exultant,’ —irasci: ‘to feel resentment, to be angry, to fly into a rage.’ —LIV 73; IEW 125-26; Bosworth and Toller 82; de Vries 31-32; OLD 966, 1987.
3. *bʰerǵʰ- ‘Raise oneself up, prepare, store away, strengthen, fortify’

Hit parktaru ‘raise oneself up, Arm ebarj ‘raise up, seize, capture, store away, provide for,’ TochB parka, TochA pārk ‘raise oneself up,’ Grk ἱφτάω ‘entrench, fortify, make fast,’ Ved barhāyā sām ‘strengthen,’ ni-barhāyas ‘cast down,’ OIr dībaing ‘throw, cast,’ Ved ḅaṛhāṇa ‘firm, strong.’ —LIV 78; IEW 140-41; Bomhard 49; EIEC 269.

4. *bʰenǵʰ- ‘Increase, strengthen, establish, secure, thick, tight, impervious’

Ved baṁhayate ‘grow, increase,’ bāṁhishṭha ‘strongest,’ OAv da-bažaiti ‘establish, secure, strengthen,’ Grk παχύς ‘thick, tight, impervious, stout.’ —LIV 76; IEW 127-28; Monier-Williams 719; Bomhard 69.

Notes on possible outside root connections:
3. Bomhard 49 cites Proto-Afrasian *birVg-, etc. ‘be high, rise, high, tall, height,’ Dravidian per, etc. ‘great, grow thick, large, stout, become numerous, multiply, become full, swell, increase, augment, enlarge, prosper, expand, extend’ (without final consonant), and Proto-Kartvelian *br̥g-, etc. ‘strong, high, large, firm, bold, hill.’

4. Bomhard 69 cites Proto-Afrasian b[ub]n-, etc. ‘puff up, inflate, expand, swell, grow, abound, face, features, figure, beautiful, bead, pellet, have plenty, abound in food’ (without final consonant), Proto-Dravidian *poṅk-, etc. ‘increase, swell, expand, boil up, shoot up, rise, grow high, abound, flourish, spread, burst open,’ Uralic *puŋka, etc. ‘rounded protuberance, lump, knob, bump, hump, swollen or expanded object, ball, gnarl, clod,’ Altaic boŋgo, etc. ‘point, apex, first, fellow, chap, lad, thick, big,’ and Eskimo poŋuk, etc. ‘mound or hillock, hill, swell, rise in a lump, dune, pimple, wart, blister.’

Conclusions: The (for the most part) credible outside parallel forms for roots 3 and 4 suggest that a division into these resonant groups occurred prior to the separation of PIE from the other language families. Forms without final consonant are doubtful.

Table 6: *bʰe(R)H- ‘Strike, beat, break out’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*bʰerH-</td>
<td>bʰ</td>
<td>r</td>
<td>H</td>
<td></td>
<td>1</td>
<td>Beat, strike, break open, pound, threaten, abuse, affront, fight</td>
</tr>
<tr>
<td>*bʰeʃH-</td>
<td>bʰ</td>
<td>i</td>
<td>H</td>
<td></td>
<td>2</td>
<td>Beat, strike, batter, destroy, beat unmercifully, wipe out, strike root</td>
</tr>
</tbody>
</table>
HAYNES — RESONANT VARIATION IN PROTO-INDO-EUROPEAN

<table>
<thead>
<tr>
<th>Root</th>
<th>Transliteration</th>
<th>Translation</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>*bʰreyH-</td>
<td>bʰ r u H</td>
<td>Break, destroy, demolish, bud, sprout, germinate, strike root</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*bʰleuH-</td>
<td>bʰ l u H</td>
<td>Beat, strike, scourge, murder, beat severely, strike a blow</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. *bʰerH- ‘Beat, strike, break open, pound, threaten, abuse, affront, fight’

ON berja ‘beat, strike,’ Lat feriō to strike with the hand, deal a blow, strike with a weapon, flog, strike down, kill, break, destroy, cut open, pierce, wound,’ Alb bie ‘beat, pound, strike,’ bren ‘gnaw, eat into, erode,’ Skt bhr̥ṇāti ‘threaten, menace, insult, abuse, affront,’ OCS borjo ‘to fight, to battle,’ Lith baru ‘reproach, chide, upbraid.’ — LIV 80; IEW 133-35; OLD 686; Bomhard 35.

2. *bʰezH- ‘Beat, strike, destroy, beat unmercifully, germinate, strike root’

OLat perfines ‘batter, beat unmercifully, destroy, wipe out,’ OIr benat ‘beat, strike,’ OCS biti ‘beat, strike, deal a blow,’ biše ‘beat, strike,’ Alb (m-)bin ‘germinate, sprout’ (i.e., the seed “breaks open, striking root”). — LIV 72; IEW 117-18.

3. *bʰreuyH- ‘Break, destroy, demolish, bud, sprout, germinate, strike root’


4. *bʰleyuH- ‘Beat, strike, scourge, murder, beat severely, strike a blow’

Goth bliggwan ‘beat, strike, scourge, murder, beat severely’ (ggw < ww), ME bêwe ‘to beat, strike,’ OHG bliuwan ‘strike, beat.’ — LIV 90; IEW 125; Balg 56-57; Kluge 84.

Notes on possible outside root connections:
1. Bomhard 35 cites Proto-Afrasian *bar-, etc. ‘cut, cut down, carve, scrape, trim, shape, sharpen, scratch off,’ Proto-Kartvelian *berg-, etc. ‘to hoe,’ Proto-Uralic *parz-, etc. ‘scrape, cut, carve, whittle, hew, trim,
chip, to plane, rub, dress hides, cut leather,’ and Chuk-Kamch ‘pare-, etc. ‘shave, plane, remove hair from.’

**Conclusions:** Semantic parallels are only fair. Except for Kartvelian, proposed outside roots all lack the final consonant of the PIE forms, rendering any genetic connection doubtful.

**Table 7:** *(s)bʰ(R)e- ‘Bright, shining’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*bʰe₂h₂-</td>
<td>bʰ</td>
<td>ø</td>
<td>h₂</td>
<td></td>
<td>1</td>
<td>Bright, shining</td>
</tr>
<tr>
<td>*bʰer-</td>
<td>bʰ</td>
<td>ø</td>
<td>r</td>
<td></td>
<td>2</td>
<td>Shining, light brown</td>
</tr>
<tr>
<td>*bʰel₁-h₁-</td>
<td>bʰ</td>
<td>ø</td>
<td>l</td>
<td></td>
<td>3</td>
<td>White, shining</td>
</tr>
<tr>
<td>*bʰe₂j₂-</td>
<td>bʰ</td>
<td>ø</td>
<td>j</td>
<td></td>
<td>4</td>
<td>Pure, shining</td>
</tr>
<tr>
<td>*(s)bʰen-g-</td>
<td>bʰ</td>
<td>ø</td>
<td>n</td>
<td></td>
<td>5</td>
<td>Light up, shine, glisten, ring, resound</td>
</tr>
<tr>
<td>*bʰre₁-ɡ₂-</td>
<td>bʰ</td>
<td>r</td>
<td>h₁</td>
<td></td>
<td>6</td>
<td>Shine, sparkle, bright, birch, ash tree</td>
</tr>
<tr>
<td>*bʰro₂-nōs-</td>
<td>bʰ</td>
<td>r</td>
<td></td>
<td></td>
<td>7</td>
<td>White, pale</td>
</tr>
<tr>
<td>*bʰle₂-ɡ-</td>
<td>bʰ</td>
<td>l</td>
<td></td>
<td></td>
<td>8</td>
<td>Light up, blaze, flame, shine, lightning</td>
</tr>
<tr>
<td>*bʰle₂-ɡ-</td>
<td>bʰ</td>
<td>l</td>
<td>j</td>
<td></td>
<td>9</td>
<td>Gleam, glisten, light up, shine, lightning</td>
</tr>
<tr>
<td>*bʰle₂-ɡ₁-</td>
<td>bʰ</td>
<td>l</td>
<td>j</td>
<td></td>
<td>10</td>
<td>Shining fish, to bleach, fire</td>
</tr>
<tr>
<td>*bʰle₂-s-</td>
<td>bʰ</td>
<td>l</td>
<td></td>
<td></td>
<td>11</td>
<td>Blaze</td>
</tr>
<tr>
<td>*bʰle₂-ɡ₁-</td>
<td>bʰ</td>
<td>l</td>
<td>j</td>
<td></td>
<td>12</td>
<td>Clear, bright, light, color, agreeable</td>
</tr>
<tr>
<td>*bʰle₂-ɡ₁-</td>
<td>bʰ</td>
<td>l</td>
<td>h₁</td>
<td></td>
<td>13</td>
<td>White flecks, lightning, ivy, scar</td>
</tr>
<tr>
<td>*bʰle₂-ɡ₁-</td>
<td>bʰ</td>
<td>l</td>
<td>j</td>
<td></td>
<td>14</td>
<td>Burn, flame, torch, blush, gleam, shine</td>
</tr>
</tbody>
</table>

1. *bʰe₂h₂- ‘Bright, shining’

Ved bhāti ‘shine, be bright or luminous, to be splendid or beautiful,’ YAv fra-uuāiti ‘shine forth,’ Grk φῶς ‘shine, bring to light, appear,’ φάσις ‘appearance of stars above the horizon,’ Arm banam ‘open, reveal, allow to be seen.’ – Mallory and Adams (2006) 330; LIV 1.*bʰe₂h₂- 68; IEW 1.*bhā- 104-105; Monier-Williams 750; L&S 1912, 1918; NIL 7; Bomhard 13; EIEC 513.

2. *bʰer- ‘Shining, light brown’

3. *bʰel-*  ‘White, shining


4. *bʰe̞-gʷ*  ‘Pure, shining


5. *(s)bʰen-g-*  ‘Light up, shine, shimmer, flicker, glisten, ring, resound

Grk *φέγγω* ‘make bright, shine, gleam,’ *φέγγος* ‘light, splendor, luster, the gleam of the sun, moonlight or of the Milky Way,’ Lith *spengiu* ‘ring, resound,’ Lith *spingiu* ‘shimmer, flicker, sparkle, glisten.’ —LIV 512; IEW sp(h)eng 989-90.

6. *bʰreh̥-gʷ*  ‘Shine, sparkle, gleam, bright, birch, ash tree’


7. *bʰro-dʰnós-*  ‘White, pale

OCS *bronū* ‘white, variegated’ (of horses), Skt *bradhná-* ‘pale, red, yellowish, bay’ (of horses), Kashmiri *bodur* ‘tawny bull.’ —Mallory and Adams (2006) 332.
8. *bhle-g-  ‘Light up, blaze, flame, shine, lightning’


9. *bhlei-g-  ‘Gleam, glisten, light up, shine, lightning’


10. *bhle-q-  ‘Shining fish, bleach, fire’

OE bælge ‘gudgeon’ (a small shiny fish), NHG Blecke ‘whitefish,’ Rus blēknutъ ‘bleached by the sun, fire.’ — IEW 157.

11. *bhle-s-  ‘Blaze’

MHG blas ‘bald, pale, white,’ OE błęse ‘torch, fire,’ NE blaze, OHG blas-ros ‘a horse with a white patch on its forehead.’ — IEW 158; Bomhard 21.

12. *bhle-  ‘Clear, bright, light, color, agreeable’


13. *bhleh1-u-  ‘White flecks, lightning, ivy, scar’


14. *bhley-(k)-  ‘Burn, flame, torch, blush, light up, gleam, shine’

Grk περιφλύω ‘to singe all around,’ ON blys ‘flame,’ OE blýsa ‘flame, torch,’ NE blush, MHG bliehen ‘burning, lighting up,’ Czech blýšťěti ‘gleam, shimmer,’ blyškati ‘shine.’ — IEW *bhleu-(k)- 159; Bomhard 21.
Notes on possible outside root connections:
1. Bomhard 13 cites Proto-Afrasian *bah-, etc. ‘shine, bright, brilliant, glitter, be beautiful, splendid, radiant, rejoice, glad, happy, white, leprous.’
2. Bomhard 55 cites Proto-Afrasian *bor-, etc. ‘color, red, yellow, brown, gray, dull, black,’ and Proto-Altaic *boryV, etc. ‘dark-colored, gray, brown, swarthy, brown stag.’
3., 8., 11., 12., 16. Bomhard 21 cites Proto-Afrasian *bal-, etc. ‘shine, be bright, gleam, smile, dawn, be glad, clear, gay, beautiful, nice, sparkle, glitter, flash, scintillate, flash of lightning, blaze, flame, flicker,’ Dravidian *palapala, etc. ‘glitter, shine, gleam, brightness, flash, pureness, to light,’ and Altaic (Turkish) *balki ‘shimmer, glitter.’
7. Bomhard 33 cites Proto-Afrasian *bar-, etc. ‘shine, be bright, sparkle, flash, lightning, scintillate, purify, clean, make white, light up, dawn,’ Dravidian *par, etc. ‘become a little light before dawn, to dawn, to shine, be seen clearly,’ and Proto-Kartvelian *bar-, etc. ‘glow, burn, blaze, flame, shine, brightness, to light, illuminate, white.’

Conclusions: These roots are well represented in language families outside PIE and they are semantically close or very close. This suggests that the creation of these resonant variants occurred before the separation of the related language families.

Table 8: *bʰe(R)dʰ- ‘Cause or experience an inner state of mind’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*bʰendʰ-</td>
<td>bʰ</td>
<td>n</td>
<td>dʰ</td>
<td></td>
<td>1</td>
<td>To bind, feel obligated, feel bound, constrained, or compelled</td>
</tr>
<tr>
<td>*bʰeudʰ-</td>
<td>bʰ</td>
<td>ʔ</td>
<td>dʰ</td>
<td></td>
<td>2</td>
<td>To feel awake, observant, experienced, dominant, knowledgeable, flattered</td>
</tr>
<tr>
<td>*bʰeʔdʰ-</td>
<td>bʰ</td>
<td>ɨ</td>
<td>dʰ</td>
<td></td>
<td>3</td>
<td>To feel trust, confidence, obligation, obedience, coercion, patience</td>
</tr>
<tr>
<td>*bʰeh₁dʰ-</td>
<td>bʰ</td>
<td>h₁</td>
<td>dʰ</td>
<td></td>
<td>4</td>
<td>To feel threatened, beset, pressed; to feel disgust or loathing</td>
</tr>
<tr>
<td>*bʰlendʰ-</td>
<td>bʰ</td>
<td>ɨ</td>
<td>n</td>
<td>dʰ</td>
<td>5</td>
<td>To feel mixed up, deceived, ashamed, mistaken, dazzled, blind</td>
</tr>
<tr>
<td>*bʰedʰ-</td>
<td>bʰ</td>
<td>ø</td>
<td>dʰ</td>
<td></td>
<td>6</td>
<td>To feel need, pray, ask, hunger, convince, bend oneself as a suppliant, honor</td>
</tr>
</tbody>
</table>

1. *bʰendʰ- ‘To bind, feel obligated, bound, constrained’
Goth *bindan* ‘bind, constrain, oblige, to bind oneself, feel bound or compelled,’
Ved *badhnāti* ‘bind, tie, fasten, join, unite,’ OE *bendan* ‘bend, bind, fetter,’ NE *bind,*
Lith *beñdras* ‘companion,’ Grk *πενθερός* ‘father-in-law,’ Skt *bāndhu* ‘kinsman,
connection, kinship.’ — LIV 75; IEW 127; Monier-Williams 720; Mallory and
Adams 380; EIEC 64, 196; Bomhard 25.

2. *b*eud*- ‘To feel awake, observant, experienced, dominant, knowledgeable,
flattered’
Grk *πυνθάνομαι* ‘to hear or learn something,’ *πεύθομαι* ‘examine, experience,’
OIr *ad:boind* ‘announce, make known, foretell,’ Ved *bódhati* ‘wake up, observe,
learn, understand, recognize,’ Goth *ana-biudan* ‘order, command, direct, put in
order, arrange,’ ON *bjóða* ‘ask, offer, invite, prescribe, forbid,’ NE *bid,* Rus *bljudú* ‘
observe, pay attention to,’ TochB *pautoy* ‘coax,’ TochA *poto* ‘flattery.’ — LIV 82;
IEW 150-52; Fortson 410; L&S 1554; Moinier-Williams 773; Mallory and
Adams (2006) 326; Bomhard 39; EIEC 516.

3. *b*eidh*- ‘To feel trust, confidence, obligation, obedience, coercion, patience’
Alb *bind* ‘convince, persuade,’ *be* ‘oath,’ Grk *πείθομαι* ‘be persuaded, yield, obey,
trust, feel confidence,’ Lat *fidō* ‘trust in, have confidence in,’ Goth *baidjan* ‘force,
oblige,’ OE *bædan* ‘urge,’ OCS *běždǫ* ‘force, oblige,’ — LIV 71; IEW 117; L&S 1353-
54; OLD 698-99; Mallory and Adams (2006) 355; EIEC 418; Benveniste 75, 85, 88.

4. *b*ehdh*- ‘To feel threatened, beset, pressed; to feel disgust or loathing’
Ved *bādhate* ‘press, force, drive away, harass, pain, trouble, grieve, vex, suffer,
feel an aversion for, loathe,’ *bādhā* ‘annoyance, molestation, affliction, distress,
pain, trouble,’ Lith *bėdā* ‘need, grief, sorrow, worry, care.’ — LIV 68; IEW 114;
Monier-Williams 727-28; Bomhard 7.

5. *b*lendh*- ‘To feel mixed up, deceived, ashamed, mistaken, dazzled, blind’
Lith *blandyti* ‘to be gloomy, dreary, cheerless, sad, melancholy, overcast, dull,
dim, dead, flat, clouded, lost, wandering about trying to find the way,’ Latv *
blūōdītīes* ‘dawdle, loiter about, prowl around, rove about, be ashamed, be
ashamed of oneself,’ OCS *blēdq* ‘go astray, sin, fornicate, be mistaken,’ Rus *
blud*
‘unchastity, lewdness,’ ON bland ‘mix up,’ OE blenden ‘dazzle, deceive, blind,’ NE blind, blunder.’ — LIV 89; IEW 157-58; Mallory and Adams (2006) 330; ALEW 131; EIEC 147; Bomhard 66.

6. *bʰedʰ- ‘To feel need, to pray, to ask, to request, to hunger, to convince, to bend oneself as a suppliant, to honor’


Notes on possible outside root connections:
1. Bomhard 25 cites Afrasian (Egyptian) bnd ‘wrap, put on clothing,’ Proto-Kartvelian *band-, etc. ‘plait, interweave, braid, patch up, twist or tie together, spider’s web,’ and Proto-Chukchi-Kamchatkan *(l)panit, etc. ‘tie, tie laces, binding, tying, bundle.’
2. Bomhard 39 cites Afrasian (Proto-Semitic) *baw-ah ‘become known, be revealed, disclose, be seen, revealed, clear, be visible, understand, stare, remember’ (without final dental consonant).
3. Bomhard 7 cites Afrasian (Proto-Semitic) *bad-āl-, etc. ‘be afflicted with pain, suffer, inflict pain, cause harm, damage, injury, disease, do wrong, commit injustice, mistreat, offend,’ and Dravidian pāṭ, etc. ‘occur, happen, come into being, rise, strike against, touch, suffer, endure, affliction, experience emotion, seem good, feel, trouble, suffer, experience, enjoy.’
4. Bomhard 66 cites Proto-Afrasian *bul-, etc. ‘mix, mix up, confuse, idle, useless, spoil, ruin, disquiet, make uneasy or restless, stir up, rouse, disturb, trouble, messed up, scattered,’ and Proto-Altaic *būl-, etc. ‘stir, shake, stir up, smear, soil, mix, become turbid,’ (neither with final consonant).
5. Bomhard 8 cites Dravidian pāṭtīṇi, etc. ‘fasting, abstinence, starvation, privation of food, hunger.’

Conclusions: Three of these six roots (1, 4, 6) show credible phonetic and semantic parallels, suggesting that the creation of those resonant variants occurred before the separation of PIE from the other language groups.

| Table 9: *bʰ(R)e̞u̯-s- ‘Swell, overflow’ |
|-----------------|-------|-------|-------|-------|-----------------|
| PIE Root | Initial | R1 | R2 | Final | Ref | Semantic Value |
| *bʰle̞u̯- | bʰ | l | ʒ | 1 | Spew, gush, overflow, boil over |
| *bʰre̞u̯- | bʰ | r | ʒ | 2 | Swell, breast, belly, bud |
1. *bʰley- ‘Swell, spew, gush, overflow, boil over’

Lith bliaiu ‘roar, bleat, low,’ OCS bljujo ‘spew, vomit,’ Grk φλέω ‘gush, teem, overflow,’ φλοίω ‘overflow with words, talk idly.’ From *bʰley-: Grk φλυδάω ‘have an excess of moisture,’ TochAB plät ‘arise, develop, swell, overflow,’ TochA plutk- ‘arise, develop, swell, overflow.’ From *bʰley-: Lat fluō ‘flow,’ flūmen ‘river,’ fluvius ‘river,’ Grk φλύζω ‘boil up, boil over.’ —EIEC 561; IEW 158-59; Bomhard 19.

2. *bʰreu̯-s ‘Swell, breast, belly, bud’


Notes on possible outside root connections:
1. Bomhard 19 cites Afrasian *bal- ‘flow, overflow, pour over,’ Kartvelian li-bēl-e ‘swell up,’ Altaic balbai- ‘to swell, to bulge,’ and Chuk-Kamch *palka, etc. ‘flow.’
2. Bomhard 26 cites Afrasian *bar- ‘swell, puff up, expand,’ Dravidian paru, etc. ‘become large, bulky, plump, to swell,’ Uralic *par₃ ‘swarm, flock, shoal, troop.’ The Afrasian and Dravidian semantics are close, Uralic more distant.

Conclusions: Both these roots show credible parallels with the PIE forms, suggesting that the formation of those resonant variants occurred before the separation of PIE from the other language groups.

* d-

Table 10: *dre(R)- ‘Sleep’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*dreh₁-</td>
<td>d</td>
<td>r</td>
<td>ū</td>
<td>h₁</td>
<td>1</td>
<td>Sleep</td>
</tr>
<tr>
<td>*drem-</td>
<td>d</td>
<td>r</td>
<td>m</td>
<td></td>
<td>2</td>
<td>Sleep</td>
</tr>
</tbody>
</table>

1. *dreh₁- ‘Sleep’

2. *drem- ‘Sleep’


Table 11: *dre(R)- ‘Run’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*drem-</td>
<td>d</td>
<td>r</td>
<td>m</td>
<td></td>
<td>1</td>
<td>Run, cause to run away, run around</td>
</tr>
<tr>
<td>*dreh₂-</td>
<td>d</td>
<td>r</td>
<td>h₂</td>
<td></td>
<td>2</td>
<td>Run, run away, run loose</td>
</tr>
<tr>
<td>*drey-</td>
<td>d</td>
<td>r</td>
<td>ɸ</td>
<td></td>
<td>3</td>
<td>Run</td>
</tr>
</tbody>
</table>

1. *drem- ‘Run, cause to run away, run around’

Grk ἔδραμον ‘ran,’ δρόμος ‘horse race, foot race, race course,’ δρομεύς ‘a runner,’ Khot dremāte ‘drive away,’ Ved dandramamāṇa ‘run around.’ — LIV 128; IEW 204-5; L&S 450; Bomhard 272; EIEC 491.

2. *dreh₂- ‘Run, run away, run loose’

Ved drātu ‘shall run,’ Grk ἀπ-ἔδραν ‘ran away,’ ἀπο-διδράσκω ‘run away,’ Ved dadrur ‘they are running loose.’ — LIV 127; IEW 204; EIEC 491.

3. *drey- ‘Run’

Ved drāvati ‘runs,’ drāvāyati ‘let run,’ ἀδυδρότ ‘has run,’ dudrāva ‘ran.’ — LIV 129; IEW 205-6.

Notes on possible outside root connections:
1. Bomhard 272 cites Afrasian ẓărā, etc. ‘flow, run, have diarrhea,’ Proto-Dravidian *cor- (< *cory-) ‘run, flee, run away, go away,’ Proto-Uralic *bors-, etc. ‘run, flow, falling drops, drip, trickle,’ and Proto-Altaic *çors-ka, etc. ‘swift stream, current, rapid, rapids of a river, torrent, shoal in a river, roar, run quickly, flow rapidly, roaring (as water).’ Conclusions: All of these show reflex of initial dental plus –r, with semantics mostly pertaining to run, flow. Likely root connection to PIE.

Table 12: *de(R)k- ‘Take in, see, observe, understand, point out’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
</table>
1. *dekk-  ‘Take in, see, understand, watch, appear, resemble, honor’

Arm etes ‘see,’ Grk δέκτο ‘receive, understand,’ δοκεύω ‘keep an eye on, watch narrowly,’ δοκεί ‘appear,’ Lat didici ‘to have learned, hence to know,’ Hit takkanzi ‘to resemble, be like.’ —LIV 109; IEW 189-90; L&S 377, 441; EIEC 564.

2. *derk-  ‘Look, see, keep the eyes open, come to know’

Ved dárśam ‘see,’ OAv dāršam ‘see,’ Grk δρακέντ- ‘have looked,’ δέρκομαι ‘look, keep the eyes open,’ OIr ad:con-dairc ‘have seen,’ Goth ga-tarhjan ‘come to know.’ —LIV 122; IEW 213; EIEC 505.

3. *deijk-  ‘Cause someone to see or understand, show, point out, indicate’

Grk δείκνυμι ‘show,’ Ved ádiṣṭa ‘have shown,’ Lat dicō ‘say,’ Goth ga-teihan ‘announce, inform, point out, make known, proclaim,’ OHG zīhan ‘make known, accuse,’ YAv daēsaiieïti ‘show, indicate, point out.’ —LIV 108; IEW 188-89; Benveniste 392-93; Mallory and Adams (2006) 353-54.

| *dekk- | d | ø | k | 1 | Take in, receive, see, understand, watch, appear, resemble, keep an eye on |
| *derk- | d | r | k | 2 | Look, see, keep the eyes open, have seen, come to know |
| *deijk- | d | i | k | 3 | Cause someone to see or understand, show, point out, indicate’ |

---

**Table 13:** *dh(R)b-  ‘Strike, break, injure’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref.</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*dh braking b-</td>
<td>d̡</td>
<td>ø</td>
<td>b̡</td>
<td>1</td>
<td>Strike, injure, kill</td>
<td></td>
</tr>
<tr>
<td>*dhrub-</td>
<td>d̡</td>
<td>r</td>
<td>u</td>
<td>b̡</td>
<td>2</td>
<td>Break up, crumble</td>
</tr>
<tr>
<td>*demb-</td>
<td>d̡</td>
<td>m</td>
<td>b̡</td>
<td>3</td>
<td>Break to pieces, annihilate</td>
<td></td>
</tr>
<tr>
<td>*dheub-</td>
<td>d̡</td>
<td>u</td>
<td>b̡</td>
<td>4</td>
<td>Strike, tap, dub</td>
<td></td>
</tr>
<tr>
<td>*dheHb-</td>
<td>d̡</td>
<td>H</td>
<td>b̡</td>
<td>5</td>
<td>Strike, one who strikes metal/wood, smith</td>
<td></td>
</tr>
</tbody>
</table>
1. *dʰe>bʰ- ‘Strike, injure, destroy’

Ved dabhāti ‘hurt, injure, destroy, deceive,’ dabhi’ti ‘injurer, enemy,’ YAv dauuainṭi ‘bring injury,’ Hit tepnuzzi ‘to reduce, to humble, humiliate,’ OAv dābaieiti ‘deceive, betray,’ Lith dōbju ‘overcome, overpower,’ Lett dâbjū ‘beat, strike.’ —IEW 240; LIV 132-33; NIL 85; Monier-Williams 469; Bomhard 245.

Note: See *(s)dʰe(R)bʰ- (below) for Baltic forms that connote “hole, grave.”

2. *dʰre>ṛbʰ- ‘Break up, crumble’


3. *dʰe>mᵇʰ- ‘Break to pieces, annihilate’

Ved dambhāyati ‘smash, crush, break to pieces, annihilate,’ Chwar ḍnby ‘beat, strike,’ Ved dambḥā-ḥ ‘betray.’ —LIV 3.*dʰembh- 144; IEW *dhebh- 240.

4. *dʰe>ybʰ- ‘Strike, beat, tap, dub’

OHG tubila ‘dowel-pin, peg, stake,’ EFris dufen, duven ‘push,’ Neth dof ‘push,’ ON dubba and OE dubbian ‘dub a knight,’ ProtoGerm *dab ‘beat, strike, hit.’ —IEW * dheubh- 268.

5. *dʰe>Hbʰ- ‘Beat, strike; a craftsman who strikes metal/wood (to make it fit)’

Norw dial dabba ‘stamp,’ ON an(d)dofa ‘(naut.) to beat against the wind,’ NE dab ‘tap lightly,’ EFr is dafen ‘beat, clap, push,’ MHG beteben ‘press,’ Germanic tappen ‘slap, smack,’ Lat faber ‘craftsman,’ Goth ga-dob ‘to fit, to be suitable, appropriate.’ —IEW 1.*dabh- and 2.*dabh- 233; LIV 135-36; Mallory and Adams (2006) 283; Bomhard 144; EIEC 139.

The fundamental meaning of this root is to beat or strike. Secondarily, it carries the semantic value of to fit, be suitable. Typically, with fabrication of any sort, in order to make a given material fit, it needs to be trimmed, cut, or hammered to the right size. All of these activities were anciently performed with pounding and cutting stones, then
later with metal hammers and axes. These activities always involved *beating*, and were carried out by craftsmen.

Notes on possible outside root connections:
1. Bomhard 245 cites Proto-Afrasian *dvabh-, etc. ‘beat, hit, strike, harm, injure, kill, slaughter, sacrifice, offering, murder, skin an animal,’ Dravidian *cavattu, etc. ‘destroy, ruin, beat, tread upon, trample, kick, step on,’ Uralic (Proto-Finnno-Ugrian) *trapp-, etc. ‘hit, cut, notch, strike, timbered superstructure on a tomb,’ and Proto-Chuk-Kamch *dopax(ηε), etc. ‘hammer, pestle for crushing, stone hammer.’
5. Bomhard 144 cites Proto-Afrasian *dabh-, etc. ‘stick together, join together, adhere, cling, unite, bring together, gather, plait, put together, include, add, hand, arm.’

Conclusions: These two reasonably strong parallels to outside language families suggest a likely differentiation of resonants prior to separation.

Table 14: *(s)d³eh(R)b³- ‘Bury the dead’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref.</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*d³eb³-</td>
<td>d³</td>
<td>ø</td>
<td>b³</td>
<td></td>
<td>1</td>
<td>Pit, hole, grave</td>
</tr>
<tr>
<td>*d³elb³-</td>
<td>d³</td>
<td>l</td>
<td>b³</td>
<td></td>
<td>2</td>
<td>Dig, hollow out</td>
</tr>
<tr>
<td>*d³emb³-</td>
<td>d³</td>
<td>m</td>
<td>b³</td>
<td></td>
<td>3</td>
<td>Grave, tomb, funeral; to be buried</td>
</tr>
<tr>
<td>*(s)d³erb³-</td>
<td>(s)d³</td>
<td>r</td>
<td>b³</td>
<td></td>
<td>4</td>
<td>To be in peril, spoil, rot, perish, die</td>
</tr>
</tbody>
</table>

1. *d³eb³- ‘Pit, hole, grave’

Latv duobs ‘pit, hole, grave, excavation, hollow,’ Lith dúoba, duobà ‘hollow in tree-trunk,’ Lith duobë ‘pit, hole, grave,’ Latv dúobë ‘hole, grave.’ —Wodtko, et al., *Nomina im Indogermanischen Lexikon* (NIL), s.v. “*d³eb³- ”, (Heidelberg: Universitätsverlag Winter, 2008) 85, 86n11, 122; ALEW 278; LIV*d³eb³- 132-33; IEW *dhebh- 240; see also IEW 267-68 and ALEW 205-06.

Other researchers (see the LIV and NIL citations above) have attempted to place these Baltic words with roots connoting ‘hurt, injure, deceive,’ but usually with notations to the effect that the root affiliation remains “unclear” or “very doubtful.” Although there is certainly some semantic correspondence between the concepts “injure” and “the grave,” postulating a set of homophonous roots in *d³eb³- and separating the two senses may be the best solution (see *d³eh(R)b³- ‘Strike, break, injure’ above). Glosses for these Balt. words were taken from NIL and ALEW.
2. *d\textsuperscript{h}elb\textsuperscript{h}-  ‘Dig, hollow out’

NE delve, OE delfan ‘dig,’ OHG telpan ‘dig,’ Lith dálba ‘crowbar (“digging tool”),
SCr dūbėm ‘hollow out,’ dūbok ‘deep,’ Czech dlubu ‘hollow out, poke.’ —Mallory
and Adams (2006) 376; LIV *d\textsuperscript{h}elb\textsuperscript{h}- 143; IEW *dhelbh- 246; Bomhard 147; EIEC 159.

3. *d\textsuperscript{h}emb\textsuperscript{h}-  ‘Grave, tomb, funeral; to be buried, be interred’

Arm damban ‘grave, tomb,’ dambaran ‘grave, vault, tomb,’ Grk θαπτω ‘to be
buried, interred,’ τάφος ‘burial, funeral, grave, tomb, grave mound,’ τάφρος
‘ditch, trench.’ —LIV 2.*d\textsuperscript{h}emb\textsuperscript{h}- 143; IEW *dhembh- 248-49; L&S 784, 1761;
Bomhard 165.

4. *(s)d\textsuperscript{h}erb\textsuperscript{h}-  ‘To be in peril, spoil, rot, perish, die’

OE deorfan ‘be in peril, perish,’ OHG sterban ‘to die,’ Russ stërbnut ‘gradually die,
wither away, CSlav u-strobe ‘be old, mature.’ Modern Ger verderben ‘spoil, rot,
perish.’ —LIV *(s)d\textsuperscript{h}erb\textsuperscript{h}- 512; IEW *(s)terbh- 1024-25; Bosworth and Toller 202;
Kluge 813.

Notes on possible outside root connections:
2. Bomhard 147 cites Afrasian *dalaa\textsuperscript{ʕ}-, etc. ‘gash, notch, shoot with arrow,’ Dravidian tallu, etc. ‘beat,
crush, blow, stroke, hit the mark,’ Proto-Altaic *delp\textsuperscript{i}-, etc. ‘split, burst, crack open, break, crack, explode,
cleft, crevice, fissure, hole,’ and Proto-Chuk-Kamch *tala-, etc. ‘beat, pulverize, hit, pound, hammer,
strike, crush.’ PIE is the only language-family cited that refers specifically to digging.
3. Bomhard 165 cites Proto-Afrasian *dim-, etc. ‘raised, elevated place, tower, fortified area, district, town,
vicinity, village,’ and Dravidian dimmi, etc. ‘elevated spot, rising ground, hillock, bank of river, mound.’
Neither shows final consonant nor associations to burial sites or funeral rites.

**Conclusions:** Semantically and phonetically divergent with low probability of outside genetic
connections.

Table 15: *d\textsuperscript{e}(R)-  ‘Valley, depression in the earth, animal den’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*d\textsuperscript{e}l-</td>
<td>d\textsuperscript{h}</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
<td>Valley, hole, pit, depression, animal den, bedroom</td>
</tr>
</tbody>
</table>
1. *dʰe₁l-
   ‘Valley, pit, depression, animal den’


2. *dʰen-
   ‘Hollow place in the earth, animal den, valley, hole, bed’

Skt dhánuṣ ‘dry land,’ Grk θέναρ ‘palm of the hand, hollow at top of altar, hollow bed of the sea,’ OHG tenni ‘house floor, ground,’ denn ‘animal den,’ MNG denne ‘depression, woodland valley,’ MNether denne ‘den of wild animal,’ OE denn ‘hole, animal den,’ EFris dann(e) ‘bed, garden bed.’ —IEW 249; L&S 780.

3. *dʰeu-
   (with extensions -b, -p) ‘Deep, depression, pit, valley, dip, dimple’


Some commentators have analyzed this root as *dʰeub-, but this assumes the use of the rare PIE *b- as an integral part of the root. Others have suggested that it may be a substrate term borrowed from a non-Indo-European language. But, given the strong parallels to other members of this resonant series, the solution accepted by Pokorny (seeing the *b- and *p- as root extensions) may be the most reasonable conclusion.

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Table 16: \(^{*}d^{h}e(R)\tilde{g}^{h}\) — ‘Earth, earth works, and earth workers’

This group of roots denotes the earth; working the earth by kneading, shaping and building; the products of earth-works such as walls, enclosures, walled gardens and yards; and men who are employed in working the earth. These men would be “workers of earth” or “earth men.” Farmers were similarly regarded, as paralleled in Greek \(\gamma\varepsilon\omega\gamma\varepsilon\omega\) ‘to be a husbandman, farmer’ (modern name George, literally ‘earth worker’).

<table>
<thead>
<tr>
<th>PIE Root</th>
<th></th>
<th></th>
<th></th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(^{*}d^{h}e\tilde{g}^{h}-om)-</td>
<td>(d^{h})</td>
<td>(\emptyset)</td>
<td>(\tilde{g}^{h})</td>
<td>1</td>
<td>Earth, ground, land, man (as earth worker), human being, dragon</td>
</tr>
<tr>
<td>(^{<em>}d^{h}e\tilde{g}^{h},) (^{</em>}d^{h}e\tilde{g}^{h}s)</td>
<td>(d^{h})</td>
<td>(i)</td>
<td>(\tilde{g}^{h})</td>
<td>2</td>
<td>Work clay, fashion, stroke, knead (clay, mud, dough), build, build wall; wall, earthen wall</td>
</tr>
<tr>
<td>(^{*}dhe\tilde{g}^{h}-)</td>
<td>(d^{h})</td>
<td>(r)</td>
<td>(\tilde{g}^{h})</td>
<td>3</td>
<td>Make firm, strong, tough, tenacious, enclosure, garden, yard</td>
</tr>
<tr>
<td>(^{*}dhe\tilde{g}^{h}-)</td>
<td>(d^{h})</td>
<td>(\emptyset)</td>
<td>(\tilde{g}^{h})</td>
<td>4</td>
<td>Make, build, produce something useful, knead, fit into place, strong; common or vulgar men</td>
</tr>
</tbody>
</table>

1. \(^{*}d^{h}e\tilde{g}^{h}-\) — ‘Earth, ground, man’

Hit \(\tilde{t}e\kappa\)\text{\(\tilde{a}\)n} ‘earth, ground,’ Ved \(k\tilde{s}\acute{a}\m) ‘earth, ground,’ Grk \(X\theta\acute{a}ν\) ‘earth, ground, land,’ Lat \(h\text{\(\acute{u}\)mus}, \text{\(h\)omo} ‘earth, human being,’ OE \(g\text{\(\acute{u}\)ma}\ ‘man, (bride)groom,’ TochA \(\text{\(t\)k\(\acute{a}\)m} ‘earth, ground,’ OCS \(z\text{\(m\)i}i\) ‘dragon, snake.’ — IEW 414-16; EIEC 174; NIL 86; Mallory & Adams (2006) 120; Watkins (2011) 20; DELG 143; Ringe 19; Bomhard 145; EIEC 247-48.

References to ‘man’ in this root probably reflect, not man in general, but rather man as ‘earth worker, commoner, vassal, slave.’ Even modern English retains this characterization. The definition of dirt, given by AHD, is: “1. Earth or soil. 2a. A filthy or soiling substance, such as mud or dust. b. Excrement. 3. A squalid or filthy condition. 4. One that is mean, contemptible, or vile...” (emphasis added). In some cultures, later
semantic development elevated the “dirt man” to a more respectable social status. See also #4 below.

2. *dheį̄gh-, *dheį̄gs- ‘Form, build, mold mud or clay, knead, smear, plaster; bank, wall of mud or mud bricks

Skt déhmi ‘spread, fill,’ déhī ‘wall, rampart, dam,’ Goth digan ‘form, fashion, knead, make pottery,’ ON deig ‘dough’, digr ‘thick,’ NE dough, Lith žiedžiū ‘form from mud,’ TochB tsikale ‘to form,’ Lat fingō, finxī ‘form, shape,’ figūra ‘form, shape, figure,’ fitilis ‘fashion out of clay, made of earth or clay,’ figulus ‘potter,’ Av pairi-daēza- ‘enclosure’ (> NE paradise); Grk τεῖχος, τοῖχος ‘wall, embankment,’ possibly Grk θυγγάνω ‘touch with the hand,’ OIr digen ‘build, firm, solid, hard, strong, fixed.’ — LIV 140; IEW 244; NIL 118; de Vries 194; Mallory & Adams (2006) 223, 224, 228; Watkins (2011) 18; EIEC 649; Bomhard 166.

Mallory and Adams write, “The underlying semantics of *dheį̄gh indicate that it was specifically associated with the working of clay (e.g. Lat fingō ‘fashion,’ Skt déhmi ‘smear, anoint,’ Toch AB tsik- ‘fashion [pots, etc.],’ hence the English cognate dough; in Greek and Indo-Iranian it is also associated with building walls, e.g. Av pairi-daēza ‘build a wall around’ ... but there are also cognates of more general meaning, e.g. OIr con-utainc ‘builds,’ Lith diežti ‘whip, beat,’ Arm dizanem ‘heap up’” (2006:223-4, 371).

And: “The substance from which the walls were made, [earth] came to be applied both to the finished product, e.g., Grk τοῖχος ‘wall’, Av uz-daēza- ‘wall’, and clay-like substances, e.g. Germanic dough” (EIEC 629).

3. *dherg̑h-, *dherg̑h- ‘Become hard, strong, firm; garden, yard, enclosure’


4. *dheų̄g̑n- ‘Make, build, make ready, prepare, produce something useful, suitable, fit, touch, knead, big, strong; common or vulgar men’
Grk τεύχω ‘make, prepare, build, produce by work or art, form, create, well made, of fields: tilled,’ Grk τυγχάνω, ἐτυχόν ‘gain one’s end or purpose, succeed, attain, obtain a thing, of men: common, everyday, vulgar’ (compare *dʰegʰ-om above), Goth daug ‘be useful,’ OIr diál ‘suitable, fit,’ NIr dual (< dʰugʱ-lo-) ‘right, proper, natural,’ ON duga ‘to suit,’ NHG taugen ‘to be useful or fit,’ Slav *dugʰ ‘strength,’ Pol duży ‘strong, big,’ Ved duhē ‘give milk.’ —LIV 148; IEW 271; Mallory & Adams (2006) 370; L&S 1783, 1882.

The process of building with earth requires the addition of water, then a vigorous kneading of the clay or mud. The men employed in the construction process are considered common and vulgar, predominantly slaves. The kneading, squeezing movement of the hands as it prepares the mud for building gives rise to the secondary meaning of milking an animal because it involves a similar kneading motion to coax the milk from the animal’s udder.

Notes on possible outside root connections:
1. Bomhard 145 cites Proto-Afrasian *d[a]g- ‘put in place, be stable, be firmly established, remain, abide, become tame, plant, build, join, attach,’ Proto-Dravidian *taṅk-, etc. ‘be put in place, be stable, be firmly established, stay abide, remain, stop, rest, delay, stability, be permanent,’ Proto-Kartvelian *deg-, etc. ‘to stand, put, place, set,’ and Uralic *taɣ-, etc. ‘place, site, region country, land.’
2. Bomhard 166 cites Proto-Afrasian *dik- etc. ‘beat, crush, pound, tamp earth, mold or knead clay, mix, flatten, smooth, level, ruin, tread, clay or loam, dust,’ Dravidian tig- ‘press down hard, push,’ and Proto-Kartvelian *diq-, etc. ‘earth, clay, mud, soil, ground.’

Conclusions: Both PIE roots appear to have phonetic and semantic parallels with outside language groups, suggesting that they differentiated into the separate resonant-variants while still in linguistic contact with those groups.

Table 17: *dʰe(R)h₂- ‘Run, move rapidly, shake, run away/vanish (euph. for death)’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*dʰenH₂-</td>
<td>dʰ</td>
<td>n</td>
<td>h₂</td>
<td></td>
<td>1</td>
<td>Run, flow, move quickly, run away or vanish (as euphemism for death)</td>
</tr>
<tr>
<td>*dʰeyH-</td>
<td>dʰ</td>
<td>y</td>
<td>H</td>
<td></td>
<td>2</td>
<td>Run, run away, flow, flee, shake, move violently, rage, vex</td>
</tr>
</tbody>
</table>
1. *dʰen₂- ‘Run, flow, move, run away or vanish (as euphemism for death)’

Ved dhánvati ‘run, flow,’ dadhanváṁś ‘cause to run or move quickly,’ dhanáyan ‘cause to run,’ pra-dhanvati ‘vanish, disappear, perish, die,’ NPers dan ‘hurry, run,’ Grk θνῄσκω ‘to die, be dead’ (run away, vanish — as euphemism for death). — LIV 144;IEW 249; Monier-Williams 508-09; L&S 802; DELG 406; Bomhard 178.

2. *dʰeyH- ‘Run, run away, flow, flee, shake, move violently, rage, vex’

Ved dhāvati ‘run, flow, stream, move, run after, run away, flee, cause to run,’ Ved dhūnóti ‘shake, agitate, cause to tremble, shake or move violently,’ ni-dhuvati ‘throw down, shake to and fro, agitate, sexual intercourse,’ Grk θύω [ὑ] ‘rage, seethe,’ Goth af-dojan ‘tire out, vex, harass,’ OCS davljo ‘urge, press forward.’ — LIV 149; IEW 261-63; Monier-Williams 516-17 (1. dhāv), 549; L&S 813; Balg 72; Bomhard 249.

Notes on possible outside root connections:
1. Bomhard 178 cites Afrasian *dun-, etc. ‘leak water, pour,’ Dravidian tundnā, etc. ‘be poured out, spill, shed, throw out, be split, be shed,’ and Proto-Kartvelian *dn-, etc. ‘run, flow, melt, disappear, get lost.’
2. Bomhard 249 cites Proto-Kartvelian *ǯgw-, etc. ‘defecate.’

Conclusions: The semantic divergence between the PIE and the other language families does not strongly support the notion of genetic connections.

Table 18: *dʰ(R)eH₂- ‘Exhalations, vapors, breath, blow on a fire, steam, smoke’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*dʰmeH-</td>
<td>dʰ</td>
<td>m</td>
<td></td>
<td>H</td>
<td>1</td>
<td>Blow, blow away, breathe, exhale, kindle a fire by blowing</td>
</tr>
<tr>
<td>*dʰyeH-</td>
<td>dʰ</td>
<td>ŋ</td>
<td>h₂</td>
<td></td>
<td>2</td>
<td>Blow, exhale fragrance, burn an aromatic substance or sacrifice</td>
</tr>
<tr>
<td>*dʰyenH-</td>
<td>dʰ</td>
<td>ŋ</td>
<td>n</td>
<td>H</td>
<td>3</td>
<td>To steam, to smoke, fly up, cause to steam or smoke, cloud</td>
</tr>
</tbody>
</table>

1. *dʰmeH- ‘Blow, blow away, breathe, exhale’
HAYNES — RESONANT VARIATION IN PROTO-INDO-EUROPEAN

Ved dhámati ‘blow, breathe out, exhale, kindle a fire by blowing,’ Khot damāte ‘blow,’ Lith dumiu ‘breathe, blow, blow away,’ OCS dŭmq ‘blow.’ — LIV 153; IEW 247-48; Monier-Williams 509.

2. *dʰųeh₂- ‘Blow, exhale fragrance, burn an aromatic substance or sacrifice’

CSlav dujо ‘blow,’ Slov dijem ‘exhale fragrance, be fragrant, smell sweet,’ Lat suf-fiō ‘subject to aromatic fumes, fumigate, burn an aromatic substance as a fumigant,’ Grk θύω ‘offer sacrifice by burning.’ — LIV 158; IEW 262-63; OLD 1861.

3. *dʰHenH- ‘To steam, to smoke, fly up, cause to steam or smoke, cloud’

Ved ādhvaniit ‘to steam, to smoke,’ YAv duuqaiti ‘fly, rush, dash,’ ādhvānayat (caus.) ‘cause to smoke, to steam,’ Av dvāṇman- ‘cloud.’ — LIV 159; IEW 266.

Table 19: *(s)dʰe(R)- ‘Put, place, set, stand, fix in place, be firm, be immobile’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*dʰeh₁-</td>
<td>dʰ</td>
<td>h₁</td>
<td></td>
<td></td>
<td>1</td>
<td>Put, place, set, do, build, found, establish, lay, set up</td>
</tr>
<tr>
<td>*dʰeh₁-k-</td>
<td>dʰ</td>
<td>h₁</td>
<td></td>
<td></td>
<td>2</td>
<td>Place, set up, establish, raise, produce, make</td>
</tr>
<tr>
<td>*steh₂-</td>
<td>*(s)dʰ</td>
<td>h₂</td>
<td></td>
<td></td>
<td>3</td>
<td>Put, place, set, stand, set in, fix, set up, set firmly</td>
</tr>
<tr>
<td>*(s)dh₁eṣ-</td>
<td>*(s)dʰ</td>
<td>h₁</td>
<td>j</td>
<td></td>
<td>4</td>
<td>Not easily moved, stiff, fixed, hard, heavy, coagulated, frozen</td>
</tr>
<tr>
<td>*(s)dh₂-j-</td>
<td>*(s)dʰ</td>
<td>h₂</td>
<td></td>
<td></td>
<td>5</td>
<td>Fixed in place, standing firmly, post, staff, stone, pillar, column</td>
</tr>
<tr>
<td>*(s)dh₂-ur</td>
<td>*(s)dʰ</td>
<td>h₂</td>
<td></td>
<td></td>
<td>6</td>
<td>Fixed, immovable, permanent, pillar, post, column, cross</td>
</tr>
<tr>
<td>*(s)dh₂-tis</td>
<td>*(s)dʰ</td>
<td>h₂</td>
<td></td>
<td></td>
<td>7</td>
<td>Place, position, station, site, land, standing, setting, stature</td>
</tr>
<tr>
<td>*(s)dh₂-món</td>
<td>*(s)dʰ</td>
<td>h₂</td>
<td></td>
<td></td>
<td>8</td>
<td>Set down, stand, position, stem, tree, warp (part of weaving)</td>
</tr>
<tr>
<td>Stem (Proto-Indo-European)</td>
<td>Proto-Indo-European</td>
<td>Transliteration</td>
<td>IE Group</td>
<td>Meaning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------------</td>
<td>--------------------</td>
<td>----------------</td>
<td>----------</td>
<td>---------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*stl(h2)ey-g-</td>
<td>(s)d^h</td>
<td></td>
<td>9</td>
<td>To stand, be stiff</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*stl(h2)ey-g-</td>
<td>(s)d^h</td>
<td></td>
<td>10</td>
<td>Stiff, hard, become stiff, stone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*stl(h2)ey-g-</td>
<td>(s)d^h</td>
<td></td>
<td>11</td>
<td>Put, place, standing position, stall, set up, establish, stand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*stl(h2)ey-g-</td>
<td>(s)d^h</td>
<td></td>
<td>12</td>
<td>Firm support, pillar, stand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*stl(h2)ey-g-</td>
<td>(s)d^h</td>
<td></td>
<td>13</td>
<td>To stand, be firm, be imperturbable, set, produce a stalk, support, post</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*stl(h2)ey-g-</td>
<td>(s)d^h</td>
<td></td>
<td>14</td>
<td>To be solid, firm, immobile, seated, quiet, stopped, hold fast</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*stl(h2)ey-g-</td>
<td>(s)d^h</td>
<td></td>
<td>15</td>
<td>Lay down, place loose material for making a bed, paving a road, strew</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*stl(h2)ey-g-</td>
<td>(s)d^h</td>
<td></td>
<td>16</td>
<td>Material placed on the ground or floor for sleeping, straw, bed, couch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*stl(h2)ey-g-</td>
<td>(s)d^h</td>
<td></td>
<td>17</td>
<td>Stiff, firm, hard, tight, stare (a fixed, unmoving look)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*stl(h2)ey-g-</td>
<td>(s)d^h</td>
<td></td>
<td>18</td>
<td>Set in position, construct, stand fast, build, establish, stack up, strew</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. *d^heh₁- ‘Put, place, set, do, build, found, establish, lay, set up’


2. *d^heh₁-k- ‘Place, set up, establish, raise, produce, make’

OUmb face ‘place, set up, establish, raise, produce, make,’ Lat faciō ‘make,’ Ven faksto ‘set up, place, establish,’ Osc fefacid ‘make.’ — LIV 139; IEW 236; Bomhard 158.

3. *(s)teh₂- ‘Put, place, set, stand, set in, fix, set up, set firmly’

4. *sth₂-i- ‘Not easily moved, stiff, fixed, hard, heavy, coagulated, frozen’
Lat stīriā ‘icicle,’ Fris stīr ‘stiff,’ Lith stóras ‘stiff,’ Skt styāyate ‘becomes fixed, coagulated, hardens,’ stīyā ‘stagnant water,’ stīmā ‘heavy,’ stimita ‘unmoving, fixed, silent,’ TochB stīnāsk- ‘be silent.’ An extension of *steh₂-. —IEW 547; IEW 1010-11; Mallory and Adams (2006) 347.

5. *sth₂-bʰ- ‘Fixed in place, standing firmly, post, staff, stone, pillar, column’
MIr sab (< *sth₂bʰeh₂-) ‘post,’ ON stafr ‘staff,’ OE stæf ‘staff,’ NE staff, OHG stap ‘staff,’ OPrus stabis ‘stone,’ Lith stābas ‘post,’ Latv stabs ‘pillar,’ OCS stoborū ‘column.’ “A nominalization of *steh₂-. (EIEC:442)” —IEW 1012-13; Mallory and Adams (2006) 226; EIEC 442.

6. *stéh₂-yṛ ‘Fixed, immovable, permanent, pillar, post, column, cross’

7. *stéh₂-tīṣ ‘Place, position, station, site, land, standing, setting, stature’

8. *stēh₂-mōn ‘Set down, stand, position, stature, stem, tree, warp (the stationary part of the weaving)’

9. *st(h)eu̯-g- ‘To stand, be stiff’

Lith stūkti ‘stand tall,’ Rus stūgnutī ‘to freeze’ (< ‘become stiff’), Toch B staukк- ‘swell, bloat.’ An extension of *steh-. —EIEC 547; IEW 1033-34; Mallory and Adams (2006) 347.

10. *stieH- ‘Stiff, hard, become stiff, stone’

Ved ni-ṣṭyāyatām ‘to become stiff,’ Grk σωμα ‘(stiff, dead) body,’ Germ *staina- ‘stone.’ —LIV 603; IEW 1010-11.

11. *stel- ‘Put, place, standing position, stall, set up, establish, stand’

ON stjöl ‘stem, stalk,’ stallr ‘stall,’ OE stela ‘stalk, support,’ stell ‘standing place, position, stall, stable,’ stellan ‘put, place,’ OHG stal ‘standing place position, stall,’ stellen ‘set up, establish,’ NE stall, OPrus stallit ‘stand,’ Alb stjell ‘fling, toss, hurl,’ Grk στελα ‘make ready, fit out with, send, dispatch,’ Skt sthālam ‘eminence, tableland, ground, earth, dry land,’ OLat stlocus ‘place.’ —EIEC 442, 506; IEW 1019-20; LIV 594.

12. *stl-neh2- ‘Firm support, pillar, stand’

OHG stollo support,’ Grk στήλη ‘pillar,’ ON stallr ‘stand.’ —EIEC 442; IEW 1050.

13. *stembh- ‘To stand, be firm, be imperturbable, set, produce a stalk, support, post’

Lith stembti ‘produce a stalk’ (of plants), Grk ἀστέμφης ‘imperturbable, firm,’ Av stambana ‘support,’ Skt stabhna ‘prop, support, hinder, restrain,’ stāṃbha ‘post,’ TochAB stām ‘stand,’ TochB šanmāṣṣām ‘to set firmly.’ —EIEC 543; IEW 1012-13; LIV 595; Mallory and Adams (2006) 296.
14. *dêr- ‘To be solid, firm, immobile, motionless, seated, quiet, stopped, hold fast’

Lat firmus (< *dêr-mo-) ‘solid, firm,’ OE darian ‘lie motionless, lurk,’ Lith derėtí ‘be useful, serviceable,’ Grk θρησκευόμενον ‘seat oneself,’ Arm dadarem ‘become quiet, stop, be immobile,’ Av dārayat ‘holds fast, hold firm,’ Skt dhārāyati ‘holds, preserves.’ —LIV 145; IEW 252-53; EIEC 270; Mallory and Adams (2006) 271; Bomhard 248.

15. *ster-h₃- ‘Lay down, place loose material for making a bed or paving a road, strew, spread out, place a saddle on a horse’


16. *ster(h₃)m̥ ‘Material placed on the ground or floor for sleeping, straw, bed, couch, something strewn’


17. *(s)ter-h₁- ‘Stiff, firm, hard, tight, stare (a fixed look)’


18. *strew- ‘Set in position, construct, stand fast, put together, build, establish, stack up, heap, strew’

Lat strūō ‘set in position, arrange so as to construct something, stand fast, put in position, put together, build, establish, set, set out in place,’ struēs ‘heap,’ Olr
asroither ‘strew,’ Goth straujan ‘strew.’ — LIV 605; IEW 1030-31; EIEC 539; Mallory and Adams (2006); OLD 1829-30.

Notes on possible outside root connections:
14. Bomhard 248 cites Proto-Afrasian *di-ar-, etc. ‘hold firmly, hand, arm,’ Proto-Kartvelian *ʒger- ‘to make firm, strong, unshakable.’
15. Bomhard 194 cites Proto-Afrasian *′ar- ‘to spread, spread out, expand, extend, stretch, stretch out,’ Dravidian tārru, etc. ‘sift, winnow, sow seed, scatter, sprinkle,’ Uralic *tara-, etc. ‘spread or stretch out, separate, open, scatter, wide, roomy,’ Proto-Altaic tʰarV-, etc. ‘spread, scatter, disperse,’ Proto-Eskimo *tarpak- ‘open out, flare out, enlarge, open wide.’

**Conclusions:** All four of these PIE roots show strong parallelism, both phonetically and semantically to the non-PIE forms. This suggests that the laryngeal and the -r resonant variants diverged from the primitive root while PIE was still in linguistic contact with the outside language groups.

\[ *\hat{g} \]

**Table 20:** *ge(R)b̅h- ‘Bite, chew, eat’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*geb̅h-</td>
<td>ʰg̑</td>
<td>ø</td>
<td>b̅</td>
<td></td>
<td>1</td>
<td>Eat, chew, masticate, consume, feed, forage, nourishment</td>
</tr>
<tr>
<td>*gemb̅h-</td>
<td>ʰg̑</td>
<td>m</td>
<td>b̅</td>
<td></td>
<td>2</td>
<td>Open the jaws wide, snap at, swallow, bite, tear to pieces</td>
</tr>
</tbody>
</table>

1. *geb̅h- ‘Eat, chew, masticate, consume, feed’

OLith žēbmi ‘eat slowly, chew, masticate,’ OCS zobljo ‘consume, eat up,’ ORus zobv ‘food, fodder, feed, forage, nourishment, nutriment,’ zob ‘beak, snout.’ — LIV 161; IEW 382; Bomhard 570.

2. *gemb̅h- ‘Open the jaws wide, snap at, swallow, bite, tear to pieces’
Ved jambháyati ‘crush, destroy,’ jabhat ‘open the jaws wide, snap at,’ jāmbha ‘tooth, set of teeth, mouth, jaws, swallowing, one who crushes or swallows,’ YAv zambaiiaðbom ‘let one bite hard,’ Oss xæmb ‘yawn, gape,’ OCS zöbo ‘rip or tear to pieces,’ Alb dhemb ‘pain, hurt, distress, grieve.’ —LIV 162; IEW 369; Monier-Williams 412; Bomhard 573.

Notes on possible outside root connections:
1. Bomhard 570 cites Dravid kavuḷ, etc. ‘cheek, jaw, jawbone,’ and Proto-Kartvelian *q’ab-, etc. ‘jaw, chin.’
2. Bomhard 573 cites Proto-Afrasian *k’am-, etc. ‘crush, grind, chew, bite, eat, flour, wheat, meal, grain, graze, devour, swallow, bread, molar tooth, tooth in general,’ and Chuk-Kamch *qametva-, etc. ‘eat, feed, give food to a guest, treat,’ both with either missing or variant (non-labial) final consonant.

Conclusions: Both roots show semantic parallels to the outside language groups, but lack of final labial consonant in those groups leaves the connection doubtful.

**Table 21:** *g̑e(R)h₁− ‘Engender, impel, set in motion, sprout, germinate, be born’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*g̑eųH-</td>
<td>ʷg̑</td>
<td>ʰu</td>
<td>H</td>
<td>1</td>
<td>Set in motion, rouse, impel, be quick, animate, inspire</td>
<td></td>
</tr>
<tr>
<td>*g̑eįH-</td>
<td>ʷg̑</td>
<td>i</td>
<td>H</td>
<td>2</td>
<td>Germinate, spring up, grow, sprout, develop</td>
<td></td>
</tr>
<tr>
<td>*g̑enh₁-</td>
<td>ʷg̑</td>
<td>n</td>
<td>h₁</td>
<td>3</td>
<td>Beget, conceive, create, bring forth, cause the growth of, be born</td>
<td></td>
</tr>
</tbody>
</table>

1. *g̑eųH- ‘Set in motion, rouse, impel, be quick, animate, inspire’

Ved junāṭi, jávati ‘press forwards, hurry on, be quick, impel, urge, rouse, drive, incite, excite, promote, animate, inspire,’ aṜį-jú ‘impelling,’ dhį-jů ‘inspiring the mind, rousing devotion,’ yatů-jů ‘incited or possessed by a yatů,’ vayo-jů ‘exciting or increasing strength,’ viśva-jů ‘all-impelling,’ sānā-jů ‘nimble or active from of old.’ —LIV 166; IEW 399; Monier-Williams 424.

The basic sense of this root is to set something into brisk motion, impel, animate. In the following roots of this resonant series, this notion is applied specifically to living beings,
setting the development of plants or animals into motion. For the relationship between “quick” and “life,” consider the range of meanings contained within the English word, quick: “1. Moving or functioning rapidly and energetically; speedy. ...6. Archaic a. Alive. b. Pregnant.”

2. *geberH- ‘Germinate, spring up, grow, sprout, develop’

Goth keinan ‘germinate, spring up, grow,’ Latv ziêdu ‘blossom,’ NArm cil ‘bud, sprout, shoot, scion,’ OHG, OSax kênan ‘germinate, sprout, arise, spring up, develop.’ —LIV 161; IEW 355-56; Balg 217; ALEW 1507.

3. *genh₁- ‘Beget, conceive, create, bring forth, cause the growth of, be born’

Lat gignō ‘bring into being, create living creatures, cause the birth of or growth of, give rise to, produce,’ gignentia ‘growing things, vegetation, things coming into being,’ OE cennan ‘beget, conceive, create, bring forth,’ Ved jānati ‘generate, beget, produce, create, cause, be born or produced,’ Grk γίγνομαι ‘to become.’ —LIV 163; IEW 373-75; OLD 764; Bosworth and Toller 150; Monier-Williams 410; Bomhard 465; EIEC 56.

In PIE, the semantic field “child” can overlap with the semantic field “seed, sprout.” Mallory and Adams (EIEC 107) write: “One originally neuter term, derived from the root *tek- ‘beget’ (Grk τικτω < τι-τκ-ω), is preserved as ‘child’ in Greek and matches Germanic terms for ‘servant’ which is semantically upgraded in many areas to mean ‘servant of the king’ > ‘nobleman’ (cf. thane in Macbeth). Indo-Iranian cognates suggest an original meaning ‘seed, sprout,’ a meaning also recorded in Greek.”

Notes on possible outside root connections:
3. Bomhard 465 cites Proto-Afrasian *k’an-, etc. ‘get acquire, possess, create, produce, buy, dominate, tame, have power over, to originate,’ and Dravidian kāṇṟu, etc. ‘calf, colt, sapling, young tree, young child, bear or bring forth children, beget, young animal or plant.’

**Conclusions:** Phonetically and semantically root #3 appears to parallel the Afrasian and Dravidian attested forms.

8 AHD, s.v. “quick,” 1436.
*\( \hat{g}^{h} \) -

| Table 22: *\( \hat{g}^{h} \) \( e(R)d \)- ‘Defecate, evacuate, pour out, emit, rump, hole, opening’ |
|------------------|-----------------|---------|---------|---|---------------------------------|
| PIE Root         | Initial         | R1      | R2      | Final | Ref | Semantic Value |
| \( *\hat{g}^{h}d- \) | \( \hat{g}^{h} \) | \( \varnothing \) | d       | 1    | Defecate, be covered in excrement, rump, anus, hole, excretion |
| \( *\hat{g}^{h}yd- \) | \( \hat{g}^{h} \) | \( \emptyset \) | d       | 2    | Pour, spill, to empty, to emit from the body, large intestine, hole, vulgar |

1. \( *\hat{g}^{h}d- \) — ‘Defecate, be covered in excrement, rump, anus, hole, excretion’

Grk \( \chi\acute{e}\zeta\omega \) ‘Defecate, ease oneself, drop dung,’ Alb \( dh\jes \) ‘I defecate,’ Alb \( n\cdot dot \) ‘dirty oneself, be covered in excrement,’ Skt \( hadati \) ‘defecate, \( hadana \) ‘excretion,’ Av \( zadah \) ‘arse,’ Arm \( jet \) ‘the tail, the end,’ ON \( g\at \) ‘hole, opening.’ — LIV 172; IEW 423; L&S 1982; EIEC 187.

2. \( *\hat{g}^{h}yd- \) — ‘Pour, spill, empty, emit from the body, large intestine, vulgar’

ON \( gj\ota \) ‘throw’ (young), NIsl \( gj\ota \) ‘hole,’ Lat \( fund\overset{\circ}{o} \) ‘pour, spill, empty (a vessel or container), drench with, emit freely from the body, pour out, shed (blood, tears, etc.), (of a woman) to give birth,’ \( fundulum \) ‘the blind gut’ (part of the large intestine), Umb \( hon\overset{\circ}{d}u \) ‘shall pour/spill out,’ Goth \( gi\overset{\circ}{u}tan \) ‘pour out, shed, spill,’ Grk \( \chi\upsilon\partial\eta\nu \) ‘poured out in floods or heaps, promiscuously, indiscriminately,’ \( \chi\nu\delta\alpha\overset{\circ}{i}\omega \) ‘poured out in streams, common, vulgar, coarse,’ \( \chi\nu\delta\alpha\omega \) ‘make vulgar, debase.’ — LIV 179; IEW 448; OLD 746-47; L&S 2012-13; EIEC 448.

| Table 23: \( *\hat{g}^{h}eht(R)\cdot os \)- ‘Gaping hole, gap, empty space’ |
|------------------|-----------------|---------|---------|---|---------------------------------|
| PIE Root         | Initial         | R1      | R2      | Final | Ref | Semantic Value |

41
1. *g̑eHu̯-os  ‘Gaping abyss, jaws, chasm, chaos’

Grk χάος ‘chaos, the nether abyss, any vast gulf or chasm, the gaping jaws of the crocodile,’ TochA ko ‘mouth,’ MHG giel ‘jaws, throat, mouth, yawning abyss, gullet,’ NHG Gosche, Gusche ‘enormous jaws.’ — Mallory and Adams (2006) 222; L&S 1976; IEW 449.

2. *g̑ohr-os  ‘Gap, empty space, hollow in the mouth’


Table 24: *g̑e(R)-  ‘Devour, swallow, gulp’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref.</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*g̑er-h3-</td>
<td>g̑r</td>
<td>r</td>
<td></td>
<td></td>
<td>1</td>
<td>Devour, swallow, gulp, throat</td>
</tr>
<tr>
<td>*g̑el-</td>
<td>g</td>
<td>y</td>
<td>l</td>
<td></td>
<td>2</td>
<td>Devour, swallow, gulp down</td>
</tr>
</tbody>
</table>

1. *g̑er-h3-  ‘Devour, swallow, gulp, throat’

OInd girāti ‘eat voraciously,’ Lat carnī-vorus ‘devouring meat,’ Avest jaraiti ‘swallow, gulp,’ Lith girtas ‘intoxicated, drunk,’ Arm eker ‘ate,’ Ved garan ‘gulp,’

2. *gu̯el- ‘Devour, swallow, gulp down’

Arm ekowol ‘swallowed, g(gulped,’ OIr gelid ‘consume, devour,’ OE ceole ‘gorge.’ — LIV 192; IEW 365; Bomhard 577.

Notes on possible outside root connections:
1. Bomhard 589 cites Afrasian ḵard, etc. ‘throat, voice,’ Dravidian kural, etc. ‘throat, windpipe, neck, gullet, eat greedily, drink, eat, guzzle,’ Proto-Kartvelian *q’orq’, etc. ‘throat, gullet, larynx,’ and Uralic *k[ü]rkz, etc. ‘neck, throat.’
2. Bomhard 577 cites Kartvelian *q’el-, etc. ‘neck, throat, collar.’

Conclusions: Both of these roots show credible parallels with non-PIE forms, suggesting that the separation of the two resonant-variants probably occurred while PIE was still in contact with the other language families.

Table 25: *(s)grebʰ- ‘To cut, scratch, engrave, cutting tool’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*(s)grebʰ-, *gerbʰ-</td>
<td>g</td>
<td>r</td>
<td>bʰ</td>
<td>1</td>
<td></td>
<td>Scratch in, cut in, engrave</td>
</tr>
<tr>
<td>*gleybʰ-</td>
<td>g</td>
<td>₁</td>
<td>y</td>
<td>bʰ</td>
<td>2</td>
<td>Hollow out, cut off</td>
</tr>
<tr>
<td>*gnejʰ-</td>
<td>g</td>
<td>n</td>
<td>bʰ</td>
<td>3</td>
<td></td>
<td>Knife</td>
</tr>
<tr>
<td>*(s)kebʰ- (&lt; *(s)gebʰ-)</td>
<td>(s)g</td>
<td>ø</td>
<td>bʰ</td>
<td>4</td>
<td></td>
<td>Scratch, shave, scrape</td>
</tr>
<tr>
<td>*(skrejʰ- (&lt; *(s)grejʰ-)</td>
<td>(s)g</td>
<td>r</td>
<td>bʰ</td>
<td>5</td>
<td></td>
<td>Scratch, cut, write, mark</td>
</tr>
</tbody>
</table>

1. *(s)grebʰ-, *gerbʰ- ‘Scratch in, cut in, engrave’


2. *gleybʰ- ‘Cut out, cut off’

Grk γλύφω ‘carve out, glyph,’ Lat glūbō ‘peel,’ OHG klioban ‘split,’ NE cleave. — Mallory and Adams (2006) 377; IEW 401; LIV 190; Bomhard 463; EIEC 143.

3. *gnejʰ- ‘Knife’
ON kneif ‘a type of knife-tongs,’ knifr ‘knife,’ OE cnīf ‘knife,’ NG dial. kneif ‘cobbler’s knife,’ Lith gnįbiu ‘pinch.’ —IEW 370.

AHD provides no PIE etymology for the English word “knife.” Watkins (2011) places it with an assortment of words (“a pseudo root” EIEC 451) denoting lumps or clumps such as knob, knoll, knot, knuckle, etc., which is not likely. Mallory and Adams write, “By the earliest historical attestations of the various IE stocks knives were made of bronze or iron; however, across Eurasia there were stone equivalents at least since the Neolithic. At that time long blades fashioned of flint or some other suitable stone were fixed within a wooden haft. Despite the weak lexical evidence it is impossible to imagine that the earliest IE speakers did not possess ‘knives’ of some sort, either stone or copper (EIEC 336).”

The following two roots show initial *sk- for expected original *sg-. But unvoiced *s- would be expected to de-voice the following *g-, so these roots should belong with the above forms in *g- or *(s)g-.

4. *skεbʰ- ‘Scratch, shave, scrape’

Lat scabō ‘shave, scratch, scrape,’ ON skafa ‘shave,’ OE scafan ‘shave’ (> NE shave), OHG schaben ‘shave,’ Goth skaban ‘shear,’ Lith skambūs ‘pluck,’ skabūs ‘sharp, skōbti ‘pull, pluck, gather,’ Latv skabīt ‘hew off,’ skabrs ‘sharp,’ OCS skoblĭ ‘scraping knife.’ —EIEC 503; IEW 931-33; LIV 549; NIL 621.

5. *skreibreʰ- ‘Scratch, cut, write, mark’

Lat scribō ‘write, mark, draw, sketch.’ —LIV 562; IEW 946-47.

Notes on possible outside root connections:
1. Bomhard 487 cites Proto-Afrasian *k’e(e)r-, etc. ‘cut, cut into, engrave, notch, sever, clip, split, pinch, nip, bite, wound,’ Proto-Kartvelian *k’r-eč-, etc. ‘cut, cut off,’ and Proto-Altaic *kiro-, etc. ‘cut, mince, break off, gnaw, scrape, shave, tear out, kill, destroy.’ All lack final labial.
2. Bomhard 463 cites Proto-Afrasian *k’al-, etc. ‘separate, remove, strip off, pluck, tear, pull off, uproot, cut off, open, peel,’ Dravidian kal, etc. ‘weed, pluck, pull up, remove, exterminate, strip off, dig, gather,’ and Proto-Kartvelian *k’al-, etc. ‘threshing place, threshing floor,’ all without final consonant.
Conclusions: Although there are many semantic parallels, the lack of final consonants in the outside languages makes any further conclusions doubtful concerning possible connections with the PIE roots.

*\( \text{g}^h \)-

Table 26: *\( \text{g}^h\text{e(R)d}^h \)-  ‘Desire, seek and choose a bride, pay the bride-price’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*( \text{g}^h\text{e}(R)d^h )-</td>
<td>( \text{g}^h )</td>
<td>( \text{o} )</td>
<td>( \text{d}^h )</td>
<td>1</td>
<td>Be pleasing, await, expect, form a union</td>
<td></td>
</tr>
<tr>
<td>*( \text{g}^h\text{e}(\text{id})d^h )-</td>
<td>( \text{g}^h )</td>
<td>( \text{i} )</td>
<td>( \text{d}^h )</td>
<td>2</td>
<td>Desire, wish for, wait for, expect</td>
<td></td>
</tr>
<tr>
<td>*( \text{g}^h\text{lendir}d^h )-</td>
<td>( \text{g}^h )</td>
<td>( \text{l} )</td>
<td>( \text{n} )</td>
<td>( \text{d}^h )</td>
<td>3</td>
<td>Desire, seek out, glance at, choose, select, fix on</td>
</tr>
<tr>
<td>*( \text{g}^h\text{re}(\text{id})d^h )-</td>
<td>( \text{g}^h )</td>
<td>( \text{r} )</td>
<td>( \text{i} )</td>
<td>( \text{d}^h )</td>
<td>4</td>
<td>Pursue, follow, come</td>
</tr>
<tr>
<td>*( \text{g}^h\text{eld}d^h )-</td>
<td>( \text{g}^h )</td>
<td>( \text{l} )</td>
<td>( \text{d}^h )</td>
<td>5</td>
<td>Requite, repay, recompense, pay for, atone for</td>
<td></td>
</tr>
</tbody>
</table>

1. *\( \text{g}^h\text{ed}^h \)-  ‘Be pleasing, await, expect, form a union’
MycGrk \( k^\text{e}k^\text{e}(\text{e})t^\text{w} \) ‘form a union, or alliance,’ Latv \( \text{gadu} \) ‘meet, encounter, expect, await, find,’ Fris \( \text{gadra} \) ‘unite,’ OHG \( \text{bigat}^\text{ön} \) ‘come together,’ OE \( \text{togæd}^\text{ere} \) ‘together,’ OCS \( u\text{-gožd}^\text{o} \) ‘be pleasing,’ \( \text{god}^\text{û} \) ‘appointed time,’ Ved \( \text{gàdhya}-h \) ‘clutch, embrace, sexual union.’ — LIV 195; IEW 423-24; Whitney 34 (‘attach’); Monier-Williams 344; Bomhard 377; EIEC 64.

2. *\( \text{g}^h\text{e}id^h \)-  ‘Desire, wish for, wait for, expect’
OPrus \( \text{gieidi} \) ‘waits for,’ \( \text{sengijdi} \) ‘desires,’ Lith \( \text{geidži}^\text{i} \) ‘wish for, desire,’ OCS \( \text{židq} \) ‘expect, wait for,’ Latv \( \text{gàidu} \) ‘wait for, expect.’ — LIV 196; IEW 426-27.

3. *\( \text{g}^h\text{lendir}d^h \)-  ‘Desire, seek out, glance at, choose, select, fix on’
OIr gleinn ‘inquire, investigate, explore, learn, choose, select, single out, fix on,’ Bret gou-lenn ‘desire,’ di-lenn ‘select, choose,’ Latv glendi ‘seek out,’ Rus gljažū ‘see, look at, glance at.’ —LIV 200; IEW 431; Bomhard 356.

4. *gʰreídʰ- ‘Pursue, follow, come’


5. *gʰeldʰ- ‘Requite, repay, recompense, pay for, atone for’

Goth -gildan ‘requite, repay, recompense,’ OCS žlédo ‘pay for, atone for,’ ORus želedu ‘pay for, atone for,’ ON galt ‘repaid, recompensed, requited,’ OHG in-gelten ‘punish.’ —LIV 197; IEW 436.

In PIE society, after seeking and choosing a marriage partner, it was necessary to pay the bride-price. Also, when social alliances are ruptured, the only way to re-enter the good graces of the other person is to atone for the wrong done by providing recompense to the injured party. In traditional tribal societies, brides are sometimes stolen from their parents, (most often with the consent of the woman). It is typically the custom, after a cooling-off period, to provide recompense to her father so as to avoid long-term family feuds.

Notes on possible outside root connections:

1. Bomhard 377 cites Proto-Afrasian *gid-, etc. ‘press together, join, unite, gather, force, compel,’ Dravidian kiṭṭu, etc. ‘draw near, be on friendly terms with, approach, meet, touch, reach,’ and Altaic gida-, etc. ‘press, crush, stamp, roll flat, compel, quell, defeat, raid, plunder.’

3. Bomhard 356 cites Proto-Afrasian *gal-, etc. ‘be visible, clear, obvious, evident, to look at, be shining, clarify, disclose’ (without final consonant), Dravidian gāḷaka, etc. ‘a good, proper, clever, ingenious man’ (without final dental consonant), Proto-Kartvelian *gal-, etc. ‘to know, be acquainted with, understand’ (without final consonant), and Proto-Altaic *galV, etc. ‘clear sky, sky, shine, glitter, good weather’ (also without final consonant).

4. Bomhard 384 cites Proto-Afrasian *gir-, etc. ‘move, hasten, run, flow, rush, happen, follow’ (without final consonant), Proto-Altaic *giarίa-, etc. ‘walk, step, rush, go or come out, walk through’ (without final consonant).
Conclusions: Root #1 shows credible phonetic and semantic parallels to the outside roots and is therefore probably distantly cognate. Roots #3 and #4 lack final consonants, leaving possible root connections uncertain.

Table 27: *g^h(R)e^b^h- ‘Grab, take, seize, hold’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*g^h^h^h^h^h^h-</td>
<td>g^h</td>
<td>ø</td>
<td>b^h</td>
<td>1</td>
<td>Grasp, seize, cause another to grasp (give)</td>
<td></td>
</tr>
<tr>
<td>*g^h^r^h^h^h^h^h-</td>
<td>g^h</td>
<td>r</td>
<td>b^h</td>
<td>2</td>
<td>Grab, seize, snatch up, devour, take</td>
<td></td>
</tr>
<tr>
<td>*g^r^i^b^h^h^h^h-</td>
<td>g^h</td>
<td>r</td>
<td>i</td>
<td>b^h</td>
<td>3</td>
<td>Grip, grasp, seize</td>
</tr>
</tbody>
</table>

1. *g^h^h^h^h^h^h^h- ‘Grasp, seize, cause another to grasp, i.e. give’

Lat habeō ‘grasp, possess, have,’ Umb habe ‘have,’ OIr gaibid ‘take, take hold of, seize, catch, grasp,’ Goth gabei ‘riches, wealth,’ giban ‘give,’ Lith gebū ‘to be capable’ (capable is literally the ability to catch, take, seize), Pol gabać ‘lay hands on, seize, hold,’ WRus habáć ‘take, grab.’ —LIV 193; IEW 407-09; EIEC 563; Mallory and Adams (2006) 271; Bomhard 349.

Words for give and take often interchange in PIE (Watkins 2011:xxvii).

2. *g^h^r^h^h^h^h^h^h- ‘Grab, seize, snatch up, devour, take’

Skt gr^h^h^h^h^nāti ‘grabs,’ MHG grabben ‘seize,’ Latv grebju ‘seize,’ OCS grabiti ‘snatch up,’ Hit k(a)r^h^p- ‘devour,’ Av g^r^h^r^nāti ‘takes,’ NE grab (from MDutch). — Mallory and Adams (2006) 271; Watkins (2011) 32; IEW 455-56; EIEC 563; LIV *g^h^r^h^h^h^h^h^h^h- 201.

3. *g^r^i^b^h^h^h^h^h^h- ‘Grip, grasp, seize’


Notes on possible outside root connections:
1. Bomhard 349 cites Afrasian *gaba-* etc. ‘hand, arm,’ Dravidian *kavar,* etc. ‘grasp, catch, steal, receive, desire, seize, plunder.’

**Conclusions:** Root #1 appears to have valid genetic connections with the other outside language families.

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**Table 28:** *gʷe(R)bʰ- ‘Womb, vulva, act of conception, embryo, young off-spring’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref.</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*gʷrebʰ-, *gʷerbʰ-</td>
<td>gʷ</td>
<td>r</td>
<td>bʰ</td>
<td>1</td>
<td>Fetus, embryo, child, new born babe, cub, nestling, foal</td>
<td></td>
</tr>
<tr>
<td>*gʷelbʰ-</td>
<td>gʷ</td>
<td>l</td>
<td>bʰ</td>
<td>2</td>
<td>Womb, uterus, menstruation, young child or animal, new born</td>
<td></td>
</tr>
<tr>
<td>*gʷembʰ-</td>
<td>gʷ</td>
<td>m</td>
<td>bʰ</td>
<td>3</td>
<td>Womb, vulva, slit, deeply excited, sexual intercourse, depth, to know carnally</td>
<td></td>
</tr>
<tr>
<td>*gʷēbʰ-</td>
<td>gʷ</td>
<td>j</td>
<td>bʰ</td>
<td>4</td>
<td>Dive, covet, seek, female pudenda, vibrate (Proposed root)</td>
<td></td>
</tr>
<tr>
<td>*gʷel₁bʰ- (*gʷēbʰ)</td>
<td>gʷ</td>
<td>h₁</td>
<td>bʰ</td>
<td>5</td>
<td>Something slimy, young animal, woman, wetness, vibrate, emit fluid or liquid</td>
<td></td>
</tr>
<tr>
<td>*gʷel₂bʰ- (*gʷābʰ)</td>
<td>gʷ</td>
<td>h₂</td>
<td>bʰ</td>
<td>6</td>
<td>Dive, plunge, dip, deep, become hard, dye with blood or other colorants</td>
<td></td>
</tr>
</tbody>
</table>

1. *gʷrebʰ-, *gʷerbʰ- ‘Fetus, embryo, child, foal’

Grk βρέφος ‘babe in the womb, fetus, new born babe, foal, whelp, cub, nestling,’ βρεφόω ‘form into a fetus, engender,’ OCS žrēbę (< *gʷerbʰen-’) ‘foal,’ Mir brommach ‘foal.’ — EIEC 615; IEW 485; L&S 329; Monier-Williams 349-50; DELG 186; Bomhard 539.

2. *gʷelbʰ- ‘Womb, uterus, young animal’

δελφίς ‘dolphin (fish with womb, i.e. mammal),’ and from *gʷolbho- ‘womb, fruit of womb,’ ON kalfr ‘calf,’ OE cealf ‘calf,’ NE calf, OHG chalb, chalp ‘calf,’ Goth kalbō ‘calf,’ Grk (Hesychius) δολφός ‘womb,’ Av gárbha- ‘uterus,’ Skt gárbha- ‘to conceive, womb, uterus, fetus, embryo, child, brood offspring, a woman’s courses.’ —EIEC 615; IEW 473; Watkins (2011) 34; L&S 377-78; DELG 250; de Vries 298; Mallory and Adams (2006) 184; Bomhard 462.

Mallory and Adams write, “The Germanic words suggest an initial *g-, the Grk *gʷ-. Indo-Iranian is indecisive. The pre-Greek *gʷ- (attested Grk d-) may owe its labialization to assimilation to the following *bhu-. Conversely the non-labialized initial in Germanic may be dissimilatory. In either case, *gʷelbhus would appear to have been at least the late PIE term for ‘womb’.”

3. *gʷemʰbʰ- ‘Womb, vulva, slit, deep down, sexual intercourse’

Skt gabhírá-, gambhírá- ‘deep,’ gambha-, gámßhan-, gambhára- ‘depth, slit, vulva,’ gambh-vepas ‘moved deeply or inwardly, deeply excited,’ gabhi-shákh ‘deeply down, down or within,’ jambh (also jabh) ‘to know carnally,’ Jambhana ‘sexual intercourse.’ —IEW 466; Monier-Williams 346, 348, 412, Mayrhofer gabhá 463.

Jan de Vries (674) places ON vǫmb ‘womb,’ with this root.

4. *gʷetbʰ- ‘Dive, covet, female pudenda, vibrate’ (Proposed root)

TochA kip ‘female pudenda,’ TochB kwīpe ‘female pudenda,’ Lat uibrō ‘vibrate,’ Grk δἰφ-άω ‘dive, covet, seek.’ —Watkins (2000) 2030; OLD 2054; Fortson 282-83, 402-3; AHD 1915; LIV 671; IEW 1132; DELG 275; Autenrieth 78; Fitzgerald 400; L&S 438; Adams, s.vv. “kwīpe, kwipe, onkipše.”

For the semantics of Grk δἰφ-άω ‘dive,’ compare *gʷetbʰ- below. AHD defines vibrate as: “1. To move back and forth or to and fro, especially rhythmically and rapidly. 2. To feel a quiver of emotion.” OLD defines uibrō as “1b. To cause parts of one’s body to move to and fro.” It then quotes examples of this word’s usage by classical authors in the context of explicit sexual movement.

Watkins (2000) postulated a root, *ghwībh, that included the Tocharian attestations listed here along with Germanic *wībam ‘woman, wife.’ That suggestion is not accepted here
(see discussion of the idea in Adams s.v. “kwipassorñe”), and in fact, it does not reappear later in Watkins (2011). PIE *gṷ- typically became k- in TochA, and kw- in TochB. PIE *bʰ- became p- in both TochA and TochB. The root that I propose here satisfies both of those equations, along with the attested resonant, i-.

Watkins is probably correct, however, in his interpretation of TochA kip ‘shame’ and TochB kwēpe ‘shame’ as denoting the female pudenda. The sexual organs are referred to as “shame” both in Latin pudenda, which derives from pudor ‘a feeling of shame,’ pudendus ‘shameful, disgraceful, scandalous, the genitals,’ and in German Scham ‘shame, modesty, chastity, genitals.’ Tocharian B makes this connection explicit in kwēpe-ike ‘penis’ (literally ‘shame-place’). It would not be unreasonable to assume that this designation applied equally (or originally?) to the female genitals, since that is the case in both the Latin and German examples already mentioned. It would, however, probably be a mistake to understand the original use of the word shame in this connection with the general use of that word in modern English where it suggests a feeling of self-recrimination or guilt for some evil committed. In ancient or more tribal societies, a better translation would be something like taboo. I follow Watkins in his gloss for Toch kip and kwēpe as ‘female pudenda.’

Watkins (2000, 2011) derives Eng vibrate (Lat uibrō) from the PIE root *yeip. LIV does not include Lat uibrō in its listing of verbs derived from *yeip, probably because of semantic differences and because PIE *p- would normally remain p- in Latin, and not become b- as in uibrō. The expected outcome of PIE *bʰ- is Latin b-, and PIE *gṷ- became simply u-, precisely as attested in Lat uibrō.

Grk διφάω ‘dive’ is a word with unknown etymology (see DELG 275). Autenrieth, A Homeric Dictionary, translates it as ‘dive after.’ Fitzgerald, in his translation of Homer’s Iliad (16.747) gives ‘diving.’ Liddell and Scott define διφάω as ‘search after’, but then cite the above passage from Homer, where the meaning is clearly to dive into the sea in order to collect oysters. Hesiod uses the same word to mean something like “covet.” Evelyn-White translates this line from Hesiod with the phrase “to be after.” The passage runs, “Do not let a flaunting woman coax and cozen and deceive you: she is after your barn.”
Phonetically, the form of διφ-άω is parallel to Grk δελφ-ύς ‘uterus,’ with substitution of the resonant /f/ for the resonant /l/.

It should be unnecessary to spell out the common semantic link between the three attestations of this proposed root (dive, female pudenda, vibrate). Nevertheless, stated very bluntly, the action required for a man to engender a child is to dive into the female pudendum and move in a vibrating motion.

It should be noted that this proposed root, along with the following two roots, constitute a trio of parallel forms (*gʷeibʰ, *gʷeibʰ, *gʷābʰ), all with identical consonantal structure. They also appear to share a common semantic value (sex organs and sex act), that, significantly, are referenced obliquely in all three cases. This is, no doubt, due to the emotional charge associated with this semantic field, and can be explained as the result of taboo deformation.

5. *gʷeh₁bʰ- (*gʷēbʰ-) ‘Something slimy, young animal, woman, wetness, vibrate, emit fluid’
OSax quappa ‘eel pout,’ MHG quappe ‘tadpole, belly,’ ON kvap ‘something slimy or gelatinous’ (IEW 466), Swed-dial (s)kvebba ‘fat woman,’ NE quab ‘bog, mire,’ NE quaver ‘shake, vibrate,’ Norw-dial kvapa ‘emit a fluid or liquid,’ Old Prussian gabawo ‘toad’ (but see below), OCS žaba ‘toad.’ — Watkins (2011) 34; IEW 465-66; LIV 205; EIEC 160; DELG 156; L&S 305-306; Mallory and Adams (2006) 403.

6. *gʷeh₂bʰ- (*gʷābʰ-) ‘Dive, plunge, deep, become hard, dye with blood or other colorants’
ON kafa ‘dive, plunge,’ kvefa ‘dip, submerge, OSwed kvaf ‘depth,’ Grk βάπτω ‘dip, plunge, dip a sword into a liquid in order to temper the steel, become hard, to dye, to dye someone with their own blood (cutting by sword), draw water by dipping.’ — Watkins (2011) 34; IEW 465-66; LIV 205; EIEC 160; DELG 156; L&S 305-306; Mallory and Adams (2006) 403.
The Greek tragedies use the word, \( \beta \alpha \pi \tau \omega \), to describe a “sword tempered in blood” (DELG 156). At an early date this term was applied to the dyeing process, i.e., dipping yarn into dyeing vats. Much later, in Christian times, it was used to signify religious baptism.

Both of these last two roots have uncertain but plausible semantic relationships to “womb, vulva, embryo, sexual intercourse” as seen in the other roots of this resonant series. The root, \( \ast g\text{v}^\text{e}b^h \), shares the concept deep with \( \ast g(\text{s})\text{emb}^b \), and the notion of “dive” with \( \ast g\text{veib}^b \). The root, \( \ast g\text{eib}^b \), shares the notion of “young animal” (in this case, tadpole), with \( \ast g\text{reib}^b \) and \( \ast g\text{eelb}^b \). The variations in vowel length and vowel color can again be accounted for by taboo deformation given the obvious sexual references in this resonant series as a whole.

Vulgar slang for the female vulva in the unrelated K’iche’ Maya language is \( t'ot' \) ‘snail’. This refers to the sticky, slimy, mucus-covered smooth tissue of both vulva and snail. It may be that the reference here to “slimy” and to “eel pouts and tadpoles” (the young of frogs and toads) fulfills a similar function in PIE.

The semantic value “toad” for the root, \( \ast g\text{v}^\text{e}b^h \), is based on Old Prussian \( g\text{aba}wo \), and Slavic \( \dot{z}aba \), both glossed ‘Kröte’ in Nesselmann’s Thesaurus Linguae Prussicae, which was the source for the citation in Pokorny and others. While the primary meaning of German \( \text{Kröte} \) is ‘toad,’ a secondary meaning is ‘woman.’ The New Cassell’s German Dictionary defines \( \text{Kröte} \) as: “toad, malicious person; bitch; jade, wench... (vulg.) niedliche kleine Kröte, pretty wench.”

Obviously German is not Old Prussian, and in any case it is difficult to know how far back in time the association can be traced, but nevertheless this instance constitutes an additional case parallel to the vulgar slang of K’iche’ \( t'ot' \) where the vulva is represented by a slimy animal.

“Plunge” and “deep” may also share semantic value with the concepts of “womb” and “vulva,” as the reproductive process of conception requires that the man plunge deeply. The first primitive human experience with dye and dyeing (staining) undoubtedly involved the female menses, and these are also referenced in \( \ast g\text{eelb}^b \) (“a woman’s courses”). In that connection, the concept “dye with blood” is explicit in the historic use
of Grk βαπτω where it can also mean “cut with sword” (L&S 306). The root, *gυεβʰ, carries notions of “woman,” “moist place,” “shake, vibrate,” and emitting a fluid.” These can all reasonably be taken for oblique references to the reproductive organs in the act of conceiving a child. Vibrating movement is a concept that is also shared with *gʰiʔbʰ.

It is evident that *gʰābʰ and *gʰeβʰ share many of the semantic values that are exhibited by this resonant series as a whole, and which are concerned with “womb, uterus, young animal, engendering, conception, and menstruation.” Certainly the other four roots (*gʰerbh, *gʰelbh, *gʰembh, and *gʰeʔbʰ) function in this way.

Notes on possible outside root connections:

1. Bomhard 539 cites Afrasian kʰwʳbʰ, etc. ‘midst, inward part, female genitalia, intestines, interior of the body,’ Dravidian karu, etc. (without final consonant) ‘fetus, embryo, egg, germ, young of animal, womb, yolk, pregnant.’
2. Bomhard 462 cites Afrasian k’al-, etc. (without final consonant) ‘to give birth, beget, son, male child, young of animals, to be pregnant.’

Conclusions: In root #1 the phonetic and semantic parallels to the Afrasian forms are strong, suggesting an ancient genetic connection. In root #2 the phonetic divergence (lack of final consonant) leaves the possibility of root connections inconclusive.

Table 29: *gʰe(R)- ‘Go, come’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*gʰeθ₁-</td>
<td>gʰ</td>
<td>h₂</td>
<td></td>
<td></td>
<td>1</td>
<td>Stride, go</td>
</tr>
<tr>
<td>*gʰem-</td>
<td>gʰ</td>
<td>m</td>
<td></td>
<td></td>
<td>2</td>
<td>Go, move, go away, set out, hurry, come</td>
</tr>
</tbody>
</table>

1. *gʰeθ₁- ‘Stride, go’

Ved jìgāti ‘strides, go quickly,’ Arm eki ‘I went,’ Grk βίβας ‘stride, cause to go,’ Av gāt ‘goes,’ Latv gāju ‘went.’ —LIV 205; IEW 463-64; Monier-Williams 420; L&S 315; EIEC 115.

2. *gʰem- ‘Go, move, go away, set out, hurry, come’

EIEC calls these two roots “ancient variants”.

*gu̯h-

Table 30: *g(u̯)h e(R)s- ‘To be delighted, glad, charmed, pleased, happy, laughing’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*g(u̯)hers-</td>
<td>g(u̯)h</td>
<td>r</td>
<td>s</td>
<td></td>
<td>1</td>
<td>Rapture, delight, pleasure, happiness, joyfulness, cheerfulness</td>
</tr>
<tr>
<td>*g(u̯)hes-</td>
<td>g(u̯)h</td>
<td>ø</td>
<td>s</td>
<td></td>
<td>2</td>
<td>Laugh, smile, laugh at, mirth, laughter, jest, joke, fun</td>
</tr>
</tbody>
</table>

1. *g(u̯)hers- ‘Rapture, delight, pleasure, happiness, joyfulness, cheerfulness’

Ved hārṣate ‘bristling of the hair in a thrill of rapture or delight, pleasure, happiness,’ hārṣin ‘joyful, rejoicing, delighting,’ hārṣula ‘disposed to be cheerful or happy, delighted.’ — LIV 198; IEW 445-46; Monier-Williams 1292-93.

2. *g(u̯)hes- ‘Laugh, smile, mirth, laughter, fun’

Table 31: *h₁(R)es- ‘Moisture, mist, wetness, dew, rain, urine’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*h₁u̯es-</td>
<td>h₁</td>
<td>u</td>
<td>s</td>
<td>1</td>
<td>Fine mist, moist ground, tree sap, libation</td>
<td></td>
</tr>
<tr>
<td>*h₁yers-</td>
<td>h₁</td>
<td>u</td>
<td>r</td>
<td>s</td>
<td>Rain, dew, urine, rainfall, rained upon</td>
<td></td>
</tr>
<tr>
<td>*h₁res, *h₁ers-</td>
<td>h₁</td>
<td>r</td>
<td>s</td>
<td>3</td>
<td>Liquid, moisture, dew, covered, rain</td>
<td></td>
</tr>
</tbody>
</table>

1. *h₁u̯es- ‘Fine mist, moist ground, tree sap, juice, libation’

Umb vestikatu ‘offer a libation,’ OE wōs ‘juice, broth, NDutch waas ‘layer of mist or fine drops,’ OHG wasal ‘moist ground,’ Latv vasa ‘forest with wet ground,’ ievasa ‘moisture, tree sap.’ —Mallory and Adams (2006) 347; EIEC 639; IEW 1171-72.

2. *h₁yers- ‘Rain, dew, urine’


3. *h₁res-, *h₁ers- ‘Liquid, moisture, dew, rain’


Notes on possible outside root connections:
2. Bomhard 721 cites Afrasian ḥwi, etc. (without final sibilant) ‘surge up, overflow, rain, flood, moisture;’ Dravidian vaṟṟu, etc. (without final sibilant) ‘inundation, flood, torrent, deluge, torrential rain.’
Conclusions: Lack of final sibilants in Bomhard’s proposed outside connections leave the possibility of genetic affiliations uncertain.

Table 32: *h₁e(R)- ‘To go’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*h₁ei-</td>
<td>h₁</td>
<td>i</td>
<td></td>
<td></td>
<td>1</td>
<td>Go</td>
</tr>
<tr>
<td>*h₁el-</td>
<td>h₁</td>
<td>l</td>
<td></td>
<td></td>
<td>2</td>
<td>Go, drive, go out, go up</td>
</tr>
<tr>
<td>*h₁er-</td>
<td>h₁</td>
<td>r</td>
<td></td>
<td></td>
<td>3</td>
<td>Go, come, set in motion, move, go toward</td>
</tr>
<tr>
<td>*h₁er-s-</td>
<td>h₁</td>
<td>r</td>
<td></td>
<td></td>
<td>4</td>
<td>Go, move, go astray, wander about, flow</td>
</tr>
</tbody>
</table>

1. *h₁ei- ‘Go’


2. *h₁el- ‘Go, drive, go out, go up’

MWels el ‘may go,’ Grk ελαύνω ‘drive,’ Arm eli ‘I went out, went up,’ —Mallory and Adams (2006) 397; LIV *h₁elh₂- 235; IEW 306-07; EIEC 228.

3. *h₁er- ‘Go, come, set in motion, move, go toward, arrive’

Grk ἔρχομαι ‘go, come,’ ὀρμάω ‘to set in motion, start, go for, go after,’ Ved ricchati, riṇoti ‘to go, move, rise, go toward,’ Hit āraskizzi ‘reach, arrive, get to.’ —Mallory and Adams (2006) 391, 394; LIV *h₁elh₂- 235; IEW 326-29; Monier-Williams 223; L&S 1252-53; EIEC 506.

4. *h₁er-s- ‘Go, move, go astray, wander about, flow’

Notes on possible outside root connections:
1. Bomhard 666 cites Afrasian ii, ci, yi?, ya, etc. ‘come, go, arrive at, went;’ Dravidian iyaṅku, etc. ‘move, stir, go, proceed, walk about, break in, marching, go on foot, lead, proceed, way, path, drive cattle, approach reach;’ Chuk-Kamch. jet, etc. ‘come, arrive, appear.’

Conclusions: Connections of root #1 with outside language families is probable.

Table 33: *h₁(R)eᵈʰ*—‘Come, grow, spring forth, originate’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>h₁leudʰ</em></td>
<td>h₁</td>
<td>l</td>
<td>u</td>
<td>dʰ</td>
<td>1</td>
<td>Grow, sprout, ascend, come, grow up</td>
</tr>
<tr>
<td><em>h₁nedʰ</em></td>
<td>h₁</td>
<td>n</td>
<td></td>
<td>dʰ</td>
<td>2</td>
<td>Come, arise, grow, spring forth</td>
</tr>
<tr>
<td><em>HyeRᵈʰ</em></td>
<td>H</td>
<td>u</td>
<td>R</td>
<td>dʰ</td>
<td>3</td>
<td>Grow, strengthen, increase, thrive</td>
</tr>
</tbody>
</table>

1. *h₁leudʰ*—‘Grow, sprout, ascend, come, grow up’

Ved ródhati ‘sprout, shoot, grow;’ rodha ‘sprouting, growing, ascending, moving upwards;’ Goth liudan ‘grow, grow up;’ OSax lōd ‘has grown,’ TochB lac ‘surpass, exceed, go beyond,’ YAv raodętti ‘grow,’ Grk ἤλυθον ‘came.’ —LIV 248;IEW 306-07, 684-85; Monier-Williams 884; EIEC 248; Benveniste 261-64.

2. *h₁nedʰ*—‘Come, arise, grow, spring forth’

Grk ἐνθεῖν ‘come,’ ἐνήνοθε ‘grow, arise from, originate, spring forth,’ —LIV 249;IEW 40-41; L&S 617.

3. *HyeRᵈʰ*—‘Grow, strengthen, increase, thrive’

Ved vṛdhánt ‘increase, augment, strengthen, thrive, grow, grow up,’ OAv varădaiti ‘become stronger,’ Ved várđhaṭe ‘grow, strengthen,’ YAv varoḍaiiete ‘strengthen.’ —LIV 228; IEW 1167; Monier-Williams 1010; Bomhard 804.

Notes on possible outside root connections:
3. Bomhard 804 cites Afrasian *war-am, etc. ‘raise, elevate, grow, increase, swell,’ Dravidian varai, etc. ‘mountain, peak, slope of hill,’ Uralic vaar, etc. ‘hill or mountain, forest, provide, fortify.’

Conclusions: Except for Afrasian, the semantic parallels to PIE are tenuous at best. The lack of final consonants in the roots cited further weakens possible connections with the PIE root.
Table 34: *h₁e(R)s-  ‘To be, to be at rest, to sit’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*h₁eh₁s-</td>
<td>h₁</td>
<td>h₁</td>
<td>s</td>
<td></td>
<td>1</td>
<td>Sit, stay, remain</td>
</tr>
<tr>
<td>*h₁es-</td>
<td>h₁</td>
<td>ø</td>
<td>s</td>
<td></td>
<td>2</td>
<td>Am, is, are, was, were</td>
</tr>
</tbody>
</table>

1. *h₁eh₁s-  ‘Sit, stay, remain’


Mallory and Adams (2006:296) write, “[This root] appears to be an intensive of *h₁es- ‘be’ (one might note that Spanish employs both the original verbs ‘be’ and ‘sit’ in its paradigm for ‘be’).”

2. *h₁es-  ‘Am, is, are, was, were’

Hit āszi ‘is, are,’ CLuv āsta ‘was, were,’ Ved āsti ‘is, are,’ Arm ēm ‘am,’ Grk ἐστί ‘is, are,’ Lat est ‘is,’ OIr is ‘is,’ Goth ist, sind ‘is, are,’ OLith esmi, ēsti ‘am, is.’ —LIV 241; IEW 340-41; Mallory and Adams (2006) 296.

Notes on possible outside root connections:
1. Bomhard 640 cites Proto-Afrasian *ʔas-, etc. ‘put, place, set, sit, be seated, strengthen, fortify, found, establish,’ Proto-Uralic *as-, etc. ‘place, put, set, reside, dwell, position, place, station, found, establish.’

Conclusions: Root connections to the Afrasian and Uralic forms are plausible.

Table 35: *h₁(R)e-  ‘Wish, long for, desire, love, cherish’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*h₁ueld-</td>
<td>h₁</td>
<td>ū</td>
<td>1</td>
<td>d</td>
<td>1</td>
<td>Wish, long for, desire</td>
</tr>
<tr>
<td>*Hleḥ₂d-</td>
<td>H</td>
<td>1</td>
<td>h₂</td>
<td>d</td>
<td>2</td>
<td>Love, cherish, wish, desire</td>
</tr>
</tbody>
</table>

1. *h₁ueld-  ‘Wish, long for, desire’
Grk ἐλδομαί ‘wish, long for, eager to reach, desire, be welcome,’ ἔλδωρ ‘wish, longing, desire.’ —LIV 254; IEW 1137; L&S 530.

2. *Hleh₂d- ‘Love, cherish, wish, desire’


### Table 36: *h₁e(R)k- ‘Suffer, feel terrible, be hungry, die’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*h₁e'(k)‘</td>
<td>h₁</td>
<td></td>
<td></td>
<td>k</td>
<td>1</td>
<td>To die</td>
</tr>
<tr>
<td>*h₁elk</td>
<td>h₁</td>
<td>1</td>
<td>k</td>
<td></td>
<td>2</td>
<td>To hunger, to be bad, to be evil, empty stomach</td>
</tr>
</tbody>
</table>

1. *h₁e'(k)‘ ‘To die’

Hit āki ‘die,’ ākkis ‘has died.’ —LIV 234.

2. *h₁elk ‘To hunger, to be bad, to be evil, to be on an empty stomach’


### *h₂-

### Table 37: *h₂(R)e̱g- ‘Take care of (animals?), tend, to milk, gather, clean’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
</table>

59
<table>
<thead>
<tr>
<th><strong>h₂le̱g̑</strong>-</th>
<th>h₂</th>
<th>l</th>
<th>ĝ</th>
<th>1</th>
<th>Look after, care for, give careful attention to</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>h₂melg̑</strong>-</td>
<td>h₂</td>
<td>m</td>
<td>ĝ</td>
<td>2</td>
<td>Squeeze out, press out, milk animals</td>
</tr>
<tr>
<td><strong>h₂merg̑</strong>-</td>
<td>h₂</td>
<td>m</td>
<td>ĭ</td>
<td>3</td>
<td>Squeeze out, gather up, wipe clean, graze animals</td>
</tr>
<tr>
<td><strong>h₂reh₁g̑</strong>-</td>
<td>h₂</td>
<td>ĭ</td>
<td>ĝ</td>
<td>4</td>
<td>Help, aid, support, be concerned about, care for</td>
</tr>
</tbody>
</table>

1. **h₂le̱g̑**- ‘Look after, care for, give careful attention to, gather up’
Grk αλέγω ‘to mind, look after, care for,’ Lat -legō, legere ‘look after, care for,’ *diligens* ‘fond of, careful, attentive, diligent,’ *diligentia* ‘carefulness, attentiveness, give careful attention to,’ *legō* ‘gather up, count up, follow the track of.’ —LIV 276; IEW 658; L&S 61; OLD 543-44, 1014.

2. **h₂melg̑**- ‘Squeeze out, press out, milk animals’

3. **h₂merg̑**- ‘To squeeze out, gather up, harvest, touch, wipe clean, graze animals’
Grk ἀμέργω ‘squeeze out, pluck, gather, harvest,’ ὀμόργνυμι ‘wipe off,’ ἀμοργός ‘press out,’ ἀμόργη ‘the liquid that runs out when olives are pressed’ (also Lat *amurgā*, *amurka*), Ved *mārṣṭi* ‘wipe off, clean,’ YAv *marzaiti* ‘touch, strip off, take off,’ Arm *meržem* ‘expel, drive cattle out to graze.’ —LIV 280; IEW 738; Mallory and Adams (2006) 169; L&S 81, 1227; OLD 125; EIEC 258.

4. **h₂reh₁g̑**- ‘Help, aid, support, be concerned about, pay attention to, care for’
Grk ἀρήγω ‘help, aid, succor, be good for, ward off,’ ON *rōkja* ‘to be concerned,’ pay attention to, take care of,’ OHG *ruoh*, *ruohha* ‘pay attention to, take trouble
for, care, attention, conscientiousness,’ NE *reck-* (opposite of *reckless* ‘carelessness’). —LIV 284; IEW 857; L&S 238; de Vries 457.

Notes on possible outside root connections:

2. Bomhard 850 cites Proto-Afrasian *mal-, etc. ‘draw out, squeeze out, suck out, suckle, nurse,’ Uralic *mälke- etc. ‘breast, chest,’ Eskimo *malak, etc. ‘upper part of breast, chest, suck (breasts), nipple, milk.’

**Conclusions:** Despite the lack of final consonant in the Afrasian terms, credible parallels are found in the Uralic and Eskimo words compared by Bomhard, suggesting the probability of ancient root connections.

**Table 38:** *h₂e(R)g- ‘To set oneself in motion, grow’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Heig-</td>
<td>H</td>
<td>j</td>
<td>g</td>
<td>1</td>
<td>Go, move, agitate, shake</td>
<td></td>
</tr>
<tr>
<td>*h₂uerg-</td>
<td>h₂</td>
<td>u</td>
<td>r</td>
<td>g</td>
<td>Turn, move downward, throw oneself</td>
<td></td>
</tr>
<tr>
<td>*h₂eug-</td>
<td>h₂</td>
<td>u</td>
<td>g</td>
<td>3</td>
<td>Grow, enlarge, increase</td>
<td></td>
</tr>
</tbody>
</table>

1. *Heig- ‘Go, move, agitate, shake’

Ved *iṅgāyati* ‘to go toward, move, agitate, shake,’ *ējati* ‘stir, move, tremble, shake,’ —LIV 222; IEW 13-14; Monier-Williams 164, 231.

2. *h₂uerg- ‘Turn around, move downward, throw oneself’

Ved *vārk* ‘to turn around,’ Lat *vergō* ‘to move as on a downward slope,’ Dutch *werkan* ‘to throw oneself,’ OCS *vrěšti* ‘throw.’ —LIV 290; IEW 1154; OLD 2036.

3. *h₂eug- ‘Grow, enlarge, increase’

Goth *aukan* ‘increase, enlarge,’ Lith *áugu* ‘grow,’ Lat *auxi* ‘increased, enlarged,’ *augeō* ‘increase in quantity or size, enlarge, extend, swell, to grow,’ Av *uxšyeiti* ‘grows,’ Skt *ṅkṣati* ‘strengthens,’ TochB *auk-* ‘grow, increase,’ NE *wax.* —LIV 274;
Notes on possible outside root connections:
3. Bomhard 722 cites Proto-Kartvelian *xwaw-, etc. ‘heap, pile, flock, much, many, multitude.’

Conclusions: Possible but uncertain connection to PIE.

Table 39: *h₂e(R)k- ‘Have, defend, protect’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*h₂erk-</td>
<td>h₂</td>
<td>r</td>
<td>k</td>
<td></td>
<td>1</td>
<td>Have, hold, retain, control, ward off, defend</td>
</tr>
<tr>
<td>*h₂elk-</td>
<td>h₂</td>
<td>1</td>
<td>k</td>
<td></td>
<td>2</td>
<td>Ward off, protect, defend, help, avenge wrongs</td>
</tr>
</tbody>
</table>

1. *h₂erk- ‘Have hold, retain, control, ward off, defend’

Hit harzi, harkanzi ‘have, hold, keep, retain,’ Lat arceō ‘keep close, contain, hold in, control, prevent from approaching, keep away, repulse, protect,’ arca ‘box, chest,’ Grk ἀρκέω ‘ward off, defend, keep off, assist,’ Arm argehum ‘hinder, restrain, hold back.’ —LIV 273; IEW 65-66; OLD 162; Mallory and Adams (2006) 271; DELG 105; L&S 242; EIEC 270.

2. *h₂elk- ‘Ward off, protect, defend, help, avenge wrongs’

Grk ἀλαλκε ‘ward off, keep off,’ Ἀλαλκ-ομένη’ς ‘Protectress’ (epithet of Athena), ἀλκαρ ‘safeguard, defense,’ ἀλκή ‘strength, strength to avert danger, defense, help,’ ἀλκ-τηρ ‘one who wards off, protector, helping, healing,’ Lat ulciscor ‘inflict retribution, take revenge, avenge wrongs,’ Goth alhs ‘temple,’ Lith aĩkas ‘sacred grove.’ —LIV 264; IEW 32; Mallory and Adams (2006) 281; Balg 19; L&S 67; DELG 55-56; OLD 2083.

Table 40: *h₂e(R)k- ‘Take as one’s own, receive an allotment or share’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
</table>
HAYNES — RESONANT VARIATION IN PROTO-INDO-EUROPEAN

<table>
<thead>
<tr>
<th>*Heik</th>
<th>H</th>
<th>i</th>
<th>k</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>*h2enk</td>
<td>h₂</td>
<td>n</td>
<td>k</td>
<td>2</td>
</tr>
</tbody>
</table>

1. *Heik  ‘Take, seize, lay hold of, receive, accept, possess, own’

Oss īs ‘take, seize, appropriate, capture, lay hold of, receive, accept,’ TochB aïštär ‘recognize, perceive, apprehend, know,’ Ved i’sē ‘have at one’s disposal,’ Goth aih, aigan ‘possess, own, hold, occupy.’ — LIV 223; IEW 298-99; Mallory and Adams (2006) (*h₄ejk) 271.

2. *h₂enk  ‘Hand over, allocate, present, portion, part, share, allotment’

Hit hikzi ‘assign, allot, allocate, distribute, apportion to, hand over, present,’ Ved āṁśa ‘portion, part, share, allotment,’ Grk ἀνάγκη ‘necessity.’ — LIV 268; IEW 45, 318; Mallory and Adams (2006) (*h₂enk) 270.

Table 41: *h₂e(R)-s— ‘Fire, heat, dry out, burn, altar, blaze’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*h₂eys-</td>
<td>h₂</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>Kindle a fire, give fire to a neighbor, apply fire to smoke out bees</td>
</tr>
<tr>
<td>*h₂eh₁-s-</td>
<td>h₂</td>
<td></td>
<td>h₁</td>
<td></td>
<td>2</td>
<td>Hearth, altar, dry up, suffer from thirst, wither, be parched</td>
</tr>
<tr>
<td>*h₂eh₁-</td>
<td>h₂</td>
<td></td>
<td>h₁</td>
<td></td>
<td>3</td>
<td>Fire, burn, be hot, kiln, with derivatives meaning ash, fire, heat of day</td>
</tr>
<tr>
<td>*h₂el-</td>
<td>h₂</td>
<td></td>
<td>l</td>
<td></td>
<td>4</td>
<td>Burn a sacrifice, altar, blaze, flare up, firebrand, coal</td>
</tr>
</tbody>
</table>

1. *h₂eys— ‘Kindle a fire, give fire to a neighbor, apply fire to smoke out bees’

Grk αὔω ‘get a light, light a fire, take fire,’ Grk Att -αὔσαι ‘light a fire,’ ἐναὔω ‘kindle a fire, light a fire, give a light (as was the duty of a neighbor), apply fire (to smoke out bees).’ — LIV 275; IEW 90; L&S 285, 557.
2. *h₂eh₁s- ‘Hearth, altar, dry up, suffer from thirst, wither, be parched’

TochB asāre ‘dry up, wither, desiccate,’ Lat āreō ‘to be dry or parched, to be withered from lack of moisture, to suffer from thirst, be dry,’ TochA asatār, TochB osotār ‘dry up, wither, desiccate,’ Lat āra ‘altar,’ Hit hāssa ‘hearth.’ —LIV 257; IEW 68; OLD 166; Bomhard 717.

LIV suggests that this root is an extension of the following (see *h₂eh₁s-, note 1; and *h₂eh₁r-, note 1).

3. *h₂eh₁r- ‘Fire, burn, kiln, with derivatives meaning ash, fire, heat of day’


4. *h₂el- ‘Burn a sacrifice, altar, blaze, flare up, firebrand, coal’


Notes on possible outside root connections:
2. Bomhard 717 cites Afrasian ḥāsāsa, etc. ‘place meat on the coals, roast,’ Uralic *āš- ‘to heat, to ignite,’ Proto-Altaic *āse- ‘catch fire, hot, burn, ignite, warm, heat, hot wind.’
4. Bomhard 739 cites Afrasian *ʕal-aw/y- ‘burn, burnt offering, make a fire, ignite, kindle, catch fire.’

Conclusions: Both semantically and phonetically these outside roots parallel the PIE forms, suggesting that the two resonant variants here were formed while still in contact with the Afrasian, Uralic, and Altaic families.

\[*h₃\]

Table 42: *h₃(R)e[d]- ‘Hate, be angry at, blame, abhor, detest, despise’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*h₃ed-</td>
<td>h₃</td>
<td></td>
<td></td>
<td>d</td>
<td>1</td>
<td>Hate, be angry at, be terrible</td>
</tr>
<tr>
<td>*h₃neid-</td>
<td>h₃</td>
<td>n</td>
<td>i</td>
<td>d</td>
<td>2</td>
<td>Mock, blame, abhor, detest, hate, despise</td>
</tr>
</tbody>
</table>
1. *h₃ed-  ‘Hate, be angry at, be terrible’

Lat ōdī ‘to hate,’ odium ‘hate, hatred,’ OE atol ‘atrocious,’ Grk ὁδύσσασθαι ‘be angry at, hate,’ Arm ateam ‘hate,’ Hit hatukzi ‘is terrible.’ —LIV 296; IEW 773; Mallory and Adams (2006) 344; Bomhard 719.

2. *h₃nejd-  ‘Mock, blame, abhor, detest, hate, despise’


Notes on possible outside root connections:
1. Bomhard 719 cites Afrasian ḥaṭā ‘to shake,’ Dravidian atir, etc. ‘shake, quake, tremble, be startled, alarmed, roar of beasts, fear, shiver.’

Conclusions: The semantics are distant and genetic connections doubtful unless one can accept the semantic development from “fear” to “hate.”

*_picker-

Table 43: *picker(R)-  ‘Shell, pebble, limestone pebble’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*ₚork-ã-</td>
<td>ʷk</td>
<td>ʰr</td>
<td>ʰk</td>
<td>1</td>
<td></td>
<td>Gravel, grit, pebble on the sea-shore</td>
</tr>
<tr>
<td>*ₚonk-h,os</td>
<td>ʷk</td>
<td>ʰn</td>
<td>ʰk</td>
<td>2</td>
<td></td>
<td>Mussel shell, conch shell (commonly used as pendants)</td>
</tr>
<tr>
<td>*ₚelk-</td>
<td>ʷk</td>
<td>ʰl</td>
<td>ʰk</td>
<td>3</td>
<td></td>
<td>Hypothetical root to account for Latin calx ‘limestone, pebble, rubble’</td>
</tr>
</tbody>
</table>
1. *kork-ā- ‘Gravel, grit, pebble on the sea-shore’


2. *konk- ‘Mussel shell, conch shell’

ON hengja ‘hang,’ Hitt kānki ‘hang, suspend.’ Extended form *konk-ʰhɔs ‘mussel and any related shellfish’ (presumably from conch or cowrie shells used as pendants), Grk κόγχος ‘mussel shell, conch shell,’ Skt śaṅkā ‘(conch) shell.’ —Mallory and Adams (2006) 150, 388, 439 (indicating that *konkhₙis is derived from *konk-); LIV 325; Watkins (2011) 45; IEW 566, 614; L&S 966; AHD 382; de Vries 222; Bomhard 601 (hang).

3. *kelk- ‘Proposed hypothetical root to account for Lat calx, calc-is’

Lat calx, calcis ‘lime, limestone, pebble (> NE “calculate,” from the small stone, probably limestone, used in reckoning; also “calcium”), calculōsus ‘full of pebbles, pebbly,’ calculus ‘a small stone or pebble, stone or gravel in the bladder or kidney, a pebble used in making calculations or on a counting board,’ Poss. Grk χάλιξ, χάλικος ‘small stone, pebble, rubble and mortar used to make concrete.’ —L&S 1972; OLD 261-62; AHD 262, 267; DELG 1198-99; EIEC 287.

Note that Limestone is derived from the shells of crustaceans like mussels, snails, and conches that are frequently referred to in the other roots in this resonant-series.

4. *keyk- ‘Shine, glimmer, mussel, pearl oyster, mother of pearl, cockle shell’

Skt śōcati ‘glow, shine, glimmer,’ śukti ‘mussel, pearl oyster, mother of pearl, a small shell or cockle.’ —LIV 331; IEW 597; Monier-Williams 1080; EIEC 514.

Notes on possible outside root connections:
2. Bomhard 601 cites Afrasian šankala ‘to hook up, peg, hook,’ Dravidian cuṅku, etc. ‘end of cloth left hanging out in dressing, pleat, or fold of garment, the end of a garment, cloth, dangling tatter.’

**Conclusions:** Semantically and phonetically this PIE root shows credible parallels to the Afrasian and Dravidian forms, suggesting ancient genetic connections.

**Table 44:** \(^{\text{*}k}(R)-\) ‘Cover, conceal, coat’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>(^{\text{</em>}})el-</td>
<td>ķ</td>
<td>1</td>
<td></td>
<td>1</td>
<td>Cover, conceal, cloth garment</td>
<td></td>
</tr>
<tr>
<td><em>(^{\text{</em>}})em-</td>
<td>ķ</td>
<td>m</td>
<td></td>
<td>2</td>
<td>Cover, shirt, wool coat</td>
<td></td>
</tr>
<tr>
<td><em>(^{\text{</em>}})er-</td>
<td>ķ</td>
<td>r</td>
<td></td>
<td>3</td>
<td>Cover of hair, coat of hair</td>
<td></td>
</tr>
</tbody>
</table>

1. *\(^{\text{*}}\)el-  ‘Cover, conceal, cloth garment’

OIr *ceilid ‘conceals, dissembles,’ Lat cēlō ‘conceal,’ occulō (<*ob-kelō) ‘cover, hide,’ ON *hylja ‘to cover,’ OE *helan ‘to conceal,’ OHG *helan ‘to conceal,’ Goth *huljan ‘to cover,’ OSax bi-hellian ‘cover, veil, wrap up,’ Ved *śārman ‘shelter, cover, protection,’ *śarmara ‘garment, cloth.’ —IEW 553-54; EIEC 134; Mallory and Adams (2006) 380; LIV 322; Monier-Williams 1058; L&S 871.

2. *\(^{\text{*}}\)em-  ‘Cover, coat’

Late Lat *camīsia ‘linen shirt, nightgown,’ ON *hamr ‘skin, slough,’ hams ‘snake’s slough, husk,’ OE *hama ‘dress, covering,’ ham ‘undergarment, hemeð ‘shirt,’ Skt *śāmūla ‘thick woolen shirt,’ *śami ‘pod, legume,’ Bret *kamps ‘a ceremonial coat warn at the mass.’ —IEW 556; EIEC 134; Mallory and Adams 379; Bomhard 567.

3. *\(^{\text{*}}\)er-  ‘Cover of hair, coat of hair’

Eng hair, Lith šūys ‘bristle, animal hair,’ Rus šerstî ‘wool, animal hair,’ Latv sari ‘bristle,’ Rus-CSlav svrstv ‘wool,’ Slov sīst ‘animal hair.’ —IEW 583; Mallory and Adams (2006) 178; Bomhard 598.

Notes on possible outside root connections:

2. Bomhard 567 cites Proto-Afrasian *kam ‘to cover, hide, conceal, cloak,’ Proto-Kartvelian qamf, etc. ‘skin of sheep or goat, shoe,’ Proto-Uralic *kama, etc. ‘peel, skin, surface, crust, scalp, rind, fish scale,’ Eskimo *qamtaq, etc. ‘roof, ceiling, be filled to the brim, become high tide, attic, upper floor.’
3. Bomhard 598 cites Afrasian (Hebrew) šēḵār, etc. ‘hair, fur, pelt, wool, bristle, straw, grass, comb,’ Dravidian īṟppi, etc. ‘nit, to comb out nits, lice, comb for removing nits.’

**Conclusions:** The phonetics and semantics are close, suggesting that these two resonant variants were created while PIE was still in contact with the outside language families.

<table>
<thead>
<tr>
<th>Table 45: *ke(R)s-</th>
<th>‘Praise, predict, tell, teach, announce’</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIE Root</td>
<td>Initial</td>
</tr>
<tr>
<td>*keNs-</td>
<td>ˆk</td>
</tr>
<tr>
<td>*keHs-</td>
<td>ˆk</td>
</tr>
</tbody>
</table>

1. *keNs-  ‘Praise, predict, tell, teach, show, announce’

Ved śāṁsatī ‘recite, repeat an invocation, praise, extol, relate, say, tell, report, announce, predict,’ OAv səṅhaitī ‘announce, proclaim, preach, prophesy,’ MCymr dan-gos- ‘show, demonstrate,’ Lat cēnseō ‘give an opinion, recommend, decide, decree, assess.’ — LIV 326; IEW 566; Monier-Williams 1043-44; OLD 297; Benveniste 424-27.

2. *keHs-  ‘Praise, predict, tell, teach, announce, proclaim’

Ved śāsī ‘chastise, correct, censure, control, rule, direct, bid, order, teach, instruct, inform, announce, proclaim, predict, foretell, praise, commend,’ OAv sāstī ‘instruct, teach,’ Alb thom ‘say,’ rrēfen ‘tell, confess, admit, tell the truth.’ — LIV 318; IEW 533; Monier-Williams 1068.

Whitney (1885:172) states that these two roots are “apparently related.”

**k-**

<table>
<thead>
<tr>
<th>Table 46: *(R)e(s)-, *(R)e(p)-</th>
<th>‘Womb, vulva, uterus, vibrate, sexual excitement’</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIE Root</td>
<td>Initial</td>
</tr>
</tbody>
</table>

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HAYNES — RESONANT VARIATION IN PROTO-INDO-EUROPEAN

<table>
<thead>
<tr>
<th>*keyp-</th>
<th>k</th>
<th>y</th>
<th>p</th>
<th>1</th>
<th>Desire, covet, shake, tremble, vibrate, be in a passion, vulva</th>
</tr>
</thead>
<tbody>
<tr>
<td>*kuelp-</td>
<td>k</td>
<td>y</td>
<td>l</td>
<td>p</td>
<td>2</td>
</tr>
<tr>
<td>*klep-</td>
<td>k</td>
<td>y</td>
<td>l</td>
<td>p</td>
<td>3</td>
</tr>
<tr>
<td>*krep-</td>
<td>k</td>
<td>r</td>
<td>p</td>
<td>4</td>
<td>Body, belly, womb, uterus, midriff</td>
</tr>
<tr>
<td>*komp-</td>
<td>k</td>
<td>(u)</td>
<td>m</td>
<td>p</td>
<td>5</td>
</tr>
</tbody>
</table>

1. *keyp-  ‘Desire, covet, vibrate, be in a passion’

ON *hjúfa ‘moan,’ Skt kupyati ‘shake, tremble, thrill, vibrate, to be moved, be excited, be agitated, be in a passion,’ Lat cupiō ‘wish, want, desire,’ cupiditās ‘passionate desire, longing, yearning, lust, passion, the object of one’s desire,’ cupidus ‘eager for carnal pleasure, wanton, lecherous, passionately longing,’ cupidus ‘that which one desires, beloved,’ Ved kopāyati ‘shake, quake, vibrate, be in a passion,’ Slav *kvrъ, Czech kep ‘vulva.’ — LIV 359; IEW 591, 596; Monier-Williams 291; de Vries 233; OLD 472-73; Watkins (2011) 47.

2. *kuelp-  ‘Womb, vagina, gulf, arched or vaulted ceiling’

Grk κόλπος ‘bosom, lap, vagina, womb, bay, gulf, fold of garment,’ ON holf ‘the domed, arched, curved, or vaulted ceiling of a room,’ OHG be-welben ‘surround, encircle, curve or arch over.’ — LIV 375; IEW 630; L&S 974; de Vries 247; Kluge 869; Mallory and Adams (2006) 384; EIEC 62.

Use of this root to denote an arched, domed, or vaulted ceiling probably originally developed from the notion of a curved, concave, womb-like room. It is highly unlikely that the name of the womb or vagina (as in Grk κόλπος) would be derived from geographical or architectural features (bay, gulf, arched ceiling). Typically, derivatives develop from the more familiar term to the more abstract term. It is far more likely that the word for *womb inspired the notion of a bay with a narrow opening, or of a room with a curved ceiling than the other way around.
There are three additional attested words that are not usually placed with this root, but that share strong semantic connections and close (or exact) phonetic form. They are included below for consideration:

- **OHG (h)wëlf, OSax, OE hwëlp, MHG wëlf, ON hwëlpr, Eng whelp** ‘young offspring of a mammal, such as dog or wolf, to give birth to, to whelp,’ all from Germanic *hwelpa.* — AHD 1958; Kluge 852; EIEC 615.

Germanic *hwelpa* probably dissimilated from earlier *hwelfa* to distinguish this word from the very similar sounding word, *wolf,* which had altogether different origins and an independent history. As can be seen in *gṷelb* (‘Womb, uterus, young animal’), the PIE word for womb was also commonly applied to the fruit of the womb, i.e. the embryo or young offspring of human or animal. The word *whelp* has no known PIE origin.

- **Lat culpa** ‘guilt, blame, an offense (often of sexual misconduct), a moral defect,’ *culpābilis* ‘deserving of censure, reprehensible.’ — OLD 465-66.
- **Osc kulupu** ‘culpa(?)’ with normal anaptyxis. — Buck 50, 51, 252, 314.

In the ancient world, rape, adultery, and fornication were considered some of the most culpable and reprehensible offenses. These all involve unauthorized entry into a woman’s vagina, and the concept of such guilt was apparently derived from that organ. Neither Latin *culpa* nor Oscan *kulupu* has any known PIE origin.

3. ***k=lep-** ‘Desire’


The semantics of this root parallel that seen in #1 above. The instinct for procreation, and the focus on the organs of procreation, constitute some of the strongest sources of desire in the human being.

4. ***kreп-** ‘Body, belly, womb, uterus, midriff’
OHG (h)rëf ‘belly, womb, uterus,’ OFris href ‘belly,’ OE hrif ‘womb, uterus, belly,’ mid(h)rif ‘midriff,’ Grk πραπίς ‘diaphragm,’ Lat corpus ‘the body, the generative powers, to live by prostitution (corpore quaestum facere), the center of certain physiological needs and desires, especially as representing the grosser elements in human nature,’ Skt kṛpā ‘form, beauty,’ Av kāṛpom ‘form, body,’ Mlr cṛi ‘body’ (< kṛpes). —Mallory and Adams (2006) 178; IEW 620; OLD 448; Bomhard 526.

5. *kʰwemp- ‘Tremble, shake, quiver, vibrate’


On semantic grounds, LIV excludes attested words with distant meanings, such as field, maimed, corner, edge, etc., (cited in IEW and Mallory and Adams) as these are probably from a different root. I follow LIV here. Latin con-cumbō ‘to lie together (for sexual intercourse)’ belongs here only if one can accept that the /p/ becomes voiced to /b/ through assimilation with the preceding voiced /m/. Otherwise, Lat (con-)cumbō has no known PIE origin. Perhaps it is a collateral form of Lat cubō, ‘to lie down, recline,’ cubīle ‘a bed regarded as the scene of sexual relations, a marriage bed,’ as suggested by OLD 392, but Lat cubō, cubīle likewise has no known PIE origin.

Notes on possible outside root connections:
4. Bomhard 526 cites Afrasian (Akkadian) karšu, etc. ‘body, belly, womb, stomach,’ Proto-Uralic *kurz ‘body, form, figure.’

Conclusions: While semantic parallels seem to be present, the lack of final consonant in the Afrasian and Uralic makes outside root connections doubtful.

Table 47: *k(R)ep- ‘Steal, hide’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*klep-</td>
<td>k</td>
<td>l</td>
<td></td>
<td>p</td>
<td>1</td>
<td>Steal, conceal, cover, hide</td>
</tr>
<tr>
<td>*kreyp-</td>
<td>k</td>
<td>r</td>
<td>y</td>
<td>p</td>
<td>2</td>
<td>Hide, conceal, bury, keep secret, steal, betray</td>
</tr>
</tbody>
</table>
1. *klep-  ‘Steal, conceal, cover, hide’

Grk κλέπτω ‘steal, carry off, spirit away,’ κλέπτης ‘a thief, robber, cheat, knave,’
Lat clepō ‘take away secretly, steal, hide oneself away, steal away,’ Goth hilfan
‘steal,’ TochB kälypi ‘steal,’ OPrus anklípts ‘concealed.’ Probably Grk καλύπτω
‘cover, hide, conceal’ (semantically an exact fit, but with unexplained epenthetic
vowel and with altered second vowel probably by analogy with the following
root). — LIV 363; IEW 553, 604; L&S 958; OLD 336; Mallory and Adams (2006)
335; EIEC 595; Bomhard 408.

2. *kreup-  ‘Hide, conceal, bury, keep secret, steal, betray’

Grk κρύπτω ‘hide, conceal, cover in the earth, bury, keep secret, lie hidden, keep
covered,’ TochB kraup- ‘gather,’ Latv krâpju ‘steal, betray,’ Lith krópti ‘steal.’ —

Mallory and Adams (2006) and IEW analyze this root with final in -bh as a root
extension.

Notes on possible outside root connections:
1. Bomhard 408 cites Dravidian qale, etc. ‘rob, steal, thief, theft, deceitful.’

Conclusions: While semantic parallels exist, lack of final consonant in the Dravidian makes root
connections doubtful.

Table 48: *(s)k(R)et-  ‘Shake, shudder, quake, vibrate’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*kret-</td>
<td>k</td>
<td>r</td>
<td>ø</td>
<td>t</td>
<td>1</td>
<td>Shake, agitate, rattle, strike</td>
</tr>
<tr>
<td>*kreut-</td>
<td>k</td>
<td>r</td>
<td>u</td>
<td>t</td>
<td>2</td>
<td>Move, quick, shake, agitate, flutter</td>
</tr>
<tr>
<td>*(s)kuh₁t-</td>
<td>(s)k</td>
<td>u</td>
<td>h₁</td>
<td>t</td>
<td>3</td>
<td>Hurry, strew, sprinkle, shake, agitate,</td>
</tr>
<tr>
<td>*(s)ku₂(n)t-</td>
<td>(s)k</td>
<td>u</td>
<td>(n)</td>
<td>t</td>
<td>4</td>
<td>Shake, jolt, quake, convulse</td>
</tr>
</tbody>
</table>

1. *kret-  ‘Shake, agitate, rattle, strike’

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2. *kreyt- ‘Move, quick, shake, agitate, flutter’


3. *(s)kyeh1t- ‘Hurry, strew, sprinkle, shake, agitate, vibrate, strike, jolt’

ON skynda ‘hasten, go quickly, anything hurried,’ OE scyndan ‘hurry, hasten, urge, incite,’ Grk πάσσω ‘strew, sprinkle,’ Lat quatiō ‘shake, rock, agitate, tremble, vibrate, hurry, strike,’ OHG scutten ‘shake, agitate, vibrate, jolt, joggle.’ —LIV 563; Mallory and Adams (2006) 380; IEW 632, 957-58; IEW 509; Vigfusson 563; Bosworth and Toller 847; L&S 1346; OLD 1544-45; Bomhard 520.

4. *(s)ky(n)t- ‘Shake, jolt, quake, convulse’


Notes on possible outside root connections:
3. Bomhard 520 cites Afrasian (Egyptian) ktk, etc. ‘shake, quiver, make with the hands, touch, build,’ Dravidian kuti, etc. ‘jump, leap, bound, frolic, splash, boil, bubble, stamp, trot, agitation, shake violently,’ Proto-Kartvelian *kwet- ‘move, shake, swing, sway, move something.’

Conclusions: Root 3 appears to correspond semantically and phonetically with the outside non-PIE roots.

Table 49: *ke(R)h1- ‘Sing, call, praise, extol, proclaim, chant incantations’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*kan-</td>
<td>k</td>
<td>n</td>
<td></td>
<td></td>
<td>1</td>
<td>Sing, celebrate, extol, proclaim, sound a call, chant incantations, cry of birds, cock</td>
</tr>
<tr>
<td>*kerH</td>
<td>k</td>
<td>r</td>
<td>H</td>
<td></td>
<td>2</td>
<td>Praise, celebrate, extol, announce, report, fame</td>
</tr>
</tbody>
</table>
Proclaim, praise, extol, call, charm by incantation and music, the cock

1. *kan- ‘Sing, celebrate, proclaim, sound a call, chant incantations, the cock’

OIr canaid ‘sings,’ cecchain ‘sang,’ Wels canu ‘sing, play an instrument,’ Lat canō ‘sing, chant incantations, celebrate (in verse), relate, tell, extol, proclaim, tell rumors, sound a call, (of birds) to cry,’ prophesy, foretell’ carmen ‘song, prophecy, form of incantation,’ Grk ηι-κανός ‘cock’ (literally ‘dawn-singer), probably TochB kene ‘song, tune,’ Umb kanetu ‘let sing,’ Goth Hahn ‘cock.’ — Mallory and Adams (2006) 358; LIV 342; IEW 525-26; EIEC 519; OLD 266; Bomhard 414.

2. *kerH ‘Praise, extol, fame’

Ved akārīṣam ‘have praised, have extolled,’ carkarmi ‘to praise, celebrate, extol,’ YAv carōkarmahī ‘we praise,’ OE hrēp ‘fame,’ ON herma ‘announce, report,’ OHG hruom ‘fame.’ — Mallory and Adams (2006) (*kar-) 337; LIV 353; IEW 530-31; deVries 224; EIEC 449.

3. *elh₁, *kleh₁ ‘Proclaim, praise, extol, call, charm by incantation, the cock’

OIr cailech ‘cock,’ Wels ceiliog ‘cock,’ Lat calō ‘announce, proclaim, summon,’ ON hjala ‘chatter, talk,’ Grk καλέω ‘call,’ καλήτωρ ‘herald,’ κηλέω ‘charm, bewitch, beguile (“especially by music”), charm by incantation,’ Hit kalless ‘call,’ Skt uśā-kala ‘cock’ (literally “dawn caller’), ON hōla ‘praise, extol, celebrate.’ — LIV 349, 361; IEW 548-551; EIEC 90; OLD 260; L&S 947; deVries 278; Bomhard 404.

Notes on possible outside root connections:
1. Bomhard 414 cites Afrasian (Egyptian) kny ‘to call,’ Dravidian kaṇakaṇa, etc. ‘to sound, rattle, jingle, ring, tinkling,’ Proto-Uralic *kaŋ, etc. ‘to call, to invite, ask, request, beg,’ Chuk-Kamch kaŋ(læ), etc. ‘growl, snarl.’

3. Bomhard 404 cites Proto-Afrasian *kal, etc. ‘make a noise, to sound, to call out, to shout, cry out, howl, argue, quarrel, resound,’ Dravidian kalakala, etc. rustle, tinkle, rattle, sound, clamor, roar, chatter, gurgle, noise, sound, clamor, tumult chattering of birds, shout,’ Eskimo *qalor ‘yell, ring, whistle, growl, cry, shriek, whine, twitter, bark, make a characteristic animal sound.’
Conclusions: These two roots appear to have differentiated as resonant-variants while still in contact with the outside language groups.

Table 50: *(s)ke(R)p- ‘Cut, scratch, carve, take, gather, catch, seize, reap, harvest’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*(s)kep-</td>
<td>(s)k</td>
<td>ø</td>
<td>p</td>
<td>1</td>
<td>Cut, hack, hew, dig, strike</td>
<td></td>
</tr>
<tr>
<td>*(s)kerp-</td>
<td>(s)k</td>
<td>r</td>
<td>p</td>
<td>2</td>
<td>Cut off, shear, shape, harvest, reap, seize</td>
<td></td>
</tr>
<tr>
<td>*(s)kelp-</td>
<td>(s)k</td>
<td>l</td>
<td>p</td>
<td>3</td>
<td>Scratch, carve, engrave, split or hew</td>
<td></td>
</tr>
<tr>
<td>*kehp-</td>
<td>k</td>
<td>h₂</td>
<td>p</td>
<td>4</td>
<td>Take, gather, reap, seize, catch, have, hold</td>
<td></td>
</tr>
</tbody>
</table>

1. *(s)kep- ‘Hack, hew, cut’

Grk κόπτω ‘smite, cut off, chop off, fell trees,’ Lith kapu ‘hew, hack,’ OCS skoplijo ‘cut away, cut off, cut down,’ Alb kep ‘hewn, hacked,’ NPers kaf ‘split,’ Grk σκέπαρνος ‘hatchet for hewing wood.’ —LIV *(s)kep- 555; IEW *(s)kep- 931-32; L&S 979.

2. *(s)kerp- ‘Cut off, shear, shape, pluck, pull, pick, harvest, reap, seize’

Lith kerpù ‘cut, shear,’ OCS po-cwrópo ‘to shape,’ Lat carpō ‘pluck, pull, pick, harvest, crop, seize, pull off, take away,’ Grk καρπώ ‘take as fruit or produce, reap crops from, exploit, bear fruit,’ καρπάλιμος ‘eager, ravenous,’ κάρπασος ‘cotton,’ καρπός ‘fruit, fruits of the earth, corn, harvest, crops, wool, produce,’ NE harvest, Skt karpāsa ‘cotton.’ —LIV *(s)kerp- 559; OLD 279; IEW *(s)kerp- 944-45; Moiner-Williams 258; L&S 879-80; EIEC 258.

3. *(s)kelp- ‘Scratch, carve, engrave, hew wood’

Lat scalpō ‘scratch, carve, engrave,’ sculpō ‘carve or engrave,’ OHG scelīfa, MHG dial. schelfe ‘skinned bark,’ MNG schelver ‘piece (of wood) with leaves removed,’ ON skjolf ‘bench,’ OE scielfe ‘story, floor, tier,’ MNG schelf ‘book-shelf, wooden framework,’ (without s-): Got halbs, ON halfr, OE healf, OSax half, OHG halb (literally ‘divided’) ‘grip, handle, shaft,’ NE helve, Lith kūla ‘cross-beam on a sledge,’ OPrus kalpus ‘upright pole,’ Lith sklempiù ‘smoothly hew or dress timber, to polish.’ —IEW *(s)kelp- 926; OLD 1698, 1713.

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4. *keh₂p-  ‘Take, gather, reap, seize, catch, have, hold’

Lat capiō ‘take into the hand, take hold of, take food or drink, catch, gather, reap, capture, seize, take booty,’ Grk κάπτω ‘greedy, gulp down,’ Goth hafjan ‘lift, heave,’ OHG habēn ‘have, hold,’ Latv kāmpju ‘seize,’ Alb kap ‘catch, grab, seize,’ Skt kapaṭi (dual) ‘two handfuls.’ —Watkins (2011) 38; IEW 527; LIV 344; EIEC 563; L&S 876; OLD 269-71; Balg 148; Mallory and Adams (2006) 270-71; Bomhard 415.

Notes on possible outside root connections:
4. Bomhard 415 cites Proto-Afrasian *kap-, etc. ‘take, seize, hand, palm, paw, claw, flat of the hand, cut off the hands,’ Elamo-Dravidian kap-pi, etc. ‘catch, latch, clasp, brooch, cover or press gently with the hand, throw the hand or claws upon in order to catch, feel with the hand, touch,’ Uralic (Proto-Finno-Ugrian) *kapp-, etc. ‘take seize, grasp, captive, hand, paw,’ Proto-Altaic kʰapʰ-, etc. ‘press, grasp, strangle, pinch, squeeze, hold, join, press together, snatch, take, bite, carry off, acquire, loot,’ Proto-Eskimo *kap-, etc. ‘be narrow, constricted, tight-fitting, pull outer garment over inner one.’

Conclusions: This root is well-represented in the outside language families and therefore appears to be a distant cognate.

Table 51: *ke(R)-  ‘To love, desire, be pleased, copulate; friend, pleasure, whore’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref.</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*keh₂-</td>
<td>k</td>
<td>h₂</td>
<td></td>
<td></td>
<td>1</td>
<td>Love, desire, gladness, friend, adulterer, whore, greedy</td>
</tr>
<tr>
<td>*kem-</td>
<td>k</td>
<td></td>
<td>m</td>
<td></td>
<td>2</td>
<td>Love, desire, hunger, lasciviousness, charming, beautiful, copulates with</td>
</tr>
<tr>
<td>*ken-</td>
<td>k</td>
<td></td>
<td>n</td>
<td></td>
<td>3</td>
<td>Love, be pleased, demand, request, tendency, pleasure</td>
</tr>
</tbody>
</table>

1. *keh₂-  ‘Love, desire, gladness, friend, whore’

Ved kāyaṃa ‘desire,’ OAv kaiia ‘to be glad,’ Lat cārus ‘love,’ Goth hors ‘adulterer,’ Ved kanti ‘desire, love,’ OIr caraid ‘loves,’ cara ‘friend,’ Wels caraf ‘love,’ NE whore, Latv kārs ‘greedy.’ —IEW 515; EIEC 357; LIV 343.

2. *kem-  ‘Love, desire, hunger, lasciviousness, charming, beautiful, copulates with’
Lith kamaros ‘lasciviousness,’ Latv kāmēt ‘hunger,’ Skt kāmāyati ‘desires, longs for, is in love with, copulates with,’ kamra- ‘charming, beautiful,’ kamana- ‘greedy,’ TochB kāṁm ‘play.’ —EIEC 357; IEW 515.

3. *ken- ‘Love, be pleased, demand, request, tendency, pleasure’

MIr cin (<*kenu-) ‘love, tendency,’ Av ğakaṇa ‘be pleased,’ āṇahi- ‘demand, request,’ Skt cākana ‘is pleased,’ cānas- ‘pleasure.’ —EIEC 358; IEW 515.

*kJ-

Table 52: *kJse(R)b- ‘Shake, vibrate, whirl around, swing, toss’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*kJseb-</td>
<td>k(s)</td>
<td>j</td>
<td>b</td>
<td>1</td>
<td></td>
<td>Shake, tremble, vibrate, swing, toss</td>
</tr>
<tr>
<td>*kJseib-</td>
<td>k(s)</td>
<td>j</td>
<td>b</td>
<td>2</td>
<td></td>
<td>Throw, toss, move hastily, turn, swing</td>
</tr>
</tbody>
</table>

1. *kJseb-  ‘Shake, tremble, vibrate, swing, toss’

Ved kṣobhate ‘shake, tremble, be agitated or disturbed, be unsteady, stumble, stir up, excite,’ kṣubhita ‘agitated, shaken, tossed, set in motion,’ YAv xšufsən ‘shake, tremble, vibrate,’ Pol chybać ‘swing, rock, pitch, move back and forth.’ —LIV 372; IEW 625; Monier-Williams 331.

2. *kJseib-  ‘Throw, toss, move hastily, turn, swing’

Ved kṣipáti ‘throw, cast, toss, move hastily,’ YAv xšuuaēβaiiaṭ.aṣtra ‘swing the whip,’ OCS o-şibati ‘turn oneself around,’ Rus šibát ‘throw.’ —LIV 373; IEW 625, 1041; Monier-Williams 328.

Table 53: *kJe(R)- ‘Make, do, gather, fabricate, spin, build’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>k✈er-</em></td>
<td>k✈</td>
<td>r</td>
<td>1</td>
<td>Make, do, manufacture, cultivate, execute, build, create</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*k✈eï-</td>
<td>k✈</td>
<td>i</td>
<td>2</td>
<td>Make, do, manufacture, create, construct, gather up, arrange in order</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*k✈el-</td>
<td>k✈</td>
<td>l</td>
<td>3</td>
<td>Turn, turn the earth (plow, cultivate), spin (i.e. manufacture yarn), wheel, spindle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*k✈er-pH-</td>
<td>k✈</td>
<td>r</td>
<td>4</td>
<td>Turn, wrist, whirlpool</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. *k✈er- ‘Make, do, manufacture, cultivate, build’


2. *k✈eï- ‘Make, do, manufacture, create, gather up, construct’

Grk ποιέω ‘make, do, manufacture, create, produce, bring about, cause,’ OCS činī ‘order,’ Skt cinōti ‘arrange in order, heap up, pile up, construct, gather together.’ — LIV 378; IEW 637-38; Watkins (2011) 46; Mallory and Adams (2006) 219-20; L&S 1427; Monier-Williams 394; Bomhard 523.

Probably the first manufacturing activity that human beings engaged in was the production of textiles, which was based on the spinning of yarn from raw fleece and fibers. As the early Indo-Europeans transitioned from an economy built around hunting, gathering, and herding animals to one of settled agriculture, the next most important activity would have been the cultivation of the soil, which involved turning the earth through plowing. *k✈el- includes both of these concepts, and these link it to the roots cited above. Since the notions “make, do, manufacture” that the above roots express, are more general than the the specific concepts expressed by *k✈el-, it may very well be that *k✈el- retains the earliest and most fundamental sense of this resonant series, as semantic development usually proceeds from the specific to the more general.
3. *\textit{kvel}— ‘Turn, turn the earth (i.e. plow, cultivate), spin (i.e. manufacture yarn), wheel, spindle, lead to pasture’

Grk περι-τέλλομαι ‘move in a circle,’ OE \textit{hwēol} ‘wheel,’ NE \textit{wheel}, Grk κύκλος ‘circle, wheel,’ πολέω ‘turn or rotate,’ πόλος ‘the pole or axis of the celestial sphere, the center of a circular threshing floor, the vault of heaven’ (from the circular movement of the stars), αἰπόλος ‘goat herd,’ Skt cárati ‘move oneself, wander, lead or drive to pasture,’ cakrá ‘wagon wheel, disk, pulley, potters wheel,’ kārṣū ‘furrow’ (where the earth has been turned), kārṣati ‘turn, turn over, plow,’ Av ārāna ‘field,’ TochB kokele ‘wagon’ (from the turning/spinning wheels), Lat colus ‘distaff, spindle, spinning,’ collum ‘neck’ (that which turns the head). —LIV 386; IEW 639-40; Watkins (2011) 46; Mallory and Adams (2006) 377; OLD 358; L&S 1436; Watkins 46; DELG 846; EIEC 606-7; Bomhard 510, 511, 516.

4. *\textit{kwer-pH}— ‘Turn, wrist, whirlpool’


Notes on possible outside root connections:
1. Bomhard 525 cites Afrasian \textit{k\textbar ir}, etc. ‘twist or twine together, tie, fasten, twist a rope, woven basket, encircle, wrap, surround, turn,’ Uralic \textit{kure}, etc. ‘twist, turn, plait, tie together, twine, braid, plait, stitch together.’

2. Bomhard 523 cites Afrasian \textit{kayyafa}, etc. ‘form, shape, fashion, mold, fit,’ Dravidian \textit{key}, etc. ‘do, make, create, act, work, perform,’ Altaic \textit{khi}, etc. ‘do, make, act perform.’

3. Bomhard 510 cites Afrasian \textit{k\textbar al}— ‘revolve, go around, roll, surround, encompass, encircle, circuit, turn, circle,’ Dravidian \textit{kulavu}, etc. ‘bend, curve,’ Altaic \textit{k\textbar ulo}, etc. ‘roll, turn, dance, walk around, turn around, bend in river, go round and round.’

**Conclusions:** Strong phonetic and semantic parallels to all three of these PIE forms are seen in the outside language families. A very credible example that suggests a differentiation into the attested resonant variants while still part of an ancient linguistic community that included at least PIE, Afrasian, Dravidian Uralic, and Altaic.
Table 54: *le(R)p- ‘Remove outer peel or bark, strip off, pare’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*lep-</td>
<td>1</td>
<td>ø</td>
<td>p</td>
<td></td>
<td>1</td>
<td>Peel, pare, strip off skin or bark</td>
</tr>
<tr>
<td>*leyp-</td>
<td>1</td>
<td>ʊ</td>
<td>p</td>
<td></td>
<td>2</td>
<td>Peel the skin off, strip off outer covering</td>
</tr>
</tbody>
</table>

1. *lep- ‘Peel, pare, strip off bark’

Grk λέπω ‘pare, peel, remove bark, strip,’ λέψαν ‘strip, peel, pare,’ Lat lapit ‘to cause pain or grief to someone.’ —LIV 413; OLD 1001; L&S 1040; IEW 678; EIEC 568.

2. *leyp- ‘Strip off skin or bark, peel, pare’

Lith lupū ‘peel, pare, strip off skin or bark,’ Lith laupūti ‘peel, pare, strip,’ Rus lupļjú ‘remove skin or bark, peel.’ —LIV 420; IEW 690-91; EIEC 567-68.

Table 55: *le(R)d- ‘Leave, let loose, set free, set in motion’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*leh₁d-</td>
<td>1</td>
<td>h₁</td>
<td>d</td>
<td></td>
<td>1</td>
<td>Leave, let be, set free, release, make weary, tired</td>
</tr>
<tr>
<td>*leid-</td>
<td>1</td>
<td>ū</td>
<td>d</td>
<td></td>
<td>2</td>
<td>Let loose, set free, set in motion, play</td>
</tr>
</tbody>
</table>

1. *leh₁d- ‘Leave, let be, set free, release, make weary, tired’

Goth letan ‘leave, let, let be, let alone, set free, release,’ Alb lodh ‘make weary, tired, exhausted, worn out,’ Goth lailot ‘left,’ Lat lassus ‘weary, tired.’ —LIV 400; IEW 666; Balg 247; OLD 1004.
2. *leid- ‘Let loose, set free, set in motion, play’

OLith léidmi ‘let loose, set free, set in motion,’ Lat lūdō ‘to play,’ Grk λίνδεσθαι ‘vie with, contend with,’ Alb lindet ‘was born,’ Lith láidyti ‘let loose, set in motion,’ Alb len ‘leave behind.’ —LIV 402; IEW 666.

\[
\text{\*m-}
\]

**Table 56: \*(s)me(R)k- ‘Moisture, wetness, milk’**

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref.</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*mak-</td>
<td>m</td>
<td>ø</td>
<td>k</td>
<td></td>
<td>1</td>
<td>Wet, moist, skin that forms on liquid</td>
</tr>
<tr>
<td>*māk-</td>
<td>m</td>
<td>ø</td>
<td>k</td>
<td></td>
<td>2</td>
<td>Knead, soak, steep</td>
</tr>
<tr>
<td>*merk-</td>
<td>m</td>
<td>r</td>
<td>k</td>
<td></td>
<td>3</td>
<td>Wet, moist, languid</td>
</tr>
<tr>
<td>*melk-</td>
<td>m</td>
<td>l</td>
<td>k</td>
<td></td>
<td>4</td>
<td>Milk, wet, damp, moisture</td>
</tr>
<tr>
<td>*(s)meųk-</td>
<td>(s)m</td>
<td>ū</td>
<td>k</td>
<td></td>
<td>5</td>
<td>Slippery, slime, swamp, mucus, rain, moist</td>
</tr>
</tbody>
</table>

1. *mak- ‘Wet, moist, puddle, pool’

Lith makonė ‘puddle, pool,’ OBulg mokrь ‘moisture,’ Russ mōknutь ‘make wet,’ Alb makë ‘skin that forms on liquid.’ —IEW 698.

2. *māk- ‘To make wet, soak, steep, squeeze’

Lat mācerō ‘make wet, soak, steep, bathe,’ Latv mākt ‘press,’ Czech mačkati press, squeeze.’ —EIEC 450; OLD 1057; IEW 698.

3. *merk- ‘Bog, swamp, soak, limp’

4. *melk- ‘Wet, damp, moisture, milk’


5. *(s)meuk- ‘Slick, slippery from wetness’

OIr mocht (< muk-to) ‘soft, tender,’ Lat mungō ‘blow nose, mucus,’ ON mugga ‘drizzle,’ Grk μύσσωμαι (< *muk-ie/o) ‘I blow my nose,’ Cymr mign ‘swamp, bog,’ ON mugga ‘drizzle,’ Latv mukls ‘pools of water.’ “These forms have been connected, farther from the sense central to this etymology, to forms meaning ‘to run away, slip away, flee’: Lith mûkti ‘slip away from,’ OInd muñcáti ‘looses, frees,’ [etc.] (EIEC 528).” —EIEC 527; IEW 744; LIV 443; Mallory and Adams (2006) 400; OLD 1287.

Table 57: *(s)me(R)d- ‘Melt, smear, daub, anoint, remedy, bad-smelling fat’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*(s)meld-</td>
<td>(s)m</td>
<td>l</td>
<td>d</td>
<td>1</td>
<td>Allow to melt, become soft, become liquid, dissolve, become digested</td>
<td></td>
</tr>
<tr>
<td>*(s)mejd-</td>
<td>(s)m</td>
<td>i</td>
<td>d</td>
<td>2</td>
<td>Smear, daub, anoint, filth, foul pollution, smudge, be dirty</td>
<td></td>
</tr>
<tr>
<td>*med-</td>
<td>m</td>
<td>ø</td>
<td>d</td>
<td>3</td>
<td>Salves, ointments, unguents, and potions; a person who prepares and administers these</td>
<td></td>
</tr>
<tr>
<td>*(s)merd</td>
<td>(s)m</td>
<td>r</td>
<td>d</td>
<td>4</td>
<td>Spreading stink, foul odor, make an evil smell, bad-smelling fat</td>
<td></td>
</tr>
</tbody>
</table>

1. *(s)meld- ‘Melt, become soft’

Ved vi mradā ‘soften,’ Grk μέλδω ‘allow to melt,’ ἀμέλδειν ‘τήκειν’ (Hsch.): “melt, bring clouds down in rain, dissolve, cause to waste or pine away, of putrefying flesh, fall away, of a corpse, of food in the digestive organs, come to
naught,” OE meltan ‘melt,’ OHG smelzan ‘melt,’ ON melta ‘melt, digest,’ OHG smelzen ‘melt, dissolve,’ NE melt, smelt. —LIV 431; IEW 718; Mallory and Adams (2006) 125; L&S 1096, 1786-87; de Vries 383; Watkins (2011) 55; Bosworth and Toller 677, 889; EIEC 378; NIL 482.

2. *(s)mejđ- ‘Smear, daub, anoint, filth, foul pollution’


Of OE smītan, Bosworth and Toller write, “Later English takes the word in the sense of strike.” The modern English spelling of this word is “smite.” The probable semantic development would be something like the following: The OE word smirels signifies unguent, ointment, unction, salve. Anciendly, such unguents were prepared by melting, rendering, and clarifying solid animal products (butter, fatty tissue, fat, beeswax, etc.) until they reached a clean liquid state. Then medicinal herbs were added and thoroughly mixed. The whole concoction was then allowed to cool and re-solidify, and finally daubed, smeared, or anointed onto the skin or wound where needed.

Later, when the smelting of metals came into use in PIE society, the process involved the same steps: First, dirty metal chunks and ore were melted in a cauldron in order to separate the pure metal from the dross, which was typically skimmed off the surface (a process called smelting). Then the clarified metal was poured into molds for further elaboration. The work of the metal-smith paralleled the earlier work of the unguent-maker/apothecary.

When the work of the metal-smith assumed greater importance in social life, the sense of the OE word, smītan, changed from that of applying unguents, to that of striking metal, for that is how gold, silver, copper, bronze and iron were worked into their final form. The smith smites the metal that he has melted and smelted.

The references here to filth, foul, miry pollution, defile, be dirty, etc., are because the process of rendering animal fat creates an unbearably foul stench. In addition, if these
unguents were applied to open wounds, say after a battle, the infected, gangrenous, putrid, rotting flesh would create an absolutely horrible smell.

3. *med- ‘Salves, ointments, unguents, potions; a person who prepares them’

Lat medeor ‘heal, cure, remedy, bring to health,’ medicus ‘doctor,’ medica ‘a female physician,’ medicābulum ‘a healing agent, restorative,’ medicāmentum ‘a substance administered to produce spec. effects upon the body, a remedy; a cosmetic, a dye,’ Grk Μηδὸς ‘god of medicine,’ Av vi-madayā ‘act as healer.’ —LIV 423; IEW 705-06; Watkins (2011) 53; Mallory and Adams (2006) 195, 201,317-18; OLD 1087-88; EIEC 261-62; Benveniste 406-11.

Most authorities place these attestations with a root that signifies “to measure.” This fails to satisfy on semantic grounds, since medicine in the ancient world was not the quantitative science that it is today. Typically it involved magic rituals, prayers, and herbal remedies that were prepared and administered by a shaman or other tribal healer.

Mallory and Adams write, “There are two words of Proto-Indo-European status that refer to ‘healing.’ *h₁/əs- […] finds cognates in Anatolian indicating ‘salving’ or ‘anointing’ (Hit iski(ya)-) while *med- (which gives Lat medicus ‘doctor’, Av vi-mad- ‘healer’) is probably a specialized development of PIE *med- ‘measure’.”

Mallory and Adams are very likely correct in their reasoning about the concept ‘healing’ arising from concepts for ‘salving’ or ‘anointing,’ but I would suggest that the source for *med is more likely to be found in a root connected directly with the process for producing such remedies, rather than in the abstract concepts of weighing and measuring.

4. *(s)merd- ‘Stink, foul odor, evil smell, bad-smelling fat’

Lith smardyti ‘makes an evil smell,’ OCS o-smraždq ‘a spreading stink,’ Lith smirdžiu ‘to stink,’ OCS smroždq ‘a putrid smell, stink,’ Lat merda ‘ordure,
excrement, dirt, dung.’ OLith smarstas ‘stink, bad-smelling fat.’ — LIV 570; IEW 970; OLD 1102.

For an explanation of the relation of this root to the overall resonant series, see the commentary to #2 above.

Table 58: *me(R)h₂ — ‘Strike, crush, grind, diminish, pulverize, destroy’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*melh₂-</td>
<td>m</td>
<td>l</td>
<td>h₂</td>
<td>1</td>
<td></td>
<td>Pound, crush, pulverize, rub, grind, mill</td>
</tr>
<tr>
<td>*melh₂-y-</td>
<td>m</td>
<td>l</td>
<td>h₂</td>
<td>2</td>
<td></td>
<td>Crush, grind, press</td>
</tr>
<tr>
<td>*merh₂-</td>
<td>m</td>
<td>r</td>
<td>h₂</td>
<td>3</td>
<td></td>
<td>Crush, pulverize, beat, strike</td>
</tr>
<tr>
<td>*menH-</td>
<td>m</td>
<td>n</td>
<td>H</td>
<td>4</td>
<td></td>
<td>Tread, stamp, press together, break, crush</td>
</tr>
<tr>
<td>*meH-</td>
<td>m</td>
<td>j</td>
<td>H</td>
<td>5</td>
<td></td>
<td>Diminish, harm, injure, damage, hurt, lessen</td>
</tr>
</tbody>
</table>

1. *melh₂- ‘Pound, crush, pulverize, rub, grind, mill’

Arm malém ‘beat to pieces, pound, crush, pulverize,’ Lat molō ‘grind in a mill,’ Umb maletu ‘ground, milled,’ OIr melid ‘ground, crushed, milled,’ ON mylja ‘rub away, crush, pulverize,’ NE meal, OCS meljo ‘crush, grind, mill,’ CLuv malw, maljū- ‘crush, break,’ Goth malan ‘ground, crushed, milled,’ Grk μύλον ‘mill,’ Lith malė ‘ground, crush, pulverize.’ — LIV 432; IEW 716; CLL 132; OLD 1129; Buck 338; L&S 1152; Bomhard 887; EIEC 247.

2. *melh₂-y- ‘Crush, grind, press’

Goth ga-maltjan ‘press,’ ON molva ‘crush, grind,’ TochA maljavō ‘press.’ — LIV 433; IEW 717; Bomhard 878.

3. *merh₂- ‘Crush, pulverize, beat, strike’
Ved *ṛṇāti* ‘crush, grind, mill, destroy,’ Grk *μαραίνω* ‘fight, pulverize, destroy,’
Alb *merr* ‘take, grab,’ Hit *marṛitta* ‘break up, reduce to small pieces, crush, grind,
pulverize,’ ON *merja* ‘beat, batter, pound, strike.’ —LIV 440; IEW 735-36;
Mayrhofer 2.319; L&S 1081; Bomhard 893.


Lith *minù* ‘tread, stamp, break,’ ChSlav *mynq* ‘tread, knead, press, squeeze,’ Skt *carma-mnās* ‘refine, polish, thrash,’ Cymr *mathru* ‘stamp with the feet,’ Bret *mantra* ‘stamp,’ MIr *men* ‘meal, dust,’ Rus *mnu, mjatv* ‘break, knead, stamp, crush, crumble.’ —LIV 438; IEW 726; ALEW 755.

5. *meH*– ‘Diminish, harm, injure, damage, hurt, lessen, make smaller’

Ved *mināti* ‘diminish, harm, injure, damage,’ Grk *μινύθω* ‘lessen, diminish,
curtail, become smaller,’ Lat *minuere* ‘lessen, diminish, reduce,’ *minus* ‘smaller,’
Osc *menvum* ‘diminish,’ Corn *minow* ‘make smaller, diminish,’ TochAB *mi-* ‘hurt, harm.’ —LIV 427; IEW 711; Mallory and Adams (2006) 319; EIEC 351.

Notes on possible outside root connections:
1. Bomhard 887 cites Afrasian *móōldó*, etc. ‘grinding stone,’ Uralic *molv*- etc. ‘grind, crush, break, smash, crumb, little bit, piece, morsel, crumble away,’ Proto-Altaic *mole*- etc. ‘rub, crush, grind, wear out, weak, weary, tired, destroy, ruin,’ Eskimo *mulqa*- ‘be careful, gentle.’
2. Bomhard 878 cites Afrasian (Proto-Semitic) *mal-al-, etc. ‘be or become worn out, weak, tired, weary,’ (Ethiopic) *malala, etc. ‘plane a board, smooth with a plane, rub smear,’ anoint, grease, smear,’ Dravidian (Tamil) *mel, etc. ‘soft, tender, slowly, gently, woman, weak, poor, cause much suffering,’ Proto-Chuk-Kamch. *mal, etc. small, fine, supple, soften.’
3. Bomhard 893 cites Dravidian *murj, etc. ‘break, be defeated, perish, cease to exist, cut, discontinue, wound, destroy, crushing destruction, break in pieces, crack,’ Proto-Uralic *mura-, etc. ‘break, shatter, crumb, fragment, crumble, burst, beat to pieces, split apart,’ Eskimo *mukiq-, etc. ‘sharpen, grind, whet.’

**Conclusion:** PIE forms with resonants in –r and –l show probable cognates in outside language families, suggesting that these variants were formed while still in linguistic contact with them.

<p>| Table 59: <em>(s)me(R)</em>– ‘Remember, think, worry, say’ |
|----------------|--------|-----|-----|---|-----------------|</p>
<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
</table>

86
HAYNES — RESONANT VARIATION IN PROTO-INDO-EUROPEAN

<table>
<thead>
<tr>
<th>*(s)mer-</th>
<th>(s)m</th>
<th>r</th>
<th>1</th>
<th>Thought, remember, worry about, mourn, care</th>
</tr>
</thead>
<tbody>
<tr>
<td>*men-</td>
<td>m</td>
<td>n</td>
<td>2</td>
<td>Think about, feel, remember, believe, speak, rage, yearn</td>
</tr>
<tr>
<td>*mn-eh₂</td>
<td>m</td>
<td>n</td>
<td>3</td>
<td>Think about, remember, experience, chosen</td>
</tr>
<tr>
<td>*mejn-o-</td>
<td>m</td>
<td>j</td>
<td>n</td>
<td>Opinion, desire, bemoan, remorse, think, say</td>
</tr>
<tr>
<td>*ml-euh₂</td>
<td>m</td>
<td>l</td>
<td>5</td>
<td>Know, say, speak, bemoan, express, utter</td>
</tr>
<tr>
<td>*mel-</td>
<td>m</td>
<td>l</td>
<td>6</td>
<td>Think, suppose, worry about, thought, idea, speech, quarrel</td>
</tr>
</tbody>
</table>

1. *(s)mer-  ‘Thought, remember, worry about, mourn, care’


2. *men-  ‘Think, feel, remember, believe, speak’

OAv maṇtā ‘think about,’ Ved maṇutē ‘think, feel, remember,’ Grk μαίνομαι ‘rage, rave, be consumed with madness,’ μέμονα ‘yearn,’ Lat re-miniscor ‘remember,’ comminisci ‘sense, think through,’ moneō ‘remind, warn, admonish,’ OIr -mainethar ‘to mean, to believe,’ Hit mēmai ‘speak,’ Goth man ‘to mean, to remember,’ Lith miniū ‘think, remember,’ OCS mьnjо ‘to believe, to mean.’ — LIV 435; IEW 726-28; EIEC 575; Mallory and Adams (2006) 322; Bomhard 856.

3. *mn-eh₂  ‘Think about, remember, experience’

Grk μνάομαι ‘think about, remember, woo for a bride,’ μνησκεται ‘thought, chosen, remembered,’ Late Ved ā-manati ‘chosen,’ poss. CLuv manāti ‘see, experience,’ — LIV 447; IEW 726-27; CLL 135; L&S 1138.

4. *mejn-o-  ‘Opinion, desire, bemoan, remorse, think, say’

5. *ml-euh₂- ‘Know, say, speak, bemoan, express’

Ved bráviti ‘say, speak,’ bruve ‘is known,’ OAv mraomi ‘say, speak,’ YAv mruuiē ‘is said,’ TochB palwaŋ ‘bemoan,’ Rus mólvti ‘say, express,’ Czech mluviti ‘utter.’ —LIV 446; EIEC 535-36.

The semantic pairing of “think/say” is very common throughout PIE.

6. *mel- ‘Think, suppose, worry about, thought, idea, speech, quarrel’

CLuv mali-/malai-, ‘think, suppose,’ māli ‘thought, idea,’ Grk μέλω ‘to be an object of care or thought, to weigh on one’s soul, to worry about, to take an interest in, to be in one’s thoughts,’ ON māl ‘speech, legal dispute,’ OE mǣl ‘speech, quarrel.’ —CLL mali 132; L&S 1100; DELG 658-59; IEW 720; EIEC 125; Bomhard 848.

Notes on possible outside root connections:
2. Bomhard 856 cites Proto-Afrasian *man-, etc. ‘count, reckon, consider, think, portion, share, number, allot, fortune, mind, to know, word, speech, intention.’ Dravidian maṇi, etc. ‘speak, scold, abuse, utter, petition, request, prayer, word,’ Proto-Uralic *man-, etc. ‘consider, recount, say, speak, warn, admonish, curse, bewitch, wish evil to, ruin, slander, appoint, order, legend, saga, myth, repeat,’ Proto-Altaic *mana-, etc. ‘learn, try, strive.’

6. Bomhard 848 cites Proto-Afrasian *mal-, etc. ‘do good, be pleasant, be efficient, beneficent, excellent, potent, trusty, well-disposed, devoted, splendid, costly, lavish, famous,’ Dravidian mālīmi ‘youthful friendship, familiarity, love, affection,’ Etruscan mlac ‘beautiful,’ Proto-Chuk-Kamch *mæl-, etc. ‘good, good weather, dear, easy, well, strongly, cure, treat, get better.’

Conclusion: Root 2 shares strong phonetic and semantic parallels with the outside language families. Root 6 differs slightly semantically, but still within range of the semantic field. These two resonant variants were likely formed while in contact with the outside language families.

**Table 60:** *me(R)d- ‘To be happy, satisfied, drunk, joyful’
Table 61: *me(R)g- ‘To deceive, charm, cheat; guile, trickery, thief, dice cheat’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*meng-</td>
<td>m</td>
<td>n</td>
<td>g</td>
<td></td>
<td>1</td>
<td>Deceit, guile, spell, magic charm, trickery, illusion</td>
</tr>
<tr>
<td>*meug-</td>
<td>m</td>
<td>ʊ</td>
<td>g</td>
<td></td>
<td>2</td>
<td>Concealed, smothered, dice cheat, thief, highwayman</td>
</tr>
</tbody>
</table>

1. *meng- ‘Deceit, guile, spell, magic charm, trickery, illusion’


Notes on possible outside root connections:
1. Bomhard 876 cites Proto-Afrasian *mat’, etc. ‘be or become wet, moist, rain, be soaked by rain, be rotten, dew.’

**Conclusion**: Latin madeō ‘be wet or sodden, satisfied, drunk’ parallels the Afrasian terms, at least with respect to the ‘wet and sodden’ elements, suggesting that these may be distant cognates.
2. *meyg- ‘Concealed, smothered, dice cheat, thief, highwayman’

OIr formúchtha, for-mūigthe ‘smothered, concealed,’ Lat muger ‘dice cheat,’ ME micher ‘thief,’ OHG mühhari ‘highwayman.’ — EIEC 154; IEW 743-44.

### *n-

**Table 62:** *ne(R)- ‘Bow, bend, incline, nod, beckon’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*nem-</td>
<td>n</td>
<td>m</td>
<td></td>
<td></td>
<td>1</td>
<td>Bow, bend, bow down</td>
</tr>
<tr>
<td>*ney-</td>
<td>n</td>
<td>y</td>
<td></td>
<td></td>
<td>2</td>
<td>Bend, bow the head, incline, nod, beckon</td>
</tr>
</tbody>
</table>

1. *nem- ‘Bow, bend, bow down’

Ved námate ‘bend, bow,’ YAv nəmaite ‘bow down,’ TochB nmetār ‘bow oneself,’ Ved nānāma ‘bend over, bow.’ — LIV 453; IEW 764; Monier-Williams 528.

2. *ney- ‘Bend, bow the head, incline, nod, beckon’

Lith niausiù ‘bend, bow, bow the head,’ Grk νεύω ‘incline, nod, beckon, bow, bend forward,’ Lat ad-nuo ‘beckon, nod, bow,’ Ved āti nāvayet ‘shall bow.’ — LIV 455; IEW 767; L&S 1171; OLD 51; EIEC 394.

### *p-

**Table 63:** *(s)pe(R)- ‘Spin, twist, weave, wind, coil’

This group of roots shows variations on the concept: spun thread and its resulting woven cloth, winding thread, moving in a revolving motion, and winding up cloth in flat segments (folding).

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Ref.</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*(s)pen-</td>
<td>(s)p</td>
<td>n</td>
<td></td>
<td>1</td>
<td>Spin, thread, weave, toil</td>
</tr>
</tbody>
</table>
1. *(s)pen-  ‘Spin, weave, thread’


Stretching the combed raw fleece is part of the process of spinning (see photo of spinner stretching and spinning raw fiber).

2. *sper-, (s)per-  ‘Turn, twist, wrap around, band, ribbon, coil, surround’


Traditionally, the initial *s- in this root is not seen as the s-mobile, but I would argue that *peri (see below #4) is a related form.

3. *pān-  ‘Weave, garments, wind up thread, cloth, flag’

Grk πηνος ‘woven fabric,’ πήνη ‘thread on the bobbin in the shuttle,’ πηνιον ‘wound-up thread, bobbin, spool,’ πηνιζομαι ‘wind thread off a reel for the woof,’ Lat pannus ‘piece of cloth, rag,’ Goth fano ‘cloth,’ OE fana ‘flag, cloth.’ — IEW 788; de Vries 111; OLD 1290; L&S 1401; DELG 865; EIEC 569.
4. *peri- ‘Around, all around, round about’

Skrt pāri ‘round, around, about, round about,’ pari-karoti ‘to surround,’ pari-krit ‘to wind round,’ pari-kṛishati ‘to draw a circle,’ pari-kramya ‘walk around, circumambulate,’ pari-krānti ‘revolution,’ pari-kṣit ‘dwelling or spreading around,’ pari-kṣipyā ‘to wind round, to surround, encircle, embrace,’ pari-khā ‘a moat, ditch, trench around a town,’ pari-dhi ‘an enclosure, fence, wall, any circumference or circle’ pari-bhrāmya ‘turn or whirl around, move in a circle, round, revolve, rotate,’ Grk περί ‘round about, all round, extension in all directions as from a center, all round,’ περικάθημαι ‘to be seated all around, to surround and besiege a town, to blockade with ships all around,’ Lith pėri-jousti ‘to gird around.’ —Mallory and Adams (2006) 289; IEW 810; Monier-Williams 591-598; L&S 1366-94; Bomhard 119.

Traditionally this preposition is grouped with for, pro, per, etc. as in forward, progeny, permit, but its connotations are significantly different. To go forward is quite distinct from going around something, and so this is better seen as a variation of *(s)per- ‘turn, twist, wrap around.’

5. *pel- Woven cloth, gown, folded cloth (double/triple folded, etc.)

Grk πέ-πλος ‘any woven cloth used for a covering; sheet, carpet, curtain, veil; a cloth laid over the face of the dead; upper garment or mantle in one piece laid by women,’ πέπλυφος ‘weaver of πέπλοι,’ πέπλωμα ‘robe, garment,’ (“The word πέπλος would be a reduplicated form with zero grade, cf. κύκλος.” DELG 852), Alb palē ‘fold,’ ON fel ‘fold,’ faldr ‘a woman’s head covering, fold,’ feldr ‘coat,’ MHG valte ‘fold, winding, corner,’ Skt puṭati ‘to fold, to envelope,’ puṭa ‘a cloth worn to cover the private parts, fold, pocket,’ OCS pelena, Russ pelenā ‘diaper, cloth, cover,’ Lat. -plex (duplex, triplex) ‘two-fold, three-fold, etc.’ Lat palla ‘a rectangular mantle, worn esp. as an outdoor garment by women or used
This root is traditionally glossed as *fold*, but that would seem to be a secondary meaning. The primary sense is ‘spun and woven cloth,’ which is then folded for storage or transport.

Notes on possible outside root connections:

4. Bomhard 119 cites Dravidian *piri*, etc. ‘twist, strand, wisp, curl, turn, cord, twine, rope, spiral, string,’ Proto-Uralic *pire*, etc. ‘round, any round object, around, round about, circumference, periphery, extent, compass, circle, district, ring, wheel,’ Proto-Altaic *p‘erkV*, etc. ‘tie round, surround, bind, wrap, envelop, girdle, go round, turn, move around, revolve, rotate, spin a spindle,’ Proto-Eskimo *pιðar-,* etc. ‘braid, weave, twisted sinew thread.’

5. Bomhard 93 cites Proto-Kartvelian *pal-,* etc. ‘hide, bury, grave,’

**Conclusion:** Root 4 shares strong phonetic and semantic parallels with the outside language families—a very likely cognate. The Kartvelian form cited by Bomhard with respect to Root 5 would be cognate only if ON *fela* ‘to hide’ and other related Germanic forms belong here, which is not certain.

### Table 64: *p(R)eu- ‘Breathe, breathe heavily, pant, lungs, wind, spirit’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>preu-th₂-</em></td>
<td>p</td>
<td>r</td>
<td></td>
<td></td>
<td>1</td>
<td>Pant, blow, breathe heavily, snort, foam, froth</td>
</tr>
<tr>
<td>*pney-</td>
<td>p</td>
<td>n</td>
<td></td>
<td></td>
<td>2</td>
<td>Blow, breathe heavily, pant, snort, sneeze, spirit</td>
</tr>
<tr>
<td><em>pley-mon-</em></td>
<td>p</td>
<td>l</td>
<td></td>
<td></td>
<td>3</td>
<td>Lungs, float, swim, sail</td>
</tr>
<tr>
<td><em>pei-</em></td>
<td>p</td>
<td></td>
<td></td>
<td>ø</td>
<td>4</td>
<td>Pant, gasp, puff, wheeze, lungs, breath, wind, soul, spirit</td>
</tr>
</tbody>
</table>

1. *preu-th₂-* ‘Pant, blow, breathe heavily, snort, foam, froth’

Ved *próthati* ‘pant, blow, breathe heavily, gasp, snort,’ *pra-próthati* ‘pant, blow up, inflate,’ YAv *fraʊθat.aspa* ‘with snorting horse,’ OE *ā-frēðan* ‘foam, froth,’ ON *frauð* ‘foam.’ —LIV 494; IEW 810; Monier-Williams 711; Bosworth and Toller 27; de Vries 140.
2. *pneu- ‘Blow, breathe heavily, pant, snort, sneeze, puff, spirit’

Grk πνέω ‘blow, breathe, draw breath, fragrance,’ πνέυμα ‘blast, wind, breath, spirit, soul,’ ON fnýsa ‘pant, blow, breathe heavily, snort,’ OE fnēosan ‘sneeze,’ fnæst ‘puff, blast, breath.’ —LIV 489; IEW 838-39; L&S 1424-25; de Vries 136; Bosworth and Toller 296.

3. *pley-mon- ‘Lungs,’ *pleu- ‘Float, swim’


PIE *pleu- ‘swim, float,’ has been seen as the source for Latin pulmō ‘lungs’ etc., but this is unlikely. Names for parts of the body generally do not derive from abstract concepts, rather the contrary is much more common. We say, for example, “the mouth of the river,” “the foot of the mountain,” “the head of the department,” “the heart of the artichoke.” For this reason, the concept “floating” is much more probably derived from the notion: breathe air into the lungs.

4. *peu- ‘Pant, lungs, breath, wind, spirit’

Skt phupphukāraka ‘pant, gasp, puff, wheeze,’ phuphusa ‘lungs,’ Arm (h)ogi ‘breath, spirit, soul,’ MIr ūan ‘foam,’ Grk φύσα ‘breath, wind, blast, bellows,’ Latv pūga ‘squall of wind.’ —IEW 847; Mallory and Adams (2006) 386; L&S 1963; EIEC 72; Bomhard 137.

Notes on possible outside root connections:

4. Bomhard 137 cites Proto-Afrasian *fuw-, etc. ‘puff, blow, exhale, inflate, breath, wind, diffuse an aroma, fragrant emanation, catch one’s breath, smell,’ Dravidian pūcči, etc. ‘fart,’ Proto-Kartvelian *pu-, etc. ‘swell up, inflate, rise (dough), boil, seethe, blow at somebody, whiff (puff),’ Proto-Uralic *puw-, etc. ‘blow,’ Proto-Eskimo puwa-, etc. ‘swell, inflate, lung, bubble, gas, air, be fat, ball or balloon-like thing, swim bladder, become swollen with air.’

Conclusion: If not onomatopoeic, then this root would have clear parallels to the outside language families cited.
Table 65: *pe(R)- ‘Buy, sell’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref.</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*per-</td>
<td>p</td>
<td>r</td>
<td></td>
<td>1</td>
<td>Sell, barter, exchange</td>
<td></td>
</tr>
<tr>
<td>*pel-</td>
<td>p</td>
<td>1</td>
<td></td>
<td>2</td>
<td>Sell, profit,.booty, bargains</td>
<td></td>
</tr>
</tbody>
</table>

1. *per- ‘Sell, barter, exchange’

OIr *renaid ‘sells, barters, exchanges,’ Lat *inter-pres ‘go-between,’ *pretium ‘price,’
Grk πέρνημι ‘sell,’ πόρνη ‘prostitute,’ Av *pairyante ‘they compared,’ NE *price. —
Mallory and Adams (2006) 273; L&S 1394-95; DELG 856; LIV 474; IEW 817;
Bomhard 98; Benveniste 98-101.

2. *pel- ‘sell, profit, booty, bargains’

IEW 804; EIEC 185; Benveniste 98-101.

Notes on possible outside root connections:
4. Bomhard 98 cites Proto-Afrasian *par-, etc. ‘separate, divide, break, scatter, judge, deliver, set free,
sever, distribute, rend, burst, break out or open (blister or boil), crush, crumble, cut, tear, smash,’
Dravidian pari, etc. ‘separate, sunder, break off, destroy, cut, tear, rend, piece, portion, split, cleave,’
Uralic *päre, etc. small piece, fragment, splinter, chip, crumb, bit,’ Altaic farsi, etc. ‘piece, strip, cut or make
in pieces,’ Chuk-Kamch *par-, etc. ‘pull tear, pluck, rip out, pull out by root, harvest, peel, take off.’
Conclusion: These outside forms are somewhat distant semantically.

Table 66: *(s)pe(R)s- ‘Breathe, blow, blast, fragrance, soul, spirit’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref.</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*(s)pej-</td>
<td>(s)p</td>
<td>i</td>
<td>s</td>
<td>1</td>
<td>Breathe, blow, soul, spirit, whistle</td>
<td></td>
</tr>
<tr>
<td>*pes-</td>
<td>p</td>
<td>ø</td>
<td>s</td>
<td>2</td>
<td>Blast, breathe, blow, fragrance</td>
<td></td>
</tr>
</tbody>
</table>

1. *(s)pej-s- ‘Breathe, blow, soul, spirit, whistle’
Lat *spîrō* ‘breathe, blow, respire,’ *spîritus* ‘breath, air, spirit, soul, divine inspiration,’ OCS *piskati* ‘whistle,’ Skt *picchorā* ‘flute,’ OE *fisting* ‘play pan pipes, fart,’ TochA *pis*- ‘blow an instrument.’ —IEW 796; Mallory and Adams 385-86; OLD 708, 1805-06; Bosworth and Toller 289; EIEC 72.

2. *pe-s-* ‘Blast, breathe, blow, fragrance’


<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>peth₂-</em></td>
<td>p</td>
<td>ø</td>
<td>th₂</td>
<td></td>
<td>1</td>
<td>Spread out, stretch out the arms, be open, extend in space</td>
</tr>
<tr>
<td><em>pleth₂-</em></td>
<td>p</td>
<td>l</td>
<td>th₂</td>
<td></td>
<td>2</td>
<td>Spread, extend, become larger or wider, broaden, spread itself out</td>
</tr>
</tbody>
</table>

1. *peth₂-* ‘Spread out, stretch out the arms, be open, extend in space’

Grk *πίτνημι* ‘spread out, stretching out the arms, open,’ Lat *pandō* ‘to spread out, splay, extend the hands, open, open out,’ Osc *patensíns* ‘open,’ Lat *pateō* ‘to be open, to extend in space, cover a wide field.’ —LIV 478; IEW 824-25; L&S 1409; OLD 1289; Buck 227, 321; EIEC 539; OLD 145, 1307; Bomhard 121.

2. *pleth₂-* ‘Spread, extend, become larger or wider, broaden, spread out’

Ved *práthate* ‘spread, extend, become larger or wider,’ YAv *fraθa.sauuah-* ‘the spreading power,’ Lith *plečiù* ‘to broaden, spread itself out,’ Grk *πλατύς* ‘broad, wide.’ —LIV 486; IEW 833; Monier-Williams 678; Bomhard 88; EIEC 133, 539.

Notes on possible outside root connections:
1. Bomhard 121 cites Proto-Afrasian *pit-, etc. ‘open, untie, loosen, release, free, forgive, be wide, spacious, open, broad, widen,’ Dravidian pituiku, etc. ‘protrude, bulge, gush out, press out, squeeze out, blow up as a bladder, milk (a cow), open up, burst open, cause to burst, pinch,’ Proto-Eskimo *pito-, etc. ‘come up, rise (sun), come into view or existence, sprout, flower, go out, grow, become, make.’

2. Bomhard 88 cites Proto-Afrasian *pal-, etc. ‘flat, level, broad, even, wide, spacious,’ Dravidian həlu, etc. ‘thinned, rare, not dense, sparse, slight, contemptible, thinness, transparent,’ Proto-Altaic *phāla, etc. ‘field, level ground, meadow, floor, threshing floor, clearing, open space, plain,’ Proto-Chuk-Kamch *pəɣə(ra)-, etc. ‘flat, flatten, bend down close to the ground, smooth out, huddle up in a ball.’

**Conclusion:** Root 1 shows parallels between the PIE and outside forms which suggest that they may be distant cognates. Semantically, root 2 shares concepts of “open, wide, spacious” with the PIE forms, but phonetically lack of final consonant leaves too much uncertainty to draw definite conclusions.

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**Table 68:** *(s)pe(R)- ‘Nourish, take food or drink, suck, care for, feed, be full, thrive’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*peh₂(i)-</td>
<td>p</td>
<td>h₂</td>
<td></td>
<td></td>
<td>1</td>
<td>Protect, preserve, feed, pasture animals, maintain, grow rich or fat</td>
</tr>
<tr>
<td>*pen-</td>
<td>p</td>
<td>n</td>
<td></td>
<td></td>
<td>2</td>
<td>Feed, fatten, fodder, food, provisions, stock of a household</td>
</tr>
<tr>
<td>*peh₂(i)-</td>
<td>p</td>
<td>h₃</td>
<td></td>
<td></td>
<td>3</td>
<td>Drink, suck, sip, swallow, enjoy, feast upon, partake of a meal</td>
</tr>
<tr>
<td>*(s)peh₁(i)-</td>
<td>(s)p</td>
<td>h₁</td>
<td></td>
<td></td>
<td>4</td>
<td>Be satisfied, thrive, prosper, have success, be filled, get full</td>
</tr>
<tr>
<td>*(s)peh₂-</td>
<td>(s)p</td>
<td>h₂</td>
<td></td>
<td></td>
<td>5</td>
<td>Suck, absorb, draw in, (of a female) to be sucked, derive, enjoy</td>
</tr>
<tr>
<td>*pleh₁-</td>
<td>p</td>
<td>l</td>
<td>h₁</td>
<td></td>
<td>6</td>
<td>Have the belly full, fill, satisfy, glut, be filled, have enough</td>
</tr>
</tbody>
</table>

---

1. *peh₂(i)- ‘Protect, preserve, feed, pasture animals, grow rich or fat’

Ved pāti ‘to watch, keep, preserve, protect, defend,’ Lat pāscō ‘to feed, to pasture, keep, rear animals, feeding the young, provide food for, maintain, support, grow rich or fat on, nurture, gratify hunger,’ TochB paskentrā ‘protect, safeguard, care
for,’ Hit paḥhasmi ‘I care for, I protect,’ OCS pasq ‘graze, guard.’ —LIV 460; IEW 787, 839; Monier-Williams 613; OLD 1304-05; Bomhard 83.

2. *pen-  ‘Feed, fatten, fodder, food, provisions, stock of a household’

Lith penû, (pené’ti) ‘feed, fatten,’ pėnas ‘feed, fodder,’ Lat penus ‘food, provisions, the stock of a household.’ —LIV 471; IEW 807; OLD 1326; Bomhard 116; EIEC 199.

3. *peh₁(i)-  ‘Drink, suck, sip, swallow, enjoy, feast upon, partake of a meal’


4. *(s)peh₂(i)-  ‘Be satisfied, thrive, prosper, have success, be filled, get full’


5. *(s)peh₂-  ‘Suck, absorb, draw in, (of a female) to be sucked, derive, enjoy’

Grk σπάω ‘draw in, suck in, suck, (of a female) to be sucked, draw breath, absorb, derive, enjoy,’ Arm hanem ‘draw, pull.’ —LIV 575; IEW 982; L&S 1625.

6. *pleh₁-  ‘Have the belly full, fill, satisfy, glut, be filled, have enough’

Ved ápiprata ‘have the belly full,’ Grk πίμπλημι ‘fill, full, satisfy, glut, to be filled, satisfied, have enough of a thing,’ Arm lnoum ‘full,’ Alb m-blon ‘fill.’ —LIV 482; IEW 798-800; Mallory and Adams (2006) 319; L&S 1405; Bomhard 90.

Notes on possible outside root connections:
1. Bomhard 83 cites Proto-Afrasian *paḥ-, etc. ‘take into the mouth, eat, bite, serve up portions of food.’
2. Bomhard 116 cites Dravidian pēn-, etc. ‘treat tenderly, cherish, foster, protect, regard, esteem, honor, care for, nurture, protecting with loving care, nourish, support, rear, fatten, increase,’ Proto-Uralic *punva-, etc. ‘watch over, protect, preserve, keep, hold, value, herdsman, to pasture, to herd.’
3. Bomhard 90 cites Dravidian pala-, etc. ‘many, several, assembly, be multiplied, to breed, to rear,’ Proto-Uralic *palys-, etc. ‘much, dense, tight, thicken, swell up, fester, many,’ Proto-Altaic pʰîle, etc. ‘to be left
over, surplus, excess, remain, be enough, sufficient,’ Proto-Chuk-Kamch derivational affix *pəl-
‘completely, intensely, well, to swell, to increase, big.’

**Conclusion:** All three of these roots show quite plausible connections to outside language families, suggesting that the differentiation of the resonants occurred before the separation of the ancient language stocks.

#### Table 69: *pe(R)k*— ‘Pick, pluck, shear, tear off’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>pek</em></td>
<td>p</td>
<td>ø</td>
<td>k</td>
<td></td>
<td>1</td>
<td>Pick, pluck, pull, shear, comb, card, and plait wool</td>
</tr>
<tr>
<td><em>perk</em></td>
<td>p</td>
<td>r</td>
<td>k</td>
<td></td>
<td>2</td>
<td>Pain, ache, suffering, to be painful</td>
</tr>
<tr>
<td><em>plehk</em></td>
<td>p</td>
<td>l</td>
<td>h1</td>
<td>k</td>
<td>3</td>
<td>To skin, to flay, peel off the skin, tear off, strip off</td>
</tr>
</tbody>
</table>

1. *pek*— ‘Pick, pluck, pull, shear, comb or card wool; plait, braid or twist it’

Grk πέκω ‘shear, comb, or card wool,’ Lith pešu ‘pluck, pull, pick,’ Lat pectō ‘to comb, to card wool,’ OHG fehtan ‘fight, fence,’ Arm hiwsem ‘plait, braid, twist, wreath.’ —LIV 467; IEW 797; L&S 1356; OLD 1315; EIEC 570.

2. *perk*— ‘Pain, ache, suffering, to be painful’

Lith peřšti ‘pain, ache, suffering, to be painful.’ —LIV 475; IEW 821; ALEW 875; Mallory and Adams (2006) 139.

Attempts to link this root with “furrows” or “pigs” (porcus) are dubious due to the semantic distance involved. Probably those stem from a separate root. On the other hand, pain and suffering are closely linked to plucking wool, which, long before the availability of metal shears, would have been a painful experience for the fleece-bearing animals.

3. *plehk*— ‘To skin, to flay, peel off the skin, tear off, strip off’

ON flá ‘to skin, to flay,’ OE flēan ‘pull off the skin, flay,’ Lith plēšiu ‘tear off, peel off, strip off.’ —LIV 483; IEW 835; Bomhard 132.
Notes on possible outside root connections:
3. Bomhard 132 cites Proto-Afrasian *fil-*, etc. ‘cleave, split, divide, canal, stream, hew, hollowed, ravine, cut open, break to pieces,’ Dravidian *piḷ-*, etc. ‘burst open, be rent or cut, break to pieces, divide, crush, tear apart, split, crack,’ Proto-Kartvelian *plet-*, etc. ‘tear apart, rip apart, be worn out, tear to pieces, pluck,’ Proto-Uralic *pilъ-*, etc. ‘split, cleave, cut asunder, divide, crack off, splinter, small piece of wood, little bit, fragment,’ Proto-Eskimo *pilъ-* etc. ‘to butcher, slit, cut into, cut or saw up, knife for butchering.’

**Conclusion:** This root shows close semantic parallels to the outside language families, but their lack of final consonant makes the connection uncertain.

**Table 70: **

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>pres-</em></td>
<td>p</td>
<td>r</td>
<td>ø</td>
<td>s</td>
<td>1</td>
<td>Sprinkle, spray, squirt, spit, splatter, rain</td>
</tr>
<tr>
<td><em>preuš</em></td>
<td>p</td>
<td>r</td>
<td>u</td>
<td>s</td>
<td>2</td>
<td>Spray, spit, sprinkle, wash, dewdrop, frost</td>
</tr>
</tbody>
</table>

1. *pres-*  ‘Sprinkle, spray, squirt, splash, spit, splatter, rain’

Ved *pišant* ‘sprinkle,’ TochB *pārsāte* ‘squirt, spray, sprinkle,’ Hit *papparaszi* ‘spatter, splash, spurt,’ Lith *purškiū* ‘spray, sprinkle, spit,’ OCS *ras-prašo* ‘burst, blast,’ Czech *pršín* ‘spit, splatter, sprinkle, rain.’ —LIV 492; IEW 823; Monier-Williams 647.

2. *preuš*  ‘Spray, spit, sprinkle, wash, dewdrop, frost’


Notes on possible outside root connections:
2. Bomhard 99 cites Proto-Afrasian *par-* etc. ‘spread, scatter, expand, stretch, extend, pull apart, piece, disperse,’ Dravidian *para,* etc. ‘spread, be diffused, be flattened, be broad, extend, large,’ Altaic *fara-* ‘to spread freshly harvested grain out to dry.’

**Conclusion:** Semantic and phonetic differences (lack of final –s) make this connection uncertain.

**Table 71: **

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>pe(R)k¯</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Adorn (oneself), to ornament, paint, draw, make ready</td>
</tr>
<tr>
<td>PIE Root</td>
<td>Initial</td>
<td>R1</td>
<td>R2</td>
<td>Final</td>
<td>Ref</td>
<td>Semantic Value</td>
</tr>
<tr>
<td>---------</td>
<td>---------</td>
<td>----</td>
<td>----</td>
<td>------</td>
<td>-----</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>*pe̞k-</td>
<td>p</td>
<td>ø</td>
<td>k</td>
<td>1</td>
<td></td>
<td>To adorn, to ornament, to clean, to dress, satisfy, delight</td>
</tr>
<tr>
<td>*pe̞k̆-</td>
<td>p</td>
<td>i</td>
<td>k</td>
<td>2</td>
<td></td>
<td>Adorn (oneself), ornament, paint, write, draw, decorate, make ready</td>
</tr>
</tbody>
</table>

1. *pe̞k-  ‘To adorn, to ornament, to clean, to dress, satisfy, delight’

Lith *puošiu* ‘to adorn, to ornament,’ Latv *puošu* ‘to clean, to adorn,’ ON *fôgja* ‘clean, dress, adorn,’ Goth *fulla-fahjan* ‘be satisfied,’ OE *ge-fêon* ‘make glad, delight.’ —LIV 467; IEW 796-97.

2. *pe̞k̆-  ‘Adorn (oneself), ornament, paint, write, draw, decorate, make ready’

Ved *pišānā* ‘make ready, adorn oneself, form, fashion,’ *piś* ‘ornament, decoration,’ OPers *api,θa* ‘adorn, ornament,’ TochB *piŋkem* ‘paint, write,’ YAv *aŋku* ‘paēsomna’ ‘adorn oneself,’ Lith *pi esiū* ‘draw, paint, write,’ Ved *pipēša* ‘has adorned.’ —LIV 465; IEW 794-95; Monier-Williams 628; EIEC 414.

---

**Table 72:** *su̯e(R)-  ‘Stake, beam, plank, column, sacrificial post’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref.</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*su̯el-, *sel-</td>
<td>s</td>
<td>ū</td>
<td>l</td>
<td>1</td>
<td></td>
<td>Plank, board, shaped wood, doorsill, pillar</td>
</tr>
<tr>
<td>*su̯er-</td>
<td>s</td>
<td>ū</td>
<td>r</td>
<td>2</td>
<td></td>
<td>Post, prop, support, stake, sacrificial post</td>
</tr>
</tbody>
</table>

1. *su̯el-, *sel-  ‘Plank, board, shaped wood, pillar, post, stake’

NE *sill* ‘sill, window sill, door sill,’ Grk *σέλις, σέλμα, ἑλματα* ‘plank, beam, decking,’ ON *syl, swill* ‘doorsill, threshold,’ *svalar* ‘arcade,’ OE *syl* ‘doorsill, threshold,’ OHG *swelli, swella* ‘doorsill, threshold,’ OHG *sül* ‘pillar,’ Lith *súolas*

2. *su̯er-  ‘Post, stake, support, sacrificial post’

Lat surus ‘post, stake,’ Grk ἐρμα ‘prop, support,’ Skt sváru ‘sacrificial post, stake.’

Table 73: *sne(R)h₁- ‘Spin, weave, sew’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*sneh₁-</td>
<td>s</td>
<td>n</td>
<td>ø</td>
<td>h₁</td>
<td>1</td>
<td>Spin, sew</td>
</tr>
<tr>
<td>*sneH</td>
<td>s</td>
<td>n</td>
<td>ŭ</td>
<td>H</td>
<td>2</td>
<td>Spin, wind, warp, knot</td>
</tr>
<tr>
<td>*sjehH</td>
<td>s</td>
<td>ŭ</td>
<td>H</td>
<td></td>
<td>3</td>
<td>Sew, stitch</td>
</tr>
<tr>
<td>*seh₁-</td>
<td>s</td>
<td>ø</td>
<td>ŭ</td>
<td>h₁</td>
<td>4</td>
<td>Set in motion, twist, turn, spin</td>
</tr>
</tbody>
</table>

1. *sneh₁- ‘Spin, sew’


2. *sneH- ‘Spin, wind, warp, knot’

ON snúa ‘wind, spin,’ ChSlav snovo ‘warp’ (weaving), Goth sniwan ‘make haste,’ ON snúðr ‘spinning, knot, loop.’ —LIV 575; IEW 977; EIEC 571; Bomhard 320.

3. *sjehH- ‘Sew, stitch’


4. *seh₁- ‘Set in motion, twist, turn, spin’

Notes on possible outside root connections:

2. Bomhard 320 cites Proto-Uralic *sene, etc. ‘sinew, tendon, vein.’

Conclusion: This may be a PIE-Uralic isogloss as the roots are both phonetically and semantically congruent.

Table 74: *se(R)h₂- ‘To bear a child, be blest, obtain one’s desire, be satisfied’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*seyJ-</td>
<td>s</td>
<td>u</td>
<td>H</td>
<td></td>
<td>1</td>
<td>Beget, bear, bring forth a child, give birth, son, child</td>
</tr>
<tr>
<td>*sElh₂-</td>
<td>s</td>
<td>l</td>
<td>h₂</td>
<td></td>
<td>2</td>
<td>Well-disposed, merciful, kind, favorable, gracious, propitious</td>
</tr>
<tr>
<td>*sEnh₂-</td>
<td>s</td>
<td>n</td>
<td>h₂</td>
<td></td>
<td>3</td>
<td>Obtain, gain, be fulfilled, have, hold, seek, accomplish</td>
</tr>
<tr>
<td>*sElh₂-</td>
<td>s</td>
<td>ð</td>
<td>h₂</td>
<td></td>
<td>4</td>
<td>Satiate, take one’s fill, be satisfied, to have enough</td>
</tr>
</tbody>
</table>

1. *seyJ- ‘Beget, bear, bring forth a child, give birth, son, child’

Ved sūte ‘to beget, bring forth, bear,’ sū ‘child bearing, begetting, procreating,’ sūtā ‘a woman who has given birth to a child,’ sūnū ‘son, child, offspring,’ YAv hunahi ‘you give birth,’ Ved sasūva ‘has given birth,’ Lith sūnūs ‘son.’ —LIV 538; IEW 913-14; Monier-Williams 1239-40; ALEW 1141; Bomhard 275.

2. *selh₂- ‘Well-disposed, merciful, kind, favorable, gracious’

Grk ἰλαμαΤ ‘disposed or inclined to be merciful, kind, favorable, gracious, propitious,’ Arm aλa‘em ‘request, entreat,’ Grk ἰληθι (impv.) ‘Be merciful!, Be favorable!,’ —LIV 530; IEW 900; L&S 927-28.

3. *senh₂- ‘Obtain, gain, be fulfilled, have, hold, seek, accomplish’

Ved sanīṣat ‘have obtained,’ sānati ‘gain, acquire, obtain, possess, enjoy, be successful, be granted, be fulfilled,’ Arm ownim ‘have, hold, come into possession,’ OHG sann ‘strive after,’ OIr sennid ‘pursue, follow,’ Hit sanahzi ‘seek,’ Grk ἀννυμι ‘achieve, accomplish, bring about, fulfill, complete,’ ἦνεσα
‘have accomplished, have fulfilled, have completed.’ —LIV 532; IEW 906; Monier-Williams 1140.

4. *seh₂- ‘Be satisfied, have enough’

Grk ἀμένατ ‘satiate, take one’s fill, be satisfied,’ ἔωμεν ‘to have enough,’ Ved á- sinvant ‘insatiable,’ TochB seeṣk ‘satisfied, be satisfied,’ soyeṃ ‘will be satisfied.’ —LIV 520; IEW 876; L&S 299; Monier-Williams 121.

Notes on possible outside root connections:
1. Bomhard 275 cites Dravidian cēy, etc. ‘son, child, youth, child at the breast, baby, female child, boy, servant,’ Proto-Kartvelian *škew- ‘to give birth, beget,’ še-a, etc. ‘child, son, first-born.’

Conclusion: Although few potential cognates can be shown, still the phonetics and semantics are close enough to suggest possible external connections.

Table 75: *s(R)eg̑- ‘Salve, apply an unguent, smear on an ointment’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*seg̑-</td>
<td>s</td>
<td></td>
<td></td>
<td>ġ</td>
<td>1</td>
<td>Apply ointment, salve, unguent, oil</td>
</tr>
<tr>
<td>*sleig̑-</td>
<td>s 1</td>
<td>i</td>
<td></td>
<td>ġ</td>
<td>2</td>
<td>Smear, dab, apply ointment</td>
</tr>
</tbody>
</table>

1. *seg̑- ‘Apply ointment, salve, unguent, oil’


2. *sleig̑- ‘Smear, dab, apply ointment’

OIr -slig, -slegar ‘to smear, to dab, smear on a substance,’ Grk λίγδην ‘touch the surface of,’ OCS sl̥wɔkɔ ‘slippery.’ —LIV 566; IEW 663-64; OLD 1033.

Table 76: *(s)te(R)- ‘Steal, conceal, bring secretly, deprive, rob, thief’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*(s)teh₂-</td>
<td>(s)t</td>
<td>h₂</td>
<td></td>
<td></td>
<td>1</td>
<td>Steal, hide, rob, thief</td>
</tr>
</tbody>
</table>
1. *(s)teh₂- ‘Steal, hide, rob, thief’

OCS tajo ‘hide,’ taj ‘secret,’ Hit tāyezzi ‘steals,’ Av tāyu- ‘thief,’ Skt (s)tāyu ‘thief,’
TochB ene-stai ‘in secret,’ OIr tāid ‘thief,’ Grk τητάομαι ‘deprive, rob.’ — EIEC 543;
IEW 1010.

2. *ster- ‘Deprive, rob, thief’

MIr serb (< *steruos) ‘thief,’ Grk στερέω ‘deprive, rob.’ — EIEC 543; IEW 1028; LIV
*sterh₁- 599; Mallory and Adams (2006) 275-76.

3. *stel- ‘Steal’

ON stela ‘steal,’ OE stelan ‘steal,’ NE steal, Goth stilan ‘steal.’ — EIEC 543; Mallory

Table 77: *(s)te(R)k- ‘Rotate: spin, twist, churn, bore, weave, thresh’

This group of roots shows variations on the concept spin, twist, rotate. Spinning yarn is
fundamental; weaving reflects the fact that spining was a major part of the overall
weaving process; tormenting results from the twisting of limbs; churning milk is
accomplished by turning or spinning the churning stick; boring was done with a
friction-stick rotated by a bow with a string under tension like the ancient fire-drill;
threshing was performed by leading oxen in a circle to stamp the grain out of the husk,
or to drag a threshing sledge around the threshing floor. All these activities involve circular rotation, probably originally based on the notion of spinning wool.

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref.</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*tek-</td>
<td>t</td>
<td>ø</td>
<td>k</td>
<td></td>
<td>1</td>
<td>Turn, twist, roll, spin, plait, weave, spindle, break flax</td>
</tr>
<tr>
<td>*terk⁽w⁾</td>
<td>t</td>
<td>r</td>
<td>k⁽w⁾</td>
<td></td>
<td>2</td>
<td>Spin, twist, spindle, torment (twisting the limbs), wind up, writhe, wood turner</td>
</tr>
<tr>
<td>*tenk-</td>
<td>t</td>
<td>n</td>
<td>k</td>
<td></td>
<td>3</td>
<td>Twisting a churning stick, coagulate by churning, churned milk, buttermilk</td>
</tr>
<tr>
<td>*teyk-</td>
<td>t</td>
<td>ŭ</td>
<td>k</td>
<td></td>
<td>4</td>
<td>Bore, thresh, weave, drill,</td>
</tr>
<tr>
<td>*telk-</td>
<td>t</td>
<td>l</td>
<td>k</td>
<td></td>
<td>5</td>
<td>Thresh, husks of grain, stamp, crush, pound, beat, grist</td>
</tr>
<tr>
<td>*(s)trenk-</td>
<td>(s)t</td>
<td>r</td>
<td>n</td>
<td>k</td>
<td>6</td>
<td>String, cord, spun yarn, be twisted, strong, strangle</td>
</tr>
</tbody>
</table>

1. *tek- ‘Weave, plait, twist, spin’

Arm t’ek’em ‘turn, twist, roll, plait,’ hiwsem ‘plait, weave,’ Lat texō weave, plait, spin, put together,’ MHG dehsein ‘break flax,’ OHG dehse, dehsa ‘spindle.’ —LIV 619; IEW 44, 1058-59; Bomhard 185.

2. *terk⁽w⁾ ‘Twist, spin, spindle, yarn (and other products of spinning)’


3. *tenk-, temk- (By turning a butter-churn): ‘Make thick, coagulate, buttermilk, curdle, churning-stick, (twisted) seaweed’
Hit tamekzi ‘attach, clinging,’ Ved tanakti ‘churned buttermilk,’ OIr téici ‘coagulated,’ ON bél (< tenklo) ‘buttermilk,’ Lith tánkus ‘thick, copious,’ Pashto tat (< *tahta-< *tn̥kto-) ‘thick,’ NPers talxina ‘sour milk,’ Skt a-tanákti ‘makes curdle,’ takram (< tŋkl̥m̥) ‘buttermilk,’ taktāta (< tañc) ‘churning stick,’ TochB tanki ‘very full, blocked,’ ON ðang ‘seaweed’ (from the tendency of seaweed to twist itself around other seaweed strands and make a thick, strong, ropelike tangle.) —LIV 625; Mallory & Adams (2006) 320; IEW 1068; EIEC 516; Monier-Williams 431; de Vries 608.

This root is typically understood to represent thickened or coagulated milk products, rather than the rotating, churning process employed to reach such coagulation. Understood in this way, however, makes sense out of the attested forms signifying ‘churning stick’ and ‘(twisted) seaweed,’ as well as all of the terms related to coagulated milk. A parallel example is the English word, grain. This term signifies a diverse range of cereal crops, but it is derived originally from a word meaning, rub, crush, grind, denoting the process involved in preparing the items for consumption.

4. *te̞k- ‘Thresh, bore, drill, hole made by boring, tool for boring, weave’

Grk τυκίζω ‘to work stone,’ τυκος ‘tool for working stone,’ τυκάνη ‘a kind of drag used as a threshing instrument, a threshing sledge (This implement was drawn in a circular motion by a draft animal.), OIr toll ‘hollow, hole, aperture’ (< tüklo), Cymr twill ‘an aperture, hole or cavity (“originally one produced by boring”), perforated,’ OCS tokati ‘weave, prick.’ —L&S 1833, 1807; OLD 1958, 1971, 1927; IEW 1032; LIV 640.

The attested OCS word tokati ‘weave’ presumably refers to the spinning component of the weaving process. See also L&S s.v. “πόλος,” 1436, for a reference to the circular threshing floor.

5. *telk- ‘Thresh, stamp upon, grist, husks of grain

OCS so-tloče ‘break up, smash,’ tloko ‘beat, pound, break,’ Cymr talch ‘fragment, grist,’ OCorn talch ‘husks of grain,’ Slav tolko ‘stamp, crush,’ Russ tolokno

This root denotes the process of threshing grains. Since, in the ancient world, this activity typically involved leading oxen in a circle around a central post, it implies rotational motion.

6. *(s)tre nk- ‘String, spun yarn, be twisted, strong, strangle’


Notes on possible outside root connections:
1. Bomhard 185 cites Afrasian *tak-alt-, etc. ‘fix, fasten, drive in, plant, set up, establish, peg, stake, nail, post, build,’ Dravidian takai, etc. ‘stop, resist, deter, obstruct, forbid, subdue, enclose, bind, fasten, yoke, surrounding wall, fortress, palatial building, section of house, apartment,’ Proto-Uralic *takka-alt-, etc. ‘fasten together, stick together, adhesive state of the snow, sticky thick mass, cling, get stuck, hang,’ Eskimo *taquq, etc. ‘braid, cheek, braid hair.’
5. Bomhard 189 cites Dravidian tallu, etc. ‘push, shove, expel, reject, remove, lose, fall, thrust, press through,’ Proto-Kartvelian *tel-alt-, etc. ‘press, tread down, crush, touch, trample,’ Uralic *tal-va-alt-, etc. ‘trample, tread on, press, stamp, crush.’

Conclusion: The semantics are not particularly close in either of these roots. Lack of final consonant in root number 5 makes the connection to PIE uncertain.

Table 78: *(te(R))k- ‘ Colonize: build, cultivate, and control the earth’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*(te)k-s, *(te-tk)-</td>
<td>t</td>
<td>ø</td>
<td></td>
<td>k</td>
<td>1</td>
<td>Establish, produce, hew, cut, fabricate, fashion, axe, craft, skill</td>
</tr>
<tr>
<td>*(tek-ei)-</td>
<td>t</td>
<td>ø</td>
<td></td>
<td>k</td>
<td>2</td>
<td>Cultivate soil, settle, dwell, linger, build on, work land, settlement, people a country</td>
</tr>
<tr>
<td>*(tek-ei)-</td>
<td>t</td>
<td>ø</td>
<td></td>
<td>k</td>
<td>3</td>
<td>Gain control of, possess, gain power over, rule, kingdom, dominion</td>
</tr>
</tbody>
</table>
HAYNES — RESONANT VARIATION IN PROTO-INDO-EUROPEAN

<table>
<thead>
<tr>
<th>*tyer̥k̥-</th>
<th>t</th>
<th>u</th>
<th>r</th>
<th>ƙ</th>
<th>4</th>
<th>Carve, cut, form, fashion, mold, shape, maker, creator</th>
</tr>
</thead>
</table>

1. *tek-*s, *te-ître̥- ‘Establish, produce, hew, cut, fabricate, fashion, axe’


2. *tk-ëj- ‘Cultivate soil, settle a land, dwell in a place’


3. *tk-ëj- ‘Gain control of, gain power over, rule, kingdom


4. *tyer̥k̥- ‘Carve, cut, form, fashion, mold, shape’

YAv ṇb̥ar̥asaiti ‘carve, cut, form, fashion, shape,’ OAv ṇb̥ar̥ozdīm ‘have formed, have shaped,’ Skt tváṣṭar ‘maker or creator god,’ Grk σάρξ ‘flesh, piece of flesh.’ —LIV 656; IEW 1102.

Notes on possible outside root connections:
1. Bomhard 205 cites Proto-Kartvelian *tik̥-, etc. ‘small tool or implement, a stick, a pick, toothpick, tooth,’ Uralic teke-, etc. ‘do, make, deed, act.’

**Conclusion:** The semantic parallels here are not particularly strong.

**Table 79:** *t(R)e̥p̥- ‘Strike, beat, stamp’
1. *tep-*  ‘Stroke, smear, beat, strike, whip, hammer’

Lith tepù ‘stroke, smear,’ OCS tepo ‘beat, strike, pound,’ ORus tepu ‘beat, strike, scourge, lash, whip,’ OCzech tepati ‘beat, strike, hammer,’ ON þṓi ‘to felt wool.’ —LIV 630; IEW 1056; ALEW 1260-61; Bomhard 192.

2. *trep-*  ‘Trespass, tread (crush) grapes, tramp’

OPrus er-treppa ‘run over, trespass,’ Grk τραπέω ‘tread grapes,’ Lith trepënti ‘tramp.’ —LIV 650; IEW 1094; L&S 1811.

Notes on possible outside root connections:
1. Bomhard 192 cites Dravidian tappu, etc. ‘strike, kill, a blow, stroke, slap, attack, hit,’ Proto-Uralic *tappa-, etc. ‘hit, beat, strike, slay, kill, put to death, stamp, tread on, trample on, clap hands, kick.’

Conclusion: Strong semantic and phonetic parallels suggest that this root is cognate to the outside language forms cited.

Table 80: *te(R)-  ‘Rotation: spin, bore, churn, throw pots, whisk, whirl’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*ter-h₁-</td>
<td>t</td>
<td>r</td>
<td></td>
<td></td>
<td>1</td>
<td>Rub, turn, twist, bore, drill, pierce, thresh, grind, whirling motion</td>
</tr>
<tr>
<td>*týer-</td>
<td>t</td>
<td>ü</td>
<td>r</td>
<td></td>
<td>2</td>
<td>Circular motion: rotate, whirl, stir, agitate, churn, vortex, whirlwind</td>
</tr>
<tr>
<td>*ten-</td>
<td>t</td>
<td>n</td>
<td></td>
<td></td>
<td>3</td>
<td>Stretch, spin, weave, twist, string (as spun fiber), musical tone from string under tension</td>
</tr>
<tr>
<td>*tel-h₂-</td>
<td>t</td>
<td>l</td>
<td></td>
<td></td>
<td>4</td>
<td>Raise, lift, cause to rise into the air, uphold, turn, spin, endure, rise (of the stars)</td>
</tr>
</tbody>
</table>

1. *ter-h₁-  ‘Rub, turn, twist, bore, drill, pierce, thresh, grind’

Grk τείρω ‘pierce by rubbing,’ τοράεις ‘a boring tool,’ τορνεύμα ‘whirling motion as of a lathe,’ τορνεύω ‘to turn round as a carpenter turns an auger,’ τρύπανον ‘a
carpenter’s tool, a borer rotated by a thong,’ τρυπα ‘a hole,’ OIr tarather
‘instrument for drilling,’ Lat terō ‘wear down, rub, thresh, grind,’ tribulum ‘a
threshing sledge,’ terebrā ‘borer,’ Lith tinū ‘rub,’ OCS tvrjo ‘rub,’ Alb tjerr ‘spin,’
Skt tārā ‘piercing,’ OE therscan ‘thresh,’ thráwan ‘turn, twist, throw pots on a
potter’s wheel,’ threo ‘thread’ (from Germanic *throd ‘twisted yarn’), MidDutch
drillen ‘to drill.’ —IEW 1071; Mallory and Adams (2006) 375-76; LIV 632; OLD
1927; Watkins (2011) 93; L&S 1830; Bomhard 196.

See Ozolins (2015:29) for an argument by Anttila (1969:154) that this root is *ter-h1 rather
*terh1. I follow Anttila here.

2. *tyer- ‘Move in circular motion: whirl, stir, churn, vortex, whirlwind’
OE þweran ‘stir, churn, agitate,’ OHG dweran ‘turn about quickly,’ ON þvara
‘whisk,’ þyrla ‘turn, whirl or swirl around,’ OE dwēre ‘olive press,’ MNG dwarl
‘whirlpool, vortex, NHG dorlen ‘rotate.’ (With -b extension): Lat turbō ‘whirlwind,
Vortex, spinning motion, top (toy).’ —Mallory and Adams (2006) 379; IEW 1100;
LIV 655; EIEC 607.

3. *ten- ‘Stretch, spin, weave, twist, thread, string, cord, rope, musical tone’
Skt tanyate ‘stretch a cord, bend a bow, spread, spin out, weave,’ NPers tanīdan
‘rotate, spin,’ Skt tānti ‘cord, musical string,’ tantu- ‘thread, cord, string, the warp
in weaving,’ tántra ‘the warp on a loom,’ tāna ‘sound, musical note, thread,’ Grk
tēnος ‘bow string,’ tóνος ‘tension, sound, musical tone,’ Goth ufþanjan ‘stretch
out,’ ON þinull ‘rope,’ Latv tinu ‘plait, twist,’ tanis ‘spider, spider web.’ —LIV
626; IEW 1064-66; Mallory and Adams (2006) 299; OLD 1922; DELG 1053;
Monier-Williams 435; NIL 690-91; Bomhard 190.

4. *tel-h2 ‘Raising, lifting, turning’
Lat tollō ‘lift, cause to rise into the air,’ TochAB tāl ‘uphold, raise,’ Grk τέλλω
‘come into being, accomplish, turn, to rise (of stars).’ —LIV 622; IEW 1060;
Mallory and Adams (2006) 406; L&S 271, 1754, 1772; Bomhard 212; EIEC 352.

Liddell and Scott write of Greek τέλλω, “The sense rise is perhaps derived from that of
revolve as used of stars.” That this is correct can be seen from the name, Anatolia,
signifying Asia (or more particularly, Asia Minor), as the place (the East) where the stars “up-turn” (ανα=up, τελλω=turn), or as we commonly say in English, “where the stars come up,” but the ancients were well-aware that the stars move in a circular motion, i.e. that they turn. Other attestations of this root have drifted into the metaphorical realm: Grk ταλάσσαι ‘bear, suffer,’ Goth þulan ‘bear, suffer, endure,’ etc., but evidence that the original sense of this root was, as suggested by Liddell and Scott, 
*turning up, revolving, spinning*, can be seen from the fact that a group of related Greek words indicate just that: ταλασήιος ‘of wool spinning,’ ταλασίουργέω ‘spin wool,’ ταλασίουργός ‘wool spinner.’

Another Greek word, Ἀτλας ‘the titan, Atlas,’ who is said (by Hesychius) to be the “axis of the earth,” is often ascribed to this root (ἀ- euphonic, and τλάς from *τλάω). Since “axis of the earth” is, by definition, “axis of rotation,” this supports the notion that this root ultimately shares the fundamental semantic value of revolve, rotate, as do the other roots in this resonant series.

Notes on possible outside root connections:

1. Bomhard 196 cites Dravidian tar̤ayuka, etc. ‘be worn out, rubbed, ground (as a knife), habituated, practiced, try, abrade, wear away, become thin, become wasted, become abraded by moving over a rough surface or by having something rubbed over it, be chafed, grazed.’
2. Bomhard 190 cites Proto-Afrasian *tan-, etc. ‘extend, spread, stretch out, endure, be long-lasting, be continuous, perpetual, steadfast, great and strong, solidly built,’ Dravidian tanj, etc. ‘abound, be profuse, increase in size, grow fat, full, strong, developed, matured, rich, rise, shine, be well, progress, advance, thrive,’ Proto-Altaic *tvāno-, etc. ‘stretch, pull, bent backwards, arched, become straight, stretch oneself, be stretched.’
3. Bomhard 212 cites Proto-Afrasian *tul-, etc. ‘lift, raise, pile up, stack in a heap, hill, mound, hang, mound, be exalted, lofty, elevation, rise, spread, long, outstretched, extended, high, tall,’

**Conclusion:** All three of these roots show credible connections to the outside language families, suggesting a separation into the resonant variants seen in PIE while still in mutual contact.
Table 81: *(s)te(R)g- ‘Touch, stroke, touch gently, show affection for, be fond of’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*teh₂g̑-</td>
<td>t</td>
<td>h₂</td>
<td>g̑</td>
<td></td>
<td>1</td>
<td>To touch, lay hands on, reach out and touch, lay hold of, stroke</td>
</tr>
<tr>
<td>*terg̑-</td>
<td>t</td>
<td>r</td>
<td>g̑</td>
<td></td>
<td>2</td>
<td>To rub against, to rub a person down after a bath</td>
</tr>
<tr>
<td>*streig-</td>
<td>(s)t</td>
<td>r</td>
<td>i</td>
<td>g</td>
<td>3</td>
<td>Touch, stroke, rub, touch gently</td>
</tr>
<tr>
<td>*strei̯g-</td>
<td>(s)t</td>
<td>r</td>
<td>u</td>
<td>g</td>
<td>4</td>
<td>Stroke, caress, fondle, hug, rub, rub down, wipe</td>
</tr>
<tr>
<td>*stelg̑-</td>
<td>(s)t</td>
<td>l</td>
<td>g̑</td>
<td></td>
<td>5</td>
<td>Stroke, rub smooth</td>
</tr>
<tr>
<td>*sterg̑-</td>
<td>(s)t</td>
<td>r</td>
<td>g</td>
<td></td>
<td>6</td>
<td>Show affection for, be fond of, love, watch over</td>
</tr>
</tbody>
</table>

1. *teh₂g̑- ‘To touch, lay hands on, reach out and touch’

Lat tangō ‘to touch, to touch in a sexual or erotic sense, lay hands on, reach out and touch,’ Grk τεταγών ‘hold on to, lay hold of,’ Goth tekan ‘to touch,’ OE þaccian ‘touch lightly, stroke,’ TochB cešām ‘to touch.’ — LIV 616; IEW 1054; EIEC 595; OLD 1904-05; L&S 1779; Autenrieth 267; Balg 435; Bomhard 186; Mallory and Adams (2006) 336.

2. *terg̑- ‘To rub against, to rub a person down after a bath, to wipe dry’

Lat tergō ‘rub, wipe dry, to rub a person down after a bath, to rub oneself down, to rub against, press.’ — LIV 632; IEW 1073; OLD 1924-25.

3. *strei̯g ‘Touch, stroke, rub, touch gently’

Lat stringō ‘to touch,’ OHG strīhhan ‘stroke, touch gently, rub,’ OCS strīgo ‘shear, clip.’ — LIV 603; IEW 1028; OLD 1828.

LIV suggests that two separate roots have fallen together in Latin stringō. Besides the sense described here, the other signifies “twist together,” and forms part of the resonant series above (*te(R)k- ‘rotate’). See LIV 604, note 1 to 1.*streig-.
4. *streug-  ‘Stroke, caress, fondle, hug, rub, rub down, wipe off’

ON strojúka ‘stroke, wipe off, smooth, hurry,’ OCS o-stružo ‘scrape off,’ NDutch stroken ‘stroke, caress, fondle, hug,’ Grk στρεύομαι ‘exhausted, worn out, rub, rub down,’ OE stroccian ‘rub, rub down,’ Latv strūgains ‘rub.’ — LIV 605; IEW 1029; de Vries 554; DELG 1026.

5. *stelg-  ‘Stroke, rub smooth’

Hit istalakzi ‘stroke, rub smooth,’ istalkiyattari ‘is smoothed.’ — LIV 595.

6. *sterg-  ‘Show affection for, be fond of, love, watch over’

Grk στέργω ‘love, feel affection (between parents and children), be fond of, show affection for,’ OCS strēgo ‘guard, watch over.’ — LIV 598; IEW 1032; L&S 1639.

Notes on possible outside root connections:
1. Bomhard 186 cites Afrasian *-tak’, etc. ‘touch, push, strike, break,’ Dravidian tagalu, etc. ‘come into contact with, touch, hit, have sexual intercourse with, draw near, strike against, follow, pursue, be entangled, be caught, hurt, rub or graze in passing, give a very slight knock.’

Conclusion: These are quite plausible outside connections to the PIE root.

*ǔ-

Table 82: *(s)uer(R)-  ‘Turn, spin’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*(s)uer-</td>
<td>(s)u</td>
<td>r</td>
<td></td>
<td></td>
<td>1</td>
<td>Spin, turn, spindle, whirlwind, spindle whorl, string, coil of yarn, warp of loom,</td>
</tr>
<tr>
<td>*uer-</td>
<td>u</td>
<td>l</td>
<td></td>
<td></td>
<td>2</td>
<td>Turn, turn around, circle, enclosure, roll, wind up, round, rotate</td>
</tr>
<tr>
<td>*yei, *yeis-</td>
<td>u</td>
<td>i</td>
<td></td>
<td></td>
<td>3</td>
<td>Weave, twist, roll, plait, braid, wind, weave, whirlwind</td>
</tr>
<tr>
<td>*yen-</td>
<td>u</td>
<td>n</td>
<td></td>
<td></td>
<td>4</td>
<td>Reel, winch, ring, circle, turn, twist, wind, spindle whorl</td>
</tr>
</tbody>
</table>
1. *(s)yer- ‘Spin, turn, spindle, whirlwind, spindle whirl’

(From *(s)yer-b³): Rus dial. voróba ‘circular string, cord,’ voróby ‘coil of yarn,’ ON verpa ‘warp, to warp a loom for weaving,’ varp ‘the warp of a weaving, yarn used for warp in weaving, beating the loom,’ NE warp. With s-mobile (*(s)yer-b³): Cymr chwerfu ‘whirl, whirlpool, vortex, rotate, revolve,’ chwerfan ‘whorl for a spindle,’ OHG sworbo ‘eddy, whirlpool, vortex,’ OSwed svarva ‘turn on a lathe,’ Latv svařpst ‘borer.’ (From *(s)er-b³): Lith verpiù (Latv vērpt) ‘to spin,’ varpstė ‘spool, spindle,’ Latv verpel ‘whirlwind.’ (From *(s)er-t): Skt vartati ‘turn, rotate, roll,’ Av varat ‘rotate,’ vartáyati ‘to set in a turning motion,’ Lith vartana ‘the turning,’ vartula ‘round,’ vartulā ‘spindle whorl,’ OCS varti ‘rolling,’ Grk ἄ-ρρατος ‘not turnable,’ Lat vertō ‘revolve, turn, spin, churn,’ vortex ‘whirl, whirlpool, whirlwind,’ MIr fertas ‘spindle,’ Cymr gwerthyd ‘spindle,’ OCorn gurhthit ‘hand spindle with spindle whorl,’ OHG wurt ‘destiny’ (from the fates who are spinners), Russ-CSlav vrěteno ‘spindle.’ — LIV 691; IEW 1050, 1153-57; OLD 2042; EIEC 607; Mallory and Adams (2006) 378, 380 (*(s)er-b³-).

2. *uel- ‘Turn, roll, wind up, round, rotate’

Skt vālati ‘turn, turn around,’ valaya ‘circle, round enclosure,’ Arm gelowm ‘turn,’ Lat uolūo ‘roll, turn,’ uolūtō ‘to impel forward by rolling, roll, form by rolling,’ Grk έλυω ‘to turn, to wind,’ ON valr ‘round,’ MNG walen ‘turn, rotate, roll.’ — LIV 675; IEW 1140-42; EIEC 607; Monier-Williams 927; OLD 2101-02; Bomhard 792.

3. *ueĩ-, *ueĩ-s- ‘Weave, twist, roll, plait, whirlwind’

Skt vāyati ‘weave, plait, twist, braid,’ vāya ‘weaver, the weaving,’ vāyaka ‘weaver, one who sews,’ vyāyati ‘roll, roll up, wind, twist,’ Lat vieō ‘bend or twist into basketwork, plait, weave,’ Skt vēṣṭatē ‘wind, twist around,’ Neth wier, OFris wir, OE wür ‘algae, seaweed’ (from its tendency to twist itself around other seaweed strands to make a strong rope-like tangle), OCS vichrō ‘whirlwind.’ — Mallory
and Adams (2006) 233; IEW 1120-21, 1133; OLD 2060; Moiner-Williams 1019; EIEC 571.

4. *yen-  ‘Reel, winch, ring, circle, turn, twist, wind, spindle whorl’

*yen-g: OE wince ‘reel, windlass, winch,’ NE winch. *yen-dh: Arm gind ‘ring, circle,’ Grk ἄθρας ‘wagon,’ Umbr pre-uendo ‘turn,’ Goth, OE, OSax windan, OHG wintan, ON vandr ‘wind, twine, reel, twist, coil,’ OHG wanda ‘turbo’ = “an object that spins or revolves, a spinning top, the whorl or fly-wheel of a spindle, whirlwind, whirlpool.” —Mallory and Adams (2006) 378-79; IEW 1148; LIV 681-82; OLD 1992; EIEC 607; Buck 98, 343; Bomhard 798.

Notes on possible outside root connections:
2. Bomhard 792 cites Proto-Afrasian *wal-, etc. ‘revolve, turn, turn around, turn back, wheel around, flee, turn towards,’ Dravidian valai, etc. ‘surround, hover around, walk around, move about, circle, circumference, ring, bracelet, enclosing, wander about, be surrounded, encompassing,’ Chuk-Kamch *waltɪ- ‘to twist face.’

4. Bomhard 798 cites Proto-Afrasian *wan-, etc. ‘bend, twist, be crooked, be twisted, press, oppress, deceive, trick, tread down, trample, cheat, delude, mistreat, vex, be faint, be weak, do wrong, commit a fault,’ Dravidian vaṅki, etc. ‘kind of armlet, hook, gold armlet of a curved shape, bend, yield, submissive, curl, vault, bow, reverence, curve, inclination, curve, crookedness,’ Uralic *waŋka, etc. ‘bent or curved, hook, lever for rolling logs, handle,’ Chuk-Kamch *won- ‘bend.’

Conclusion: Both of these PIE roots show credible parallels in outside language families, suggesting that separation into the resonant variants occurred while still in contact with them.

Table 83: *(s)yer(R)*  ‘Wound, injure, sore, hurt’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*(s)yer-</td>
<td><em>u</em></td>
<td>r</td>
<td></td>
<td></td>
<td>1</td>
<td>Wound, pain, sore</td>
</tr>
<tr>
<td>*u(e(e2-3))</td>
<td>u</td>
<td>l</td>
<td></td>
<td></td>
<td>2</td>
<td>Wound, pain, scar, tear, strike</td>
</tr>
<tr>
<td>*yen-</td>
<td>u</td>
<td>n</td>
<td></td>
<td></td>
<td>3</td>
<td>Wound, injure, hurt’</td>
</tr>
<tr>
<td>*yeh2- (*yā-)</td>
<td>u</td>
<td>h2</td>
<td></td>
<td></td>
<td>4</td>
<td>Wound, damage, sore</td>
</tr>
</tbody>
</table>

1. *(s)yer-  ‘Wound, pain, sore’

OHG sweran ‘abscess, ulcer, pain, fester,’ Av śara ‘wound, hurt, damage, injury,’ Alb varrē ‘wound, injury, sore,’ Skt vṛṣa ‘wound, sore, ulcer, abscess,’ OCS rana
'wound,' Russ *rana* 'wound.' — LIV 613; IEW 1050; EIEC 650; Mallory and Adams (2006) 198; Moiner-Williams 1042.

2. *yel(h2.3)*— ‘Wound, pain, scar, tear, strike’


3. *yen*— ‘Wound, injure, hurt’

OE *wund* (< Germanic *wendaz*) ‘wound,’ *wen(n)* ‘wen, cyst on scalp or face, a swelling,’ Goth *wunds* ‘wound, injure, hurt,’ ON *und* ‘wound.’ — Watkins (2011) 101; IEW 1108; de Vries 634; Mallory and Adams (2006) 280; Bomhard 799; EIEC 548-49.

4. *yeh2*— (*yā*)— ‘Wound, damage, sore’

Grk ἀάω ‘hurt, wound, damage,’ ἁτή ‘damage, blame, offense, guilt,’ οὐτᾶω ‘wound,’ Latv *vâts* ‘wound,’ Lith *votis* ‘open sore.’ — IEW 1108; de Vries 634; L&S 1; Bomhard 783.

Notes on possible outside root connections:
2. Bomhard 816 cites Dravidian vel, etc. ‘conquer, overcome, destroy, victory, kill,’ Uralic *wër-,* etc. ‘strike, kill, slay, slaughter, put to death, butcher, massacre, catch.’
3. Bomhard 799 cites Dravidian vāniki, etc. ‘dagger, knife, sword,’ Proto-Kartvelian *w*ṛ-, etc. ‘injure, harm, torment, suffer,’ Uralic *wamp-,* etc. ‘strike, cut, cut off, stab, hew, hammer, chop, slaughter, slash, gash, killing, blow, wound made by cutting.’
4. Bomhard 783 cites Proto-Afrasian *wahr-,* etc. ‘strike, wound, hew, cut stone, reap, pluck, kill, quell, stab, sting, blade, knife, sword,’ Altaic *wā-,* etc. ‘kill, slay.’

**Conclusion:** The parallels in the outside language families suggest that the resonant variants of PIE were created while still in contact with them.

**Table 84:** *yel(R)*— ‘See, look’
Notes on possible outside root connections:

1. Bomhard 821 cites Proto-Afrasian *wil-, etc. ‘become bright, appear, come into view, appear suddenly, emerge into view, come out of hiding,’ Dravidian vel, etc. ‘white, pure, shining, bright, clear, whiten, dawn, be manifest, know, show itself clearly, kindle, scour.’

2. Bomhard 801 cites Afrasian wrš, etc. ‘spend the day, spend one’s time, be awake, guard, sentry, watch, vigil, watch-tower,’ Uralic *wars-, etc. ‘watch over, look after, tend, attend to, keep, guard, wait for, wait on.’

Conclusion: These two PIE roots both show credible parallels in the outside language families. This suggests that they differentiated into the resonant variants while still in contact with them.

Table 85: *u̯elh₁−  ‘Want, choose, desire’

<table>
<thead>
<tr>
<th>PIE Root</th>
<th>Initial</th>
<th>R1</th>
<th>R2</th>
<th>Final</th>
<th>Ref</th>
<th>Semantic Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>*u̯elh₁−</td>
<td>u̯</td>
<td>l</td>
<td></td>
<td>h₁</td>
<td>1</td>
<td>Choose, wish, want, be willing, desire,</td>
</tr>
</tbody>
</table>
HAYNES — RESONANT VARIATION IN PROTO-INDO-EUROPEAN

| *yenH-  | u | n | H | 2 | Wish, yearn, desire, love, lust, friend, wife, long for, |
| *yež(h)_- | u | i | h | 3 | Want, strive for, eager for, desirous of, liked, loved |

1. *yelh₁-  ‘Choose, wish, want’


2. *yenH-  ‘Wish, yearn, desire, love, lust’

ON vinr ‘friend,’ Av vantā ‘wife,’ Lat venus ‘lust,’ Skt vānas ‘longing, desire,’ vanī ‘wish, desire,’ venā ‘yearning, longing, anxious, loving,’ TochA wañi, TochB wīna ‘pleasure,’ and in a further derived form, OE wīscan ‘wish,’ OHG wunsc ‘wish,’ NE wish. —LIV 682; IEW 1146-47; Mallory and Adams (2006) 341; Monier-Williams 917, 1018; EIEC 158; Bomhard 822.

3. *yež(h)_-  ‘Want, chase, strive for, enjoy, eager for, desirous of, liked, loved’

Lat uīs ‘thou wantest,’ Lith vejū ‘chase, drive, pursue,’ Grk (➔)ιεμαι ‘strive,’ Skt vēti ‘follow, strive, seek or take eagerly, enjoy, arouse, excite,’ vī ‘eager for, desirous of, fond of,’ vītā ‘desired, liked, loved, pleasant.’ —LIV 668; IEW 1123-24; Mallory and Adams (2006) 402; OLD 2068-69; Monier-Williams 1004; Bomhard 826.

Notes on possible outside root connections:
1. Bomhard 822 cites Proto-Afrasian *win-, etc. ‘be pleasant, joyful, rejoice, nice, comfortable, soft, gentle, good, clean,’ Dravidian vēṭṭu, etc. ‘want, desire, beg, entreat, request, be required, necessary, indispensable, petition, longings, sexual passion, amorous pleasure.’
5. Bomhard 826 cites Uralic *woye-, etc. ‘be able, have power or capability, strength, force, power, win, gain, conquer, beat, overcome, victory, triumph,’ Altaic *u(y)-, etc. ‘be able, have power or capability, endure.’
Conclusion: Outside language parallels to the two PIE roots here indicate probable genetic connections, suggesting contact with those language families during the time that the resonant variants were developed.

Conclusion

It is evident from these examples that pre-Proto-Indo-European used resonant variation as a kind of grammatical ablaut, as a morphological process to express nuance to ancient roots in the same way that modern languages use vowel modifications, as in the English series: sing, sang, sung, song. The resonants changed, but the fundamental semantic value of the primitive root remained relatively constant.

A further and more comprehensive evaluation of the PIE lexicon to determine the precise extent of this linguistic feature, and to classify roots according to their ancient affiliations, would accomplish two valuable objectives: First, it would push back in time the limits of our knowledge of IE word histories. And second, it would reveal the form of the language at a stage where meaningful comparisons with other language families could be more productive.