

MORE PONTIC: FURTHER ETYMOLOGIES BETWEEN INDO-EUROPEAN AND NORTHWEST CAUCASIAN

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The word for ‘horse’ in Indo-European has long presented a number of puzzles. First, while Keltic and Italic show */k^w/, other languages show clear evidence for the cluster */k^w/ . Second, where vocalic contrasts have been retained, the reflexes offer evidence for */e/, while Hellenic stands apart, both with Mycenaean and Classical Greek forms, in showing /i/. Third the Classical form also shows an /h/, which simply adds to the mystery (see, for example, Bonfante’s (1996) Illyrian theory; in particular, the “Editorial Remark” at the end). Clearly the usual reconstruction of this word as */ék^wos/ or */ǰ₁ék^wos/ leaves these oddities unexplained. Eric Hamp (1990a) has attempted to explain this series of details, including the choice of palatal stop (see Landahl & Hamp 1997:355, n. 3, where the palatal is justified in contrast with the velar *k, the latter assumed to give merely /k/ in Greek, as in /kapnós/ “smoke”, Latin *vapor* < */kwapor/, but note the Mycenaean form in (3, c)).

Jasanoff (1988) first suggested that ‘horse’ and ‘swift’ are related. In a brilliant and thoroughly argued article Hamp elaborates upon this suggestion. Specifically, he proposes that the source for PIE ‘horse’ is the *e*-grade of a stem for ‘swift’ (pp. 212-213, especially n. 7), see (1), formed by a rule for thematized non-verbal derivations.

(1) PIE forms for ‘horse’

- a. zero-grade *ǰ₃ǰ₁-ék-w-o-s > Greek *hippos* (with *ǰ₃ > Gk *h*)
- b. e-grade *ǰ₃eǰ₁-k-w-s > Greek *ōkús*,

Hamp would rewrite (1) as (2):

(2) Glottalic Indo-European forms

- a. *e*-grade thematized derivative stem
*(ǰ^w)ǰ-ǰk^{hj}-w-a-s > Greek *hippos*
- b. *e*-grade root
*ǰ^wǰ-k^{hj}-w-s > Greek *ōkús*

I have used schwa instead of Hamp's */e/, having argued elsewhere (Colarusso 1997:122-123; 1981:499-502) that the PIE system was not *e ~ *o, but rather */ə/ ~ */a/ (see also Hamp 1994 and Pulleyblank 1993). For the debate around 'glottalic' Indo-European see, for example, Gamkrelidze (1987) and Polomé (1988). As to my realization of the laryngeals and their history, see Colarusso (1997:122-126), as well as Adrados (1987:107), who posits six of them, and Polomé (1987), who attempts a set of phonological rules to account for the complexities of this series of sounds.

Hamp bolsters the Greek evidence for an initial */ǵ₃/ with material from Latin *ōcior*, *ōcissimus*, "swifter", "swiftest", respectively, forms which would ordinarily have shown *e*-vocalism if an *o*-coloring laryngeal were not present in the IE root ((1990a:212). The compounds *acu-pedius* "swift-footed" and *accipiter* "quick-taker" (< **acu-cipiter* by conflation with *accipiō* < **ad-cipiō*) are taken by Hamp as evidence for zero-grades in which the laryngeal (cluster) has been syllabified, something like */(ǵ₃)ə₁-ḳ-w-/, (*/(ǵ^w)ʔ-k^h-w-/) [my reconstructions]. He further lists a panoply of forms, worth repeating here (pp. 225-226, notes 10, 11), to attest to the persistence of this word. I repeat the list here [with my additions in brackets] in order to point out the transitional character of the Greek development

(3) Reflexes of */k^hw/ (*ḳw):

a. */k^hw/ > */ḳw/ (in Germanic */xw/)

Sanskrit *āśva*

Avestan *aspā-*

Old Persian *asa-*

Modern Persian *asp* (Landahl & Hamp 1997:350)

[but Haim (1961:33; 1967:558) cites *asb*]

Khotanese Saka *ās(ś)a-*

Soghdhian "*sp* [= *asp*] all "horse"

Ossetic *yæfs* (Iron), *æfsæ* (Digoron) "mare"

[also Iron (*xærg*)*æfs* "mule, hinny" (Abaev 1970:239)]

(Hunza) Wakhi (Iranian) *yaš*

Thracian (*kak*)*asbos*, "(evil)horse", "horse of ill fortune" (very Iranian looking)

Old Lithuanian *ašvā* "mare"

Old Prussian *aswinan* "horse milk", *Ašvā* a river name

Latvian names (after Karulis) *Asūne*, *Asugals*, *Asva*, *Ese*

Old Latvian dial. *ōssa*; "horse"

Old English *eoh*, "mare" [Old Saxon *ehu*]

Armenian *ēš* "donkey"

Venetic *ekvo*

Luwian *a-zu-wa-* (Melchert in Watkins 1987:182-204)

Tokharian B *yakwe*

Illyrian *hikkos* (Bonfante 1996:111) (!) (with *CG > CC, as in Hellenic)

b. $*/k^{hi}w > k^{hw}/$ (confined to Italic and Keltic):

Latin *equus*

Old Irish *ech* “horse”

Old Cornish *ebol*

Breton *eboul*, both “colt”

Gaulish *Epo-* (in names), *Epona* “goddess of horses”

Scottish Gaelic /ɛx/ (with velar), plural /ẽx/ (with palatal)

(Hamp, personal communication)

c. $*k^{hi}w > *k^{hw}w > k^{wk}w$ (*or* $> *p^{hw} > pp$) (confined to Hellenic):

Mycenaean *iqqo*, “horse”

Greek *híppos* “id”

It is crucial to note that the Hellenic material shows a compromise of the two usual developments of this cluster. Phonologically, the Hellenic development is perfectly natural, and represents a stage prior to that seen in Italic and Keltic. (The true phonological oddity is the retention of the original contrast, seen in group (3, a). Certainly syllable boundary between $*/k^{hi}/$ and $*/w/$ is crucial to this retention.) The Hellenic forms do not fall into the first grouping. If they did, the form would have been **híkkos* (just what Bonfante’s Illyrian material shows in (3, a)), with simple doubling of the stop for a stop-glide cluster. As far as I know, this small detail has gone unnoticed.

Hamp’s etyma are challenging to more traditional Indo-European tastes because they involve a root with multiple laryngeals, the zero-grade of which of course shows a laryngeal cluster. The Greek *i*-vocalism remains irregular even in Hamp’s analysis, where **éppos* would be the expected reflex of $*/?ek^{wo}-/$. One might modify Hamp’s analysis by assuming that the Greek form, like that of the Latin *a*-form, *acu-*, shows not an *e*-grade, but rather a zero-grade with a schwa-secundum breaking up the consonantal cluster of two laryngeals and a palatal stop. This would not be such a great departure from Hamp’s analysis since he himself suspects that some laryngeal cluster effect has been involved (p. 213). Some such cluster effect (see below) has reduced the stem so that it deviates from Hamp’s *e*-grade for derived forms. This ‘compromised stem’ must represent an old southern IE, more specifically Balkan development in nouns, though something much like it is reflected in the Latin compounding adjectives with *acu-*. A laryngeal cluster analysis will gain support from other forms considered below.

In further support of an old laryngeal cluster for this root, the first member of which is a pharyngeal, one must look to a relic loan in a marginal Northeast Caucasian language. Udi has /e^ʕk^w/ “horse” (Wolfgang Schulze, personal

communication) or /e^ʕk/, /e^ʕk-ur/ “horse”, “horses” (Kibrik & Kodzasov 1990:68, §128). This form has a pharyngealized vowel, /e^ʕ/, which lends support to a Hamp’s reconstruction with an initial pharyngeal for /ǝ₃/. This must be a borrowing from some nearby and very old Indo-European language, because the usual Northeast Caucasian word for ‘horse’ is built upon other forms entirely (Kibrik and Kodzasov 1990:68, §128).

The term for ‘horse’ can now be recognized in terms of ‘onoma-genesis’ as one of several cryptonymic terms for animals (terms intended not to be understood by their referent). Such terms typically use descriptive attributes to name what must have been a new animal. Hamp (pp. 211, 225, n. 2) reckons among such words the bases for “goat” */ǝog-o-/ “that which is driven” [my phonemicization (Colarusso 1997:123-126; 1981:499-552), */h^wak^j-a-/ which varies slightly from that of Hamp], “swine” /suH-/ “breeder (par excellence)” [Hamp’s form], (to which two terms I shall return in closing), as well as three other terms for ‘horse’, all cryptonymic. The first is seen in Latin *caballus* from Gaulish **kaballos* “the attainer, the winner”, derived from the same stem, **kap-* as Latin *caper* “goat”, Umbrian *kaprum*, Old Norse *hafr*, Old English *hæfer* (heffer), Old Irish *cáero* “sheep” from **kaper-* (Hamp 1998:340-341), perhaps also seen as a loan into Germanic which has yielded English *coop*, Middle Low German *kūpe* “tub, basket”. These forms can be paired with those from the base **g(h)ab(h)-ro-*, seen in Welsh *gafr*, Breton *gavr*, Old Irish *gabor* (masc.) “goat”, with *gabor* (fem.) meaning “a (white) mare”, (with a ‘fortified IE’ (Colarusso 1997) original */k^hǝp^h-/, */k^hǝp^h-/, with leveling of ‘voiced aspiration’ conjoined with secondary *a*-vocalism from the pharyngeal), all showing a sense of “penned up” (Hamp, *ibid.*), as with the loan into Germanic. The second is seen in Germanic **xros-* “runner”, English *horse*, cognate with zero-grades reflected by Latin *currō* “I run” (Hamp, p. 226, n. 10a) and with Gaulish *carro* “wagon, cart”, Latin *carrus* “two wheeled wagon” (Watkins 1980:1522, where the bases are reconstructed as **krs-* and **krs-o-*, respectively). The third is seen in Old English *hengest* “nimblest”, Lithuanian *šankùs* “nimble” (Hamp 1990a:226, n. 10a).

What is truly remarkable about Hamp’s etymology for ‘horse’ as ‘the swift one’ is that it has an exact correlate within Northwest Caucasian (NWC). Since the forms in (2) are purely Indo-European, this adds weight to the Pontic hypothesis, the theory that Indo-European and Northwest Caucasian are related at the phyletic level (Colarusso 1997). The Northwest Caucasian developments are, as usual, complex (Chirikba 1996; Colarusso 1994, see *Key* at the end of this article to explain the notation used for these languages), but they lend both phonological and morphological corroboration for Hamp’s analysis.

The Hamp form for ‘horse’ can be aligned with a form that is based on the root for ‘run’ plus an intensifier suffix (4) (with (4, a, d, e) counter to the developments depicted earlier in Colarusso (1994:24-25, §84), which are there morphologically unmotivated). This intensifier suffix is Pontic */-ʔá-/ . This suffix appears clearly in the Ubykh form (4, a) and is needed to explain the cognates in Abkhaz and Abaza (4, e, f), where it appears as the root of the verb. The suffix is lost in the course of Circassian developments (4, c, d), where only the original root survives. This root is again in evidence, albeit with pharyngealization, in the Ubykh nominal in (4, b).

(4) P(roto-)N(orth)w(est) C(aucasian) developments

- a. */ǰə-ʔáá-/ > */ǰʔa/ > */ǰá-/ > (by lagging assimilation within the cluster) */ǰá-/ > (by cluster simplification) Ubykh /ǰá-/ “to run” (early change)
- b. (?)*/ǰa-ǰə-ća-wa/ after-run-more-predicative > */ǰa-ǰə-ćá-/ > */ǰəćá-/ > Ubykh /ǰəćá-/ “who overtakes a wandering beast or an abducted maiden”
- c. */w-ǰə-ʔá-/ > */ǰʔá-/ > */ǰá-/ > */ǰə-ǰá-rə/ horse-run-prolonging sfx > Circassian /šǰarə/ “alarm, pursuit by horse”
- d. */ǰə-ʔá-/ > */ǰá-/ > */ǰa-/ > */pʰə-ǰá-rə/ point/front-run-prolonging.sfx > Circassian /pǰarə/ “pursuit, alarm”
- e. */w-ǰə-ʔá-/ > */ǰʔá-/ > */ǰá-/ > Proto-Abkhaz-Abaza */ǰqʷə-/ < */qʷə/ > Abaza /ǰə-ra/ “to run”, /ǰ-ǰə-ra/ “to race” (either intensive reduplication or < */qʷə-qʷə-/ < */ǰqʷə-qʷə/ with renewed intensive suffix)
- f. */ǰəʔá-/ > */ǰá-/ > */ǰqʷə-/ > */qʷə-/ > */ǰə-/ > Abkhaz “(ašʲtaxʲ-)aa-(rá)” (/ašʲtaxʲ-) ʔa-(rá)/ (after run-(infinitive) = “to pursue, follow”

PNWC (and perhaps Pontic) */ʔ/ may have been facultatively pharyngealized, *[ʔ̠], as in Northeast Caucasian languages, because pharyngealization in Ubykh can arise not only from an old lateral, as in (4, f) (Colarusso 1994:29-30; J. C. Catford, personal communication), but also from an old glottal stop, as in (5).

(5) Pharyngealization in Ubykh from PNWC **/ʔ/

- a. PNWC */w-gə-cóʔa/ class.marker-heart-liver > */w-gə-śʷəʔa/ > West Circassian /gʷə-ʔa-śʷə-ʔa/ heart-sfx-liver-sfx “viandes, meat pie”
- b. PNWC */y-gə-cóʔa-ba/ > Ubykh /gʲəćába/ “liver” (with */-ba/ here an abstract suffix, as in Abkhaz (Old Bzyb) /pʰəş/ “daughter”, /pʰəşşba/ “woman”) [with */w-/ and */y-/ old grammatical class markers]

The Ubykh pair /bá/ (< */bʔə-/), /báqʷ/ (< */báʔ-wa-/), both “big” (and perhaps both showing a variant of the same intensive suffix */-ʔá-/), suggests that the simple Ubykh reflex of PNWC */ʔ/ is /qʷ/. This reinforces the notion of */ʔ/ being facultatively pharyngealized.

The forms in (4) are part of a small family of verbs in Proto-NWC that show this intensive suffix, see (6). This suffix survives in Kabardian, though split by a north-south dialect isogloss into the ‘small’ excessive verb suffix $/-\lambda^w a-/$ and the simple excessive $/-q^w a-/$ (Colarusso 1992:121), with its rounding perhaps showing the aspect/valence prefix seen in (4, b, d).

(6) Some verbs with old intensifier suffix

- a. PNWC $*/\lambda\text{ə-}\lambda\text{ə-}/ > */\lambda\bar{q}'-/ >$ Ubykh $/-\bar{q}'-/$ ‘to die’ [literally ‘lie.down-intensive’]
- b. PNWC $*/\lambda\text{ə-}\lambda\text{ə-a-}/ > */\lambda\lambda a-/ >$ West and East Circassian $/\lambda' a-/$ ‘to die’

The forms in (4) can be projected to the level of Pontic, whence they evolve into Indo-European (the northern branch of the phylum) according to the shifts in (7), yielding Hamp’s proto-forms (1) or (2), with the slight difference that his voiced rounded pharyngeal is here represented as voiceless. (This makes no difference since there is no evidence that the initial laryngeal(s) in ‘horse’ caused voicing of a preceding consonant.)

(7) Pontic shift to PIE

- Pontic $*/w-\check{\chi}\text{ə-}\lambda\acute{a}-/ > */\check{\chi}^w\text{ə}\lambda\acute{a}/ >$ PIE $*/h^w\lambda\acute{a}-/ > /h^w\text{ə}\lambda\acute{a}-/$ by early back-formation (*anit*)

Suffixation with further stress shift would have yielded the forms in (8), which are the “glottalic” PIE versions of those in (2).

(8) Glottalic PIE derived forms

- a. e-grade root $*/h^w\text{ə}\lambda-k^h\acute{w}-s/$ (OeE- $\acute{k}\acute{u}-s$)
- b. restored e-grade derivative stem $*/h^w\lambda-\acute{\delta}k^h-w-a-s/$ (OE- $\acute{e}-\acute{k}\acute{w}-o-s$)
- c. zero-grade stem $**h^w\lambda-\acute{\zeta}k^h-w-a-s/ > */h^w\lambda-\acute{\zeta}k^h\acute{w}-w-a-s/$ (OE- $\acute{\delta}-\acute{k}\acute{w}-o-s$)

Some remarks are in order. On the basis of the other forms one would expect Greek $*\acute{e}\text{ppos}$. In the simplest sense, this /i/ can be thought of as having the status of that seen in such old reduplicated forms as *títhēmi* or *dídōmi*, that is the status of an automatic vocalic filler in the word skeleton. The vocalization to $/-i-/$ suggests the non-phonological element, schwa secundum in the cluster of double laryngeal plus non-sonorant (8, c). This would set the Greek form apart from the other words for horse, but would align it with the Latin form with zero-grade *acu-*, albeit the Latin form is a compounding adjective. Such a zero-stem might be unjustifiable for a noun, and the Greek forms might arise from an e-grade, as in (8, b), wherein the expected development $*\acute{o}\acute{e}\text{ppos}$, has been preceded by special cluster effects, to wit: (1) that the cluster has created a ‘super heavy’ syllable and so compromised the vowel, rendering it more like an epenthetic vowel (Colarusso 1981:484-488);

(2) that the second member of the laryngeal cluster has therefore failed to color this ‘compromised’ vowel, which is reflected in Greek (and supposedly in Illyrian) as /i/; and (3) that the laryngeal cluster itself is reflected by a ‘weak’- /h/ which does not aspirate a preceding consonant (note Bonfante’s (1996:111) form *leúkippos*, rather than **leukhippos*). Such a weak /h/, the norm in Latin, appears to be prone to loss when preceded by a consonant, unlike /h/ from */s(w)/ or from */y/, perhaps because the resulting cluster was excessively ‘heavy’ (*C-əə-) and prone to simplification.

To ‘compromise’ an *e*-grade may seem like a quibbling way of speaking of a schwa secundum, but a true *e*-grade permits the normal ablaut morphology to be observed at the same time that it both parallels the other cognates and can plausibly bear stress. The color of the /i/ itself might be due to the “emphatic palatalization” caused by pharyngeals (Colarusso 1997:125; 1985; 1981:519-520), not strictly speaking by laryngeal coloring effects in the traditional sense. This is an acoustic effect and offers further evidence for the underlying phonological features of the segments involved. Similar arguments might be posed for Latin *acu-* as coming from an *e*-grade with a ‘compromised’ vowel. In this case, however, the pharyngeal has caused articulatory backing to produce an /a/ (cf. Colarusso 1997:125; 1981:515-516, for an earlier explanation).

While these arguments might seem *ad hoc*, historical cluster effects are well known and, by definition, deviate from normal segmental developments. What is crucial here, is that the cluster itself is not *ad hoc*. The expected Greek reflex **oéppos* is not found precisely because the first laryngeal fails to syllabify and remains in a syllable onset as a consonant.

The argument based on the small family of PNWC verbs in (6) can be enlarged with a series of forms based on the root for ‘bend’, see (9) (see also Colarusso 1994:20, §66, 25-26, §86, 27, §90). These give various senses.

(9) PNWC “to bend, curve, turn”

- a. */hə-hə-/ > Ubykh /xəx/ “circle, something round”
- b. */w-hə-ʔə-/ > */h^wq̄’ə-/ > */h^wq̄’wə-/ > Proto-Ubykh*/h^wq̄’wə-/ > */x^{hw}q̄’wə-/ > */x^wq̄’wə-/ > Ubykh /-q̄’w-/ “to bend curve” (with */h^w/ > Proto-Ubykh*/h^w/ and then perhaps */x^{hw}/ > */x^w/)
- c. */bə-hə-ʔə-(r)-dá-/ > */bəh̄q̄’(ər)dá-/ > Proto-Ubykh */bəh̄q̄’(ər)dá-/ > Ubykh /bəq̄’(ər)dá-/ “to roll (up)” (*/bə-/ “a hollow space”)
- d. */h-a-ra-/ > Circassian /ha-ra-/ “to gyrate”
- e. */w-h-a-/ > */h^wa-/ > Abaza /q̄^{hw}a- / “to curve”, Proto-Circassian */h^wa-ra-/ > */x^{hw}a-ra-/ > */x^wa-ra-/ > West C /fara-/ , Kabardian /x^wa-ra-/ “to turn”, West Circassian /-wəfa-/ , Kabardian /(zə)wəx^wa-/ “bend (oneself)”, with renewed /w-/
- f. */w-hə-hə-da-/ > */h^wə-h^w-da-/ > Ubykh /x^wəx^w-da-/ “move from side to side”

g. */w-ḥə-r-ḥə-r-da-/ > */h^wə-r-ḥ^wə-r-da/ > Ubykh /x̄^wər̄x̄^wər-da-/ “to move in a sinuous fashion, to undulate”

Where */-a/ is either a “detransitivizer” or “in”;

*/w-/ is the continuous aspect or a valence/action intensifier/verbalizer

*/-r(a)-/ gives a smooth sense to the motion

*/-da-/ is prolongation suffix

PIE */k^{hw}ók^{hw}las/ (*k^wék^wlos) “wheel” would seem to belong here, but would require a Pontic-like source */q̄^{hw}óq̄^{hw}-la-/ with the Pontic instrumental */-la-/. One cannot use the Pontic root “to bend, curve, turn” in (9) for both laryngeal clusters within PIE and for a root with labio-velars. Pontic does, however, show a stop reflex for this root: a pharyngealized aspirated uvular stop is in fact found in Abaza /q̄^{hw}a-ra/ bend, curve-infinitive (see (9, e), and as such represents a central development of this sound, somewhat removed from the Indo-European zone presumably further to the north. I must conclude that the IE word is of PIE antiquity, and is in fact of Pontic origin, but that it is an early loan from further south within the phyletic zone. It might have come into early PIE along with the artifact.

One can now include here the root for “spindle”, *krek, which in an extended form *krek^wlos underlies Germanic *xrexulaz, as seen in Old English *hrēol*, Modern English *reel* (Watkins 1980:1524). Such a form is a good “south” Pontic doublet for “wheel”, but shows the infix */-r-/ for smooth motion, */q̄^{hw}ə-r-q̄^{hw}-la/. The original would have been Pontic */(w-)ḥə-r-w-ḥ-la/. Both the sense and form of this word beg that it be linked with that of “wheel”, and only a Pontic analysis can do this. Both may now be possibly seen as very early artifact loans into PIE, (but see remarks on “water, “river” below).

Remarkably, the forms in (9) can be extended to explain one of the words for PIE “fish”, (see Hilmarsson 1982, and Winter 1982 for elaborate alternatives to the following). To do thus we must take the Greek form as a hidden example of Grassmann’s law, as in (10, a). The word then parallels Greek /híppos/ precisely and shows either a “compromised” *e*-grade stem or a zero-grade one with the non-phonological element, schwa secundum.

(10) PIE “fish”, */ǵǵ-d^h-g^hw-ǵ₄-/ (*HH-dh-ghw-A-)

a. */ǵǵ-d^h-g^hw-ǵ₄-s/ > Proto-Hellenic *hit^hk^hús > *hik^ht^hús > Greek ik^ht^hús

b. */(ǵǵ-d^h-)g^hw-ǵ₄-ⁿy-/ > Old Prussian *suck(ans)*, Lithuanian *žuv(is)*

c. */(ǵǵ-)d^h-g^hw-ǵ₄-n-/ > Armenian *dzuk(n)* ([džúkɲ])

The second element of the compound, k^hús, may be an abstract deverbal noun based upon the root seen in k^hewō “to pour, stream, flood”. Thus Greek ik^ht^hús would be an alternate to *pey-kⁱ-sk-os, “trout”, “the spotted one” (Hamp 1973; Bammesberger 1996 tries to relate the word to *ap- “water”).

Hamp (personal comm.) takes this *Dehnstufe* back to a simple **pikⁱ-sk-*, with a stem **p()ykⁱ-* “(be/make) colored/variegated”, an appropriate cryptonym for the colorful trout. The meaning of **/ǰǰ-d^h-g^hw-ǰ₄-/*, on the other hand, would be “stream wriggler”, a perfect cryptonymic form for fish in general.

The form *ikfīnos* “kite” (Hamp, personal communication), denoting a bird which exhibits a spiralling flight pattern typical of large raptors, can perhaps be linked to the root underlying ‘fish’. The source here, within the history of Greek, would have to be something like **/hit^h-kīn-/* turning-movement > **/it^h-kīn-/* > **/itkīn-/*, with the second element of the compound being an old agentive nominal with the sense of the root seen in the (causative) *kīneō* < **kīneyō* “set in motion, move”. This form would then be morphologically parallel to that for ‘fish’ above in that it would be a compound with the second element of a deverbal abstract noun. Its sense would be “spiralling mover”, an apt cryptonym for a kite.

Since the putative invocation of Grassmann’s Law in these two forms obliterates the evidence of any **/h-/*, these words cannot strictly speaking be said to offer corroboration for Hamp’s thesis. Nevertheless, if one does acquiesce to this idea, a morphological and semantic pattern emerges which accords with other words in a striking fashion and which suggests that we are in fact dealing with cognate sets at a phyletic level.

First, the initial */i-/* in the Greek form, assuming it to have arisen from a cluster **/ǰǰek-/*, or **/ǰǰk-/* via schwa secundum, can now be matched against that in ‘horse’, and Hamp’s hypothesis for this word can now be seen to posit the law in (11), which leaves roots with single laryngeal initials, such as (1, b) or (2, b) without an */h/* but merely with an initial vowel, which of course is just what is needed to explain the range of Greek data.

(11) Double Laryngeal Law in Greek

PIE **/ǰǰ-ǰ-C-/* > Greek */híC-/*

Hamp (personal communication) suggests, **OE-C- > hi-C-*, (presumably also **EE-C- > hi-C-*), but **(H)A-C- > ha-C-*, (presumably also **AE-C- > ha-C-*), as in *haptō* “touch”, or “tie together” (17, f, g). The Pontic development into PIE can now be seen to be that in (12), with the stem upon which both ‘fish’ and ‘kite’ are based being the cryptonymic “the undulating one”, “the one who gyrates”.

(12) Pontic **/(w-)hə-ʔə-dá-/* > **/h^(w)ʔ-da-/* or **/h^(w)h^(w)-(ə)da-/*
 “undulating one” > PIE **/ǰǰ-ə-da-/*, or **/ǰǰ-da-/* (with schwa secundum)

This is the glottalic version of **/ǰ₂ǰ₂-ə-dh-/*, or if rounded, of **/ǰ₃ǰ₃-ə-dh-/*, with later compounding with **/-gw-x-/*. The velar stops in Old Prussian and

Armenian may be allophones of */x/, a form of *A (Colarusso 1997:123-126, (7), (10), (11)).

Second, if “fish” and “kite” are accepted, then the marginal (within IE) word for “snake” in (13) may also be seen as another instance of this root, both simple and reduplicated (13, a) or intensified (13, b), always attested as an i-stem, the reflex of an old abstract suffix that goes back to Pontic */-ya/, perhaps */-ĝa/ (Colarusso 1997:127, (16)). The advantage is that this explanation encompasses the variant for “snake” with initial /i/ in Greek, seen in the names *Iphigeneia* or *Iphikles*.

(13) Pontic “snake”, “the coiling one”

- a. */w-hó-g-y-/ > PIE */h^wó-g-y-/ (*ǵ3é-gh-y-) > Greek *óphis*, Sanskrit *áhih*, Avestan *aži*, Armenian *iž*
- b. */w-hə-hə-g-y-/ > PIE */h^wh^w-ə-g^w-y-/, */h^wh^w-g^w-y-/ (*ǵ3ǵ3-e-gh^w-y-) > Proto-Greek **hiphi(geneiā)* > *iphi(geneiā)*

Third, ‘Hamp’s Law’, as we might call the laryngeal cluster development in (11), may now be seen as a southern, relic effect confined to Greek, Latin, and perhaps Illyrian. In Latin some forms of ‘wavering-h’, hitherto easily dismissed as weak pronunciations of /h/ from PIE *gh, seem to reflect an old laryngeal cluster instead. The ‘laryngeal cluster-h’ emerges as a natural phonetic rendering of derived forms where the *e*-grade has failed to emerge or has otherwise gone missing for reasons that are obscure to me. Such an interpretation is possible if one sees the IE word for ‘elbow’, ‘forearm’ as based upon this same Pontic root for ‘to bend, curve’ (14) (where no wavering-h is attested) and extends this etymon to encompass the word for ‘elbow’, ‘shoulder with upper arm’, (15), where wavering-h is found but cannot be taken back to *gh, that is where ‘non-velar-h’ is involved. [I am indebted to Kevin Tuite for insights regarding Latin /h/.]

(14) Pontic ‘elbow’, ‘forearm’

[Pontic */w-hə-ʔə-/ > PIE */h^wəʔ-/ (> */ō-/), */h^wʔə-/ , */h^wh^wə-/]:

- a. */w-hə-ʔ-l-ə-n-aʔ(a)/ > PIE */h^wə-ʔ-l-(ə)-n-/ (*ǵ3eǵ1-l-(e)n-/ > Greek *ōlénē* “elbow, lower arm” [with old abstract suffix */-aʔ(a)/ (Colarusso 1997:128 (22))]
- b. */w-hə-ʔ-l-ə-n-(a)ʔa/ > PIE */h^wʔ-ǵ1-n-/ (*ǵ3ǵ1-ǵ1-(e)n-/ > Latin *ulna* id.
- c. */w-hə-(ʔ)-ə-l-n-aʔ(a)/ > PIE */h^w(ʔ)-ə-l-n-aʔ(a)/ (*ǵ3(ǵ1)el-n-eǵ2/, *O(E)el-n-eA) > Proto-Germanic **alinō* (Old English *eln*, etc.) id.

(15) Pontic ‘shoulder with upper arm’

- a. */w-hə-ʔ-m-/ > PIE */h^wəʔ-m-a-s/ (*ǵ3éǵ1-m-o-s/) > Greek *ōmos* (with acute accent in Homeric)
- b. */w-hə-ʔ-m-/ > PIE */h^wʔ-m-əs-/ (*ǵ3ǵ1-m-o-s/) > Latin (*h*)*umerus*

Fourth, remarkably Hamp’s etymologies for “arm, shoulder” (Hamp 1982)

seem to make use of the same Pontic root */hə-/ (see (9)) in both plain and reduplicated forms, (16). The presence of */w-/ in some of the preceding examples simply lends the Pontic form a degree of intensity, which with the suffix intensive /-ʔ(a)-/ is virtually pleonastic. The forms in (16) would therefore be older within Pontic.

(16) Pontic “joint”, “arm”

- a. */h-a-ra-/ > Circassian /ha-ra-/ “to gyrate”
- b. **/w-h-a/ > */h^wa-/ > /h^wa/ > */š^hw^a-/ > Proto-Circassian */wə-š^wa-/ > West-Circassian /-wəfa-/ (Kuipers 1975:63, §88) “to bend something” (Ubykh /š^waráy-/ ‘circle, something round’, for expected */š^waráy/)
- c. */h-a-r-h-/ > PIE */h ar-h-ma-/ (*/*ǵ₂o-r-ǵ₂-mo-/)> Germanic *armaz, (English *arm*), Old Church Slavonic *ramo*;
- d. /hə-ra-h-/ > PIE */h-r-h-má-/ (*/*ǵ₂-r-ǵ₂-mó-/)> Sanskrit *īrmá-*, Avestan *arəma-*, Old Prussian *irmo*,

The Pontic root seen in (9), specifically in its simple form in (9, d), suffices to explain all the IE forms. The only possible counter example to (16) is West Circassian /-wə+q^wə+dəy-/ valence+flex(?) + joint, “to stretch (oneself)”. This may show */-q^wə-/ for “bend”, (for example */šha-q^wa-/ head-bend.down = “to doze off” (Kuipers 1975:72, §105)), pointing to a possible Pontic */-wə-qə-/, but its most likely original meaning is “to pull, stretch”, as can be recovered from /-t^hay-q^wə-/ on-pull = “to cover something” (Kuipers 1975:71, §105).

Pontic offers another basis for the solution to yet another difficult Indo-European problem which involves a series of terms that seem interrelated. In an effort to link forms that appear cognate but have divergent meanings Hamp (1982) follows the presumed semantic chain of ‘turning point’ > ‘joint’ > ‘join’ > ‘fitting’ > ‘fittings (for a chariot)’ > ‘wheels for a chariot’ > ‘chariot’, or starting from ‘join’ > ‘clamp’ > ‘rigging’, or ‘join’ > ‘bond’ > ‘friendship’ > ‘league’. This enables him to link as cognates to ‘arm, shoulder’ a series of Greek forms, and two Armenian ones, such as *ármenos* “fitting, join”, *árthron* “joint, (eye) socket”, *arthmós* “bond, league, friendship”. These forms could well go back to non-reduplicated Pontic */h-a-r-/ with various PIE enlargements, including */-d-/ (traditional */-dh-/), the Pontic prolongation suffix (see (9, c, f, g)). One of his target words, that for “clamp, fastening”, *harmonía*, shows an /h-/ which does not aspirate a preceding stop, *bēt-ármōn* “dancer” (with the first term distantly derived from *bain-* “to step”, so that the compound means “fitting steps (together)”). The root involved here also appears as Greek *hármos* “door fastening”, *háрма(та)* “chariot”. Hamp relates these to Armenian *yarmar* “fitting” and *armukn* “elbow” as *anit* bases derived from PIE *a-rs-mo- with the */-s-/ linking affix accounting for an ‘extruded’ (my term) initial /h-/ in Greek.

This may well be correct, but to stretch this matter to the verb *ararískō* “join, tie, fasten”, perfect *arāra*, presents a problem because one must then assign a supposedly derivative meaning to a verb form which shows its antiquity by its reduplication in the absence of a simple stem.

An alternative view of these words may be taken if one examines the exact sense of *hárma*. It is usually associated with Mycenaean *[ha]a[r]mo* “chariot wheel”, but this gloss may be uncertain. The term, if a match, may simply refer to some paired item kept on hand for chariots. The classical term usually occurs as a collective, *hármata*, even when referring to a single chariot. One of its senses seems to be the “chariot and horses, the team” (Liddell 1889:117), found especially among the dramatists. I would suggest that this word and its related terms go back to a sense “to tie, to fasten together”, reflected as the oldest sense of what is obviously an old verb, *ararískō*, with an early specialization of “to harness”. If we adopt this sense, then the evident Latin cognate, *armentum*, is suddenly explicable, for this means “cattle for ploughing”, (only later “cattle” in general), in other words, “a team of oxen”, just as the Greek form must mean “a team of horses”. There is then an obvious Pontic source for these words, as shown in (17).

(17) Pontic ‘to tie together’

- a. */p^hə-χə-/ point.locus-tie > Circassian /-pχə-/ “to tie (especially the girth band on a saddle)”
- b. */č’a-w-χa-/ together-aspect-tie > Proto-Abkhaz-Abaza */-č’a-χ^wa-/ > Abkhaz /a-č’a-ħ^wa(-rá)/ “to join, stitch together” (cf. Abkhaz /a-č’á/ “agreement”)
- c. */wə-χa-la-/ aspect-tie-iterative > Proto-Abkhaz-Abaza */-χ^wa-la-/ > Abkhaz /a-ħ^wá-la(xa-ra)/ “to tie together, fasten”
- d. */χə-r-χə-r-əya-šχa-/ > PIE */ħə-r-ħə-r-əya-šχa-/ (*ǵ₂e-r-ǵ₂e-r-iyō-sko-/ tie-smooth-tie-smooth-iterative-intensive > Greek *ararískō* [see Colarusso, 1997:135, 138, for the glossing]
- e. */χ-r-ə-χ-r-/ > PIE */ħ-r-ə-ħ-r-/ (*ǵ₂-r-eǵ₂-r-/ > Greek *arāra* “tied”
- f. */χə-ʔ-ə-r-ma-/ > PIE */ħʔ-ə-r-(s)-ma-/ (*ǵ₂ǵ₁-e-r-(s)-mo-/ > Greek *harmó-*, *hárma(ta)*, *harmonía*
- g. */χə-ʔ-ə-r-m(ə)n-t^h(a)n/ > PIE */ħʔ-ə-r-(s)-m(ə)n-t^h(a)n/ (*ǵ₂ǵ₁-e-r-(s)-m(e)n-t(o)n/ > Greek *hármata*, Latin *armentum*

The Greek forms in (17, f, g) are another instance of Hamp’s law, wherein the ‘compromized’ /e/ vowel (or e) has been colored to an /a/ by the leading laryngeal of the laryngeal cluster (see (11) and Hamp’s remarks thereon).

In addition it is quite possible that forms such as *árthron* “joint, (eye) socket”, and *arthmós* “bond, league, friendship” are also hidden instances of Grassmann’s Law, that is that they arose from *hárthron* and *harthmós*. The sense of the former, however, is better suited to that for “turn/joint”. The sense

of the latter might indeed reflect a reduplicated root, such as in (17, d, e), although a simple root, as seen in Northwest Caucasian (17, a, b, c), would match the sense of a single bond better. The old Pontic palatal */x̂/ is one of the late *a*-coloring laryngeals (Colarusso 1997:124, (10)). That it has fallen together with in the history of PIE accounts for the similarities of the words for ‘arm, shoulder, joint’ to those for ‘tie together, team, bond’.

Fifth, the emerging picture of double laryngeal clusters and the southern purview of Hamp’s law gains further support when we turn to another form with non-velar wavering-*h*, seen in (18).

(18) Pontic ‘wet’

- a. */w-həʔ-ma-/ > PIE */h^wəʔ-ma-/ (*/ǵ₃éǵ₁-mo-/) > Greek *ōmós* “raw” (earlier “wet”?)
- b. */w-hʔ-ə-ma-/ > PIE */h^wʔ-ǵmə-/ (*/ǵ₃ǵ₁-ǵ-me-/) > Latin (*h*)*ūmēre* “to be wet”, and (*h*)*ūmor*

The form in (18, a) is an example of an *e*-grade of a thematized non-verbal derivative (Hamp 1990a:213), so that the laryngeal root must be (in traditional terms) **OeE*-. In (18, b) the wavering-*h* can be seen to be a result of levelling between the two grades of the root which has also resulted in /-ū-/. Thus the assumption that Greek *ikthús* was a hidden instance of Grassmann’s law has also set some peculiar details of Greek and even of Latin into a systematic context.

There is one further extension of this argument that is tantalizing at the same time that it is startling. The root and affixes used in (18) would appear to be those for ‘to curve/bend’ with an intensive suffix, but the distant reflexes in Indo-European pertain to ‘moisture, wetness’. This semantic shift may seem puzzling, but one might imagine some sense of ‘curving’ going to ‘undulating’, thence to ‘wave’ and finally to ‘water’, ‘moisture’. Yet one more item corroborates this line of semantic argument.

If we start from the zero-grade in (18, b), or more precisely with this zero-grade suffixed with /-t’-/, then we may have an instance (19) of Hamp’s law extending to Greek /hu-/. Here either a */ʔ^w/ has yielded /ʔw/, wherein the */-w-/ has become /-u-/, or the *o*-coloring laryngeal has simply colored an earlier */-i-/ to /-u-/ (see Colarusso 1981:527-529, for examples of */ʔ^w/ > */ʔw/). Benveniste’s (1962:159) linking of “water” to the Avestan word for “spring”, (19, d) now gains greater plausibility.

(19) “Water” in early PIE

- a. */h^wʔ-ət’-/ > */ʔ^w-ət’-/ > */ʔw-et’-/ (*/ǵ₁w-ed-/) > English *wet*, Armenian *get*, Irish *uisce*, Phrygian *bedu*
- b. */h^wʔ-at’-/ > */ʔ^w-at’-/ > */ʔw-ot’-/ (*/ǵ₁w-od-/) > English *water*, Gothic

- wato*, Old Icelandic *vatn*, Russian *voda*, Hittite *wātar* (note \bar{a})
- c. */h^wʔ-tʰ-/ > */h^wʔ^w-tʰ-/ or */(h^w)ʔw-tʰ/ (*/*₃ʔ₃-e-d-/ , */(ʔ₃)ʔ₁w-d-/) > Greek *húdōr*, Sanskrit *udán-*
- d. */h^wʔ-tʰ-/ > */(h^w)ʔ^w-tʰ-/ > */(h^w)ʔw-tʰ-/ (*/*₁w-d-/) > (Dehnstufe) */ʔew-tʰo-/ > Avestan *aoda* “spring”

The weakest aspect of (19) is the Pontic suffix */-tʰ-/ , which has no obvious etymology, but for the time being might simply be seen as an enlargement. It may arise from a stative copula */-t^ha-/ , and have undergone glottalization from the preceding */-ʔ-/ , but this would need separate supporting forms from within Pontic to elevate it above the level of an *ad hoc* explanation. It occurs only as an abstract suffix confined to Abkhaz, with rounding (labialization), /-tʰ^wa/. The suffix */-d-/ , however, is also opaque even at the oldest levels of Indo-European, so we merely continue an old problem here to a new level.

With the exception of the Greek form (19, c), the material in (19) justifies nothing more elaborate than */ʔw-(ə)tʰ-/ (**Ew-(e)d-*), but this would leave these forms isolated not only from those in (18), but would also shut the door on another promising prospect offered by Pontic. If the forms in (19) are embraced in their more elaborate, multi-laryngeal form, then they might be linked to PIE **ak^wā-* “water” (Latin *aqua*, Gothic *ahva*, Russian *Oká*), which also shows an initial */h-/ (*/*₂-/). In fact there is a West Circassian word for “watering trough” /haq^hw^a(aś^wa)/ (with (-a-ś^wa) -connective.vowel-drink), which offers a form that would precisely reflect the expected Pontic form */ha-q^hw^a/, which could underlie PIE **ak^wā-*. Moreover, the word has also been reanalyzed as /ha-q^hw^aaaś^wa/ so that it means dog-feeding.trough “feeding trough for a dog” (Kuipers 1975:71, §104). Unfortunately, this exact form stands in isolation within NWC words for ‘water’, ‘river’. A closer correlate may be the Abkhaz word for “stoney river bank” /(a)qʰ^wára/, with a derivational suffix /-ra/ on a root also seen in such river names as *Chaqʰ^wa*, *Achida-qʰ^wa*, *Maltaqʰ^wa*, *Boqʰ^wa*, *Achqʰ^wa* (all in adjacent Mingrelia, which was originally Abkhaz-speaking), and in *Abzhaqʰ^wa*, *Tasraqʰ^wa*, and *Sechqʰ^wa*, all within Abkhazia proper (Shamba 1998:55). The bare root itself may be seen in the native name for the city of Sukhumi, /aqʰ^wa/, which according to native tradition means “water”, i.e., “the place by the water/coast”, parallel with Keltic *dubrā* > *Dover* (Hamp, personal communication).

The form in Circassian points toward */haq^hw^a/ or */haq^wa/ while those in Abkhaz suggest */-ʔ^wa/. These might be reconciled with the forms in (19) to yield an ancient Pontic word for river, */hə-ʔo-/ , */hə-ʔa-wa-/ , or */hə-w-ʔa-/ , with segments “bend” and /-ʔo-/ “water” (?), or /-ʔa-/ “intensive”, the

aspectual /-w-/, or the predicative /-wa-/.¹ This compound stem, meaning “river”, would then coincide with the ones used in (18) and be prior to the sense of “water”. As with the words for “wheel” and “spindle” above, I am forced into the position that PIE **ak^wa* might be another borrowing. We might note that if the borrowing hypothesis is true, then the Abkhaz form /aq^wa/ also supports the notion that the Latin form /aquā/ may have had a true uvular. On the other hand with three possible loans for words of otherwise good IE pedigree (“wheel”, “spindle”, and now “water, river”), a possible shift suggests itself either within PIE or of Pontic **h^{ʔw}/* > PIE **q^{hw}/* (**k^w*) under conditions that have yet to be clarified.²

The application of Hamp’s law in (19, c) explains a split in the behavior of **w-* in Greek: some reflexes show /hu-/ while others words simply drop **w-*. The cases of simple **w*-dropping are instances of single initial **w-* in Greek, lost without leaving an aspirated onset, such as in “spring” (PIE **wes-r-*), Greek (*w*)*éar*, (Armenian *garun*, Latin *vēr*, Lithuanian *vasara*, Sanskrit *vasantáḥ*), or in “work” (PIE **wer-g-*, **wor-g-*) Greek (*w*)*érgon*, (*w*)*árgon* “deed”, *organon* “tool”, (English *work*, Armenian *gorc*, Avestan *vərəz-*), (where the aspiration in Greek *hredz-* “to do” must simply be due to the initial /r/), or in “to know”, “idea” (PIE **wey-d-*, **woy-d-*, **wy-d-*), Greek *eid-on*, *oid-a*, *íd-men*, (English *wit*, Sanskrit *veda*, Latin *vid-*, Armenian *git-*).³

Note too that Benveniste (1962:156) attempts to link “water” to a root **ǵ₂ew-* “weave” specifically by the suffix /-d-/ (semantically opaque in Indo-European, as is its correlate **t’-* in Pontic, see comments on (19) above) which converts the sense into “to flow, run like a rivulet”, with the side to side

¹ A root **-q’o-* would yield Proto-Abkhaz-Abaza **-ǰ^wa-* > common Abkhaz-Abaza **-h^wa-* “to say” (Colarusso 1977:142, (71). Abkhaz and Abaza uvular stops (all ejective) come from an original laryngeal **ʔ/*, as with the “horizon of interest” preverb seen in /(*á*-)q’*a*-c’*a*-(ra)/, hand-set- = “to make\do”, /-q’a-/ cognate with Circassian /-qa-/ “horizon of interest” (deglottalized in preverbal position; Colarusso 1984). Note this morpheme in (24, a, b). Also, note the Abkhaz and Abaza developments in (4, e, f), where a uvular stop (albeit assimilated from a laryngeal by a preceding uvular fricative) has yielded a pharyngeal.

² The developments in (9) would make a conditioned shift of **h^{ʔw}* to **k^w* unlikely. We can come very close to having our cake and eating it too if we bear in mind that at the level of Pontic, that is, at the level of a pre-Indo-European family from which both Proto-Indo-European and Proto-Northwest Caucasian descend, the ‘laryngeals’ exhibited allophonic variation between spirants and stops (note with Italic, Latin *senex* and *senātus*) at the regional level. Therefore, the ‘deviation’ of “wheel”, “spindle”, and “water, river” looks significant only if we persist in an Indo-European perspective.

³ Note Polomé’s (1965:22) discussion of Edward Sapir’s ideas in this respect with regard to such words as Greek *hestia*, Latin *vesta*. See also Hamp’s (1974:253) discussion of these words.

motion of a shuttle prolonged to that of flowing water. “To weave” itself also has a phyletic cognate in Pontic, (20).

(20) ‘To weave’

- a. */ǰa-/ > PNWC*/ǰa-/ > common Circassian/-ǰa-, Abkhaz /-ħa-/ “to weave”
- b. */pǰ-ǰa-/ > common Circassian /-pǰa-/ *id.* (for */pǰ-/ note Ubykh /-pa-/ “to weave”)
- c. */ǰǰ-w-/ > PIE */ħǰ-w-/ (*ǰ₂ew-/) > */ħw_ǰb-/ > Greek *huph-*, but thematized *e*-grade derivative */ħw-ǰb-/ > English *web*

The forms in (20), however, argue that Benveniste’s link between “to weave” and “water”, despite his semantic parallels, is due in this case to homonymy at the level of Indo-European, where Pontic uvular */ǰ/ and pharyngeal */ħ/ have fallen together into PIE */ħ/ (*ǰ₂/).

Thus, starting with ‘horse’ and extending the pattern evident there, we have come to a deep and wholly unexpected link between ‘fish’, ‘moisture’, ‘river’, and by extension ‘water’, and ‘wet’, which also encompasses the words for ‘snake’ and ‘(arm) joint’, at the same time that crucial details of the historical phonology of Greek and Latin are also explained. None of this would have been possible without projecting the whole range of problems back to the phyletic level of Pontic.

Finally I would like to examine the other animal names mentioned by Hamp (1990). Pontic forms that may underlie ‘goat’, which Hamp takes back to PIE */ħok^j-o-/ (*ǰ₂og^o-) “(that) which is driven”, (21), (the suffix */-k^j-/ in verbal morphology means “after, behind” (Colarusso 1992:103, §184, a)), and “swine”, which Hamp takes back to **suH-* as “breeder par excellence”, (22), (Hamp 1990a:225, n. 2). Both of these are, of course, cryptonymic animal names. The same may be said for ‘sheep’, which appears to be based on an old verb ‘to set to pasture’. These three names are also of a much older date than the form for ‘horse’ (Hamp 1990a:211) and should also be prime candidates for showing phyletic links.

First, if a Pontic verbal base of ‘to drive, push’ is assumed, then the PIE forms become transparent, even down to the ‘irregular’ */-y-/ seen in Greek and Armenian. ‘Goat’ is then ‘the one driven from behind’ (without */-y-/) or ‘the beast driven from behind’ (with */-y-/). This is a fine cryptonym and suits the goat’s stubborn nature quite well at the same time that it links the animal name to a verb, ‘to lead’, that is clearly related.

(21) Pontic ‘to drive’

- a. */w-ǰǰ-/ > PNWC */-ǰ^wǰ-/ > Ubykh /-ǰ^wǰ-/ (written “-s^wǰ-” [Colarusso 1992:148, (5, i and j)]); common Circassian /-ǰ^wǰ-/ “to drive, push”, also “fit” > West Circ. /-f-/ , Kabardian (East Circ.) /-ǰ^wǰ-/

- c. */ \hat{x} a-k^ja-/ > PIE */ \check{x} ak^ja-/ (> */ \hbar ak^ja-/) (both */ \check{a}_2 e \acute{g} o-/) > Greek *ágō*, Latin *agō* “to lead”
- d. */w- \hat{x} a-k^ja-/ > PIE */ \check{x}^w ak^ja-/ (> */ \hbar^w ak^ja-/) (both */ \check{a}_3 e \acute{g} o-/) > Lithuanian *ožys*, Sanskrit *ajā-* “goat” ((that) which is driven or led from behind)
- e. */w- \hat{x} a-y-k^ja-/ > PIE */ \hbar^w ayk^ja-/ (* \check{a}_3 ey- \acute{g} o-/)> Greek *ayg-*, Armenian *ayc* ((that) animal which is driven or led from behind)

The Pontic verbal suffix */-y-/ (as a nominal suffix “bad, shitty”), is used of animals (Dumézil and Namitok 1939:23, with West Circassian /- \mathcal{I}^w a-/ “to say”, /- \mathcal{I}^w a+yə-/ “to bleat” [my corrections]). This offers a ready explanation for the “irregular” */y/ seen in some of the Indo-European forms, even perhaps in that for “fish” */pey-k^j-sko-/ (Hamp 1973).

The PIE word for ‘swine’ is difficult, (Hamp 1990, a:225, n. 2), with some reflexes, such as Keltic **sukko-* (borrowed into English as *hog*; Watkins 1980:1544), showing no trace of laryngeal, (but see Hamp 1990, b:298, where this word is aligned with northern European substratal forms in */-u-/ , */*suku-* / > */*sukko-*). If a laryngeal is admitted as primary, however, then a match can be had at the Pontic level. The form is based on the verb “to breed”.

(22) Pontic “swine” (“good breeder”)

- a. */ \mathcal{I} ə \check{c} a+w- \check{x} o-/ > PIE */ \mathcal{I} su- \hbar^w a-/ (* \check{a}_1 s-w- \check{a}_3 o-/)good-breeder
- b. */ \check{x} o-/ > (PNWC) common Circassian /*(ba)- \check{x}^w -/* “ripen, increase, happen”

The form in (22, a) takes a Pontic form based on the NWC evidence for “good” and expands it to accommodate the PIE etymology based on “to be” plus a participial suffix, */ \mathcal{I} əs-w-/ , */ \mathcal{I} s-w-/ (Colarusso 1997:143, §74). The unspecified laryngeal in Hamp’s **suH-* can now be seen on the evidence of Pontic to have been */ \hbar^w / (* \check{a}_3 or *O). Therefore, the form **swXōn*, **swXn*, reconstructed by Winter (1965:192) on the basis of Tokharian B *suwo* “pig”, *swaññe* “swinish”, may show *-ō- as a result of this stem laryngeal, and not as a reflex of a laryngeal in a suffix. In other words, from the perspective of Pontic, the Tokharian forms, alone of all the IE reflexes, show */sw(e)- \hbar^w -n/, and therefore lend support to the match at the phyletic level.

Finally, the old layer PIE word for ‘sheep’ may be based upon a verb whose original sense was ‘to graze’, ‘to set to pasture’, ‘to allow to graze’, as in (23).

(23) Pontic ‘to graze’, as a causative ‘to set to pasture’, ‘sheep’

- a. */-w- \check{x} ə-/ > PNWC */- \check{x}^w ə-/ > common Circassian */-(γ a)- \check{x}^w ə-/ “to (set to) graze”; Abkhaz-Abaza /-(r)- \hbar^w -/ *id.*
- b. */- $\check{\lambda}^h$ a- \check{x} ə-/ > Proto-Ubykh */-la- \check{x} ə-/ > */-l \bar{x} ə-/ > Ubykh /- \bar{x} -/ (with the deixis marker seen in (4, f), a rare good cognate between PNWC and proto-Kartvelian */ $\check{\lambda}$ a/: Georgian-Mingrelian /sa... (-o)/, Svan /la-/)

- c. */-w-ǰə-a-w-y-/ aspect-graze-connective-predicative-abstract.suffix > PIE */ǰ^waw-y-/ (*ǰ₃ow-i-)> Luwian *hawis* “sheep”, Hieroglyphic Luwian *hawas*, Latin *ovis*, Old English *ēowu* “ewe”, Greek *óis* “sheep”, Russian *ovcá*, Armenian *hoviw* “shepherd”

The Indo-European history shows a semantic extension in Armenian to “shepherd”, which does not occur with the other animal names. The root in Northwest Caucasian shows exactly the same extension, as in (24), (cf. Colarusso 1994:21, §§72, 73).

(24) Pontic ‘shepherd’, ‘herder’

- a. */ǰá-w+ǰ-a-/ in.hand.preverb-valence(= “let”)-graze > Proto-Circassian */ǰaǰ^wa/ > West Circ. /ǰaaǰ^wa/, Kabardian /ǰaǰ^wa/ “shepherd”
 b. */ǰa-w+ǰ-á-/ > */ǰaǰ^wá/ > Proto-Ubykh */ǰǰ^wá/ > */ǰǰ^wá/ > */ǰ^wá/ > */-wə+ǰ^wá-/ > Ubykh /awǰ^wá-/ “shepherd”, /-wəǰ^wá-/ “to tend flocks”
 c. */ǰə-ǰə+ǰá/ graze-lie+excess(see (6)) > */ǰə-ǰ^wá/ graze-man (“herder”)> Proto-Abkhaz-Abaza */ǰəǰ^wá/ > */ǰǰ^wa/ > Abaza /-ǰǰ^wa/, Abkhaz /-ǰǰ^wa/

Given the original sense of ‘(allowing to) graze in general’ as posited for Pontic, it is no accident that this base and this alone among a set of names for grazing animals has exhibited semantic extension to ‘shepherd’.

The etyma offered here serve greatly to strengthen the plausibility of the Pontic hypothesis, as well as to demonstrate its utility if used carefully. Not only have they offered further items that meet the solid requirements of plausible cognates, both in phonetics and in semantics, but they have also offered straightforward phonological explanations for some of the most baffling complexities within Indo-European. These have set Indo-European specialists upon elaborate, albeit erudite, efforts to explain such stubborn problems within this family entirely in terms of internal morphological developments. The present Pontic cognates are not only transparent, but in many cases are ‘mature’ enough that homophones can be recognized within Indo-European, while even loans between Indo-European and Northwest Caucasian, in either direction, can perhaps be distinguished from phyletic cognates.

Phyletic relationships are characterized by enough time depth that the old familiar lineaments of the families involved are no longer visible. So too with Pontic in regard to Proto-Indo-European and Proto-Northwest Caucasian. Once, therefore, the non-Indo-European appearance of Pontic loses its strangeness, the explanations it can provide for Indo-European developments and irregularities, from the overall nature and behavior of the laryngeals down to specifics such as deviant lexical items, are on the whole, simpler and more convincing than many of those arrived at within Indo-European itself.

KEY TO NOTATION

- ˆx is a voiceless palatal spirant,
 ˆx^w is a voiceless rounded palatal or velar spirant (the difference is sub-phonemic),
 ˆx̃ is a voiceless uvular spirant (which can come rounded),
 x̄ is a voiceless pharyngealized uvular spirant,
 h̄ is a voiceless pharyngeal (or adytal) spirant,
 q̄ is a voiceless pharyngealized uvular stop (aspirated),
 q̄' is an ejective pharyngealized uvular stop,
 λ̄ is a voiceless lateral alveolar spirant with sub-phonemic pharyngealization.
 e^ϕ is a pharyngealized *e*.

REFERENCES

JIES = *Journal of Indo-European Studies*

- Abaev, Vasili I. 1970. *Russko-ossetinskij slovar'*. Moscow: Sovetskaja Enciklopedija.
 Adrados, Francisco R. 1987. "Ideas on the Typology of Proto-Indo-European". *JIES* 15:1/2.97-119.
 Bammesberger, Alfred. 1996. "On Fresh Fish in Some (Indo-)European Languages". *JIES* 24:3/4.399-408.
 Bonfante, Giuliano. 1996. "The Etymology of híppos". *JIES* 24:1/2.111-113.
 Chirikba, Viacheslav A. 1996. *Common West Caucasian*. Leiden: Research School CNWS, Leiden University.
 Colarusso, John. 1981. "Typological Parallels between Proto-Indo-European and the Northwest Caucasian Languages". *Bono Homini Donum: Essays in Historical Linguistics in Memory of J. Alexander Kerns* ed. by Yoël Arbeitman & Allan R. Bomhard, vol. II, 475-558. Amsterdam: John Benjamins.
 Colarusso, John. 1984. "Circassian /-qa-/ Meets Semantic Algebra and Ergativity". *Papers from the Third Conference on the Non-Slavic Languages of the USSR* ed. by Howard I. Aronson & B. J. Darden. *Folia Slavica* 7.49-90.
 Colarusso, John. 1985. "Pharyngeals and Pharyngealization". *International Journal of American Linguistics* 51:4.366-368.
 Colarusso, John. 1992. "How Many Consonants does Ubykh Have?". *Caucasian Perspectives* ed. by B. George Hewitt, 145-158. Munich: Lincom-Europa.
 Colarusso, John. 1994. "Proto-Northwest Caucasian, or How to Crack a Very Hard Nut". *JIES* 22:1-2.1-35 [Reprinted from *The Non-Slavic Languages of the USSR, Linguistic Studies* ed. by Howard I. Aronson. Chicago: Chicago Linguistic Society, 20-55, 1989].
 Colarusso, John. 1997. "Phyletic Links between Proto-Indo-European and Proto-Northwest Caucasian". *JIES* 25:1-2.155-187 [reprinted from *The Non-Slavic Languages of the USSR, Linguistic Studies: New Series* ed. by Howard I. Aronson, 19-54. Chicago: Chicago Linguistic Society, 1992].
 Dumézil, Georges & Aytok Namitok. 1939. *Fables de Tsey Ibrahim*. Paris: Geuthner.
 Gamkrelidze, Thomas V. 1987. "The Indo-European Glottalic Theory: A new paradigm in IE comparative linguistics". *JIES* 15:1/2.47-59.
 Haïm, S. 1961. *The One Volume Persian-English Dictionary*. Tehran: Beroukhin.
 Haïm, S. 1967. *Haïm's One Volume English-Persian Dictionary*. Tehran: Beroukhin.

- Hamp, Eric P. 1973. "Fish". *JIES* 1:4.507-511.
- Hamp, Eric P. 1974. "Varia". *Eriu* 25.253-284.
- Hamp, Eric P. 1982. "Arm, Shoulder". *JIES* 10:1/2.187-189.
- Hamp, Eric P. 1990a. "The Indo-European Horse". *When Worlds Collide: Indo-Europeans and Pre-Indo-Europeans* ed. by T. L. Markey & John A. C. Greppin, 211-226. Ann Arbor: Karoma.
- Hamp, Eric P. 1990b. "The Pre-Indo-European Language of Northern (Central) Europe". *Ibid.*, 291-309.
- Hamp, Eric P. 1994. "Belated Comments on Pulleyblank's 'The Typology of Indo-European'". *JIES* 22:3/4.435-437.
- Hamp, Eric P. 1998. "Whose Were the Tocharians? Linguistic sub-grouping and diagnostic idiosyncrasy". *Bronze Age and Early Iron Age Peoples of Eastern Central Asia* ed. by Victor H. Mair, 307-346. Washington: Institute for the Study of Man.
- Hilmarsson, Jorundur. 1982. "Indo-European 'Tongue'". *JIES* 10:3/4.355-367.
- Jasanoff, Jay H. 1988. Review of Renfrew (1987). *Language* 64.800-802.
- Kibrik, Aleksandr E. & Sergo V. Kodzasov. 1990. *Sopostavitel'noe izuchenie dages-tanskikh jazykov. Imja, fonetika*. Moscow: Moskovskij Gosudarstvennyj Universitet.
- Kuipers, Aert H. 1975. *A Dictionary of Proto-Circassian Roots*. New York: Lang.
- Landahl, Karen L. & Eric P. Hamp. 1997. "Gravity without Levity". *CLS 33, Papers from the Panels on Linguistic Ideologies in Contact, Universal Grammar, Parameters and Typology, Perception of Speech and other Acoustic Signals* ed. by Kora Singer, Randall Eggert & Gregory Anderson, 349-356. Chicago Linguistic Society.
- Liddell, H. G. 1883. *An Intermediate Greek-English Lexicon, founded upon the 7th edition of Liddell and Scott's Greek-English lexicon*. Oxford: Clarendon Press.
- Melchert, Craig. 1987. "PIE Velars in Luwian". *Studies in Memory of Warren Cowgill* ed. by Calvert Watkins, 182-204. Berlin & New York: Walter de Gruyter.
- Polomé, Edgar. 1965. "The Laryngeal Theory so Far". *Evidence for Laryngeals* ed. by Werner Winter, 9-78. The Hague: Mouton.
- Polomé, Edgar. 1987. "Recent Developments in the Laryngeal Theory". *JIES* 15:1/2.160-168.
- Polomé, Edgar. 1988. "Sir William Jones and the Position of Germanic". *JIES* 16:3/4.209-232.
- Pulleyblank, Edwin G. 1993. "The Typology of Indo-European". *JIES* 21:1/2.63-118.
- Shakryl, K. S. & V. X. Kondzharija. 1986. *Slovar' abxazogo jazyka* (2 vols.). Suxumi/Aqua: Alashara.
- Shamba, Giorgij. 1998. "On the Track of Abkhazia's Antiquity". *The Abkhazians* ed. by George Hewitt, 48-58. New York: St. Martin's Press.
- Watkins, Calvert. 1980. "Indo-European and the Indo-Europeans". *The Houghton Mifflin Canadian Dictionary of the English Language*, 1496-1550. Markham, Ontario: Houghton Mifflin Canada.
- Winter, Werner. 1965. "Tocharian Evidence". *Evidence for Laryngeals* ed. by Werner Winter, 190-211. The Hague: Mouton.
- Winter, Werner. 1982. "Indo-European Words for 'Tongue' and 'Fish'". *JIES* 10:1/2. 167-186.