

Who were the laryngeals?

Discussion Paper

1. Let me state in advance what I assume for the laryngeals. For the sake of comparison I add Mr. Rasmussen's system. (For an earlier discussion of the problem cf. Beekes 1989.)

	$*h_1$	$*h_2$	$*h_3$
Beekes	ʔ	ʕ	ʕʷ
Rasmussen	h	x	ɣʷ

Thus, I assume that the first laryngeal was a glottal stop, the second a pharyngeal and the third a labialized pharyngeal.

2. I arrive at this result partly through elimination.

The laryngeals were not velar or uvular fricatives (x , γ or χ , β). This is based on the following considerations:

a) The laryngeals are, with one probable exception, never represented as velar or uvular fricatives (nor as laryngeals, which might have developed from such fricatives). The exception is the Hittite h . As these sounds are very normal, i.e. frequent sounds in the languages of the world, it would be strange if nine out of ten branches of Indo-European would have independently changed these sounds not only into other sounds, but even mostly not into obstruents of whatever kind. The Indo-European languages themselves do often have, in their earliest form or in a later stage, fricatives of this kind.

b) It is improbable that velar fricatives were so often vocalized. Most branches do show vocalic reflexes of the laryngeals, the only exception being Balto-Slavic which never has a vowel continuing a laryngeal.

c) The colouring effect of the laryngeals cannot easily be ascribed to these fricatives. Some colouring by these sounds is found, but it is not very frequent, i.e. not typical of them.

3. None of the laryngeals was an h -sound.

a) You find rarely hV - from $*HV$ -. The exceptions are Armenian, and perhaps Albanian. Again, it would be strange if so many branches

would have independently changed or lost an *h*-.

b) In Greek and Armenian you would expect *hr-* to give *hr* rather than the *Vr-* we find.

c) The universal, which has been adduced, that languages with the opposition voiced : voiceless *and* the opposition aspirated : non aspirated do have *h* (Jakobson; see e.g. Szemerényi 1989, 147) is irrelevant as PIE had no voiced : voiceless opposition (see below section 13). Moreover, most universals are not universal.

4. As the 'laryngeals' were not velar or uvular fricatives, the only probable group that remains with which they can be identified are the pharyngeals and glottals (laryngeals). The most frequent of them are:

	stops	fricatives	
	-	-	+ voice
pharyngeals		ħ	ç
glottals	ʔ	h	ɦ

We saw above (3.) that an *h*-sound is improbable.

5. If you have phonemes of this type of sound, the ʔ is mostly one of them. We shall see that this probably was *h*₁ (see 10. and 13.).

6. It is largely accepted that *h*₃ was the labialized variant of *h*₂. This is, among other things, suggested by the fact that *h*₂ and *h*₃ are represented in the same way in Hittite (by *h*) as against *h*₁ (which became zero). Labialization is a secondary articulation which is well attested in PIE. Also, labialization is the most frequent secondary articulation of the group of sounds we are discussing (see Beekes 1989, 30).

7. If the preceding argumentation is correct, we now only have *h*₂ left to be identified. From the sounds given in 4. only the pharyngeals are still available, so it will have been one of these two. As there was no opposition between voiced and voiceless, it can have been either of them (or it was neither completely voiced nor voiceless, as is the case with *h* in languages which have only one). As the sound was often vocalized, it will rather have been a voiced sound.

8. The three laryngeals behave very much in the same way. This will mean that they were phonetically close to each other. (It is therefore

improbable that one was an *h*, another a velar fricative.) Our reconstruction is in agreement with this observation.

9. In most languages the three laryngeals have the same reflexes, i.e. the distinction between the three laryngeals had disappeared, which means that they merged. This is accounted for by section 8. (In modern Hebrew e.g. the ancient \aleph is replaced by \aleph ; cf. Catford 1988, 101. The fact that Hebrew is largely an artificial language does not invalidate the argument.)

10. Pharyngeals are likely to colour vowels, whereas the glottal stop is much less likely to do so; cf. Martinet 1955, 217. This agrees with our reconstruction.

11. In Hittite $h_1 = \aleph$ disappeared, $h_2 = \aleph$ became a velar fricative. This is what one may expect on the basis of the phonetics of these sounds. (In modern Hebrew \aleph became a velar fricative; Catford 1988, 101.)¹

12. If it is correct that in Tocharian h_1 became zero between consonants, this would agree with the reconstruction as \aleph , which is a voiceless sound. The distribution, of course, is the same as that mentioned for Hittite in 11.

13. In many languages the laryngeals merged, yielding probably a glottal stop. For Indo-Iranian cf. Lubotsky 1981, esp. 138.

In Balto-Slavic the acute tone was caused by any laryngeal. The PIE voiced unaspirated stops had the same effect on the preceding vocalism; this is the Winter-Kortlandt law. Kortlandt explained this by assuming that it was the glottalic element of the voiced stops, which for different reasons had been recognized as glottalized consonants, which

¹ Kortlandt assumes the following representation in Hittite, Armenian and Albanian:

h_1	h_2	h_3 before $e > \emptyset$	$h-$	$h-$
h_1	h_2	h_3 before $o > \emptyset$	\emptyset	\emptyset

All laryngeals coincided before o . Then the laryngeals disappeared in the cases where they were automatic: there was no opposition between h_1e- and $e-$, or $Ho-$ and $o-$. For the principle of loss of predictable features cf. Hock 1986, 114.

was responsible for the acute (as well as the lengthening of short vowels; diphthongs were not lengthened). It is probable that the glottalic element of these sounds was identical with one of the laryngeals, and later with the sound in which the laryngeals merged in Balto-Slavic. This is strong confirmation of the reconstruction of h , as $?$. (It seems essential that these sounds were, as Kortlandt thinks, *preglottalized*. – The simplest system of stops was

$$t' \quad t \quad t^h$$

as proposed by Kortlandt. As the absence versus presence of the glottalic and aspiration features were sufficient to distinguish the three sounds, voice appears to be no longer distinctive; it appears nowhere else in the PIE system.)

14. A minor problem in my opinion is the derivation of Hitt. *pās-* 'to drink' from **peh₃s-*. We would expect this form to give **pahs-* if h_3 was a pharyngeal. (The problem is in fact independent of the identification of the laryngeal, as in Hittite h_2 and h_3 both became h .) One possibility is that the reconstruction is wrong. Perhaps the Hittite form derives from **ph₃s-*. Otherwise one might consider the possibility that there was a second " h_3 ", $?$ * beside $?$ *. For if this second h_3 was the labialized form of h_1 (= $?$), it is understandable that we find no reflex h in Hittite. This would mean a fourth laryngeal, but it does not agree with the fourth laryngeal postulated earlier, because this was an *a*-colouring laryngeal. Of course, the Hittite word is insufficient evidence for a fourth laryngeal, but we might keep the possibility in mind.

15. The question *plbati*, i.e. the question of the supposed voicing by the third laryngeal, may be shortly discussed. I think that this voicing is improbable for several reasons.

a) Note that a distinctively voiced h_3 requires the existence of a voiceless h_3 beside it. Two h_3 -phonemes are not often assumed nowadays. (Note that Rasmussen does not have two of them either, so that his h_3 is not *distinctively* voiced.)

b) If the b is due to h_3 , this was a PIE process, and entirely different from the aspiration in Indo-Iranian. There is no reason to assume that the h_3 would have disappeared (after voicing) in PIE. But this means that we would expect aspiration in Indo-Iranian. It is true that we have no certain instance of aspiration by h_3 , but as both h_1 and h_2 caused aspiration, we may well expect the third laryngeal to do the same. –

If the aspiration originated after the three laryngeals had coincided in Indo-Iranian, you would of course expect aspiration in all instances.

c) If h_3 voiced a preceding stop because it was voiced, we would expect the same effect of h_2 , because it was probably also voiced; see 7.

d) If you assume voicing by voiced laryngeals, you would expect devoicing by voiceless laryngeals. And those who assume that h_3 was voiced (because of its voicing effect), assume that the other two laryngeals were not voiced. But there is no evidence for devoicing.

Kortlandt assumes that the glottalic element of initial b (= preglottalized $'p$) was lost, which resulted in p . Thus PIE had

beh_3- , $bi-bh_3-eti$	=	$'peh_3-$, $'pi-'ph_3-eti$
loss of initial glott.:		peh_3- , $pi-'ph_3-eti$
($'p = b$: peh_3- , $pi-bh_3-eti$)		

16. As to Mr. Rasmussen's view, my answer has been given implicitly above. On some other points I can say the following.

I see no reason to assume vocalized laryngeals as phonemes. And we should not assume them unnecessarily, of course: *entia non sunt multiplicanda*.

I do not accept the "Brechung" in Greek, $iH > yō$; cf. my remarks Beekes 1988, 73 n. 4.

The idea of aspiration caused by a *preceding laryngeal* is perfectly unacceptable to me. The evidence is unreliable.

At the end of his paper Mr. Rasmussen writes that $*h_1\eta k-$ is compatible with the Greek development $enk-$, so that my objection to the vocalic nasal does not hold. "It is only a matter of very delicate articulatory timing whether one says $[h\eta]$ or $[h\eta n]$." That is true (except that our whole discipline is about such tiny differences), but this is not the point. In Greek $p\eta k$ became pak , but $*h_2\eta k-$ became $ank-$. Now the fact that the sequence ηr became anr can be explained through the nature of the following consonant. But that in $*h_2\eta k-$ (as against $*p\eta k$) the stop part of the vocalic nasal was retained (so that η became an) cannot phonetically be explained through the preceding laryngeal. So the point is that $*h_2\eta k-$ would have given $*ak-$ in Greek. The actual development $ank-$ must be ascribed to a special development ('vocalisation') of the laryngeal, and the n cannot have been vocalic. Therefore we must write $*h_2\eta k-$ and not $*h_2\eta k-$. (Apart from the fact that we should note phonemes, not phonetic entities.)

17. As to Mr. Gippert's discussion of the notation type $*newah_2-$ I refer to my review 1991, 238.

He makes the point of the question of when the colouring by the

laryngeals arose. I assume that the laryngeals always automatically caused colouring, but it cannot be denied that this arose at some time. But as we have no evidence whatever of this stage, I think it is of no use to discuss the matter.

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