


Glottalic Theory And Greek




According to the Glottalic Theory the three types of Proto-Indo-European stops were essentially plain, glottalized, and voiced (t, t', d) rather than plain, voiced, and voice-aspirated (t, d, dh), as is commonly claimed. The theory was developed in the 1970s independently by Thomas Gamkrelidze and Vyacheslav Ivanov and by Paul Hopper.

Traditional reconstructions of the **Proto-Indo-European** (PIE) sound system focused on the contrasting sets of correspondences that required the reconstruction of distinct segment-types for the proto-language. Thus the set of correspondences in (1a) contrasted with those in (1b) and (1c) in that all three could occur in initial position, before front vowels, before back vowels, after liquids and nasals, and so on, as the examples in (2), intended as a representative sample and not an exhaustive listing, show:

(1)

a.	Skt. t	Gk. t	Lat. t	Goth. þ	OCS t	OIr. t (etc.) 
b.	Skt. d	Gk. d	Lat. d	Goth. t	OCS d	OIr. d (etc.)
c.	Skt. dh	Gk. th	Lat. f	Goth. d	OCS d	OIr. d (etc.)

(2)

	Skt.	Gk.	Lat.	Goth.	OCS	OIr.
a.	'three': 'stretch; thin':	trayas  tanu	treîs teínō	trīs tenuis thin	þreis (Eng.) thin ...	trъje (Welsh) tannu
b.	'tree, wood': 'ten':	dāru- /dru- daśa	dóru déka	... decem	(Eng.) tree taihun desęťb	dru- deich
c.	'put': 'smoke'	dadhāti  dhūma	títhēmi thūmós	fēcī fūmus	(OE)  dęti ... dymŭ

Such contrasts meant that a separate proto-language phoneme had to be reconstructed in each case. Thus in the traditional system, PIE had the three consonantal phoneme types defined by these correspondence sets (→Consonants; →Indo-European Linguistic Background).

Presenting the facts in this way ignores a question that virtually every linguist concerned with PIE reconstruction has pondered, namely what the →phonetic reality was for the discrete →phonological units thus needed for PIE. As **Hock** & **Joseph** point out, while one in principle could

take the position that the proto-language elements are defined by the correspondence sets so that, in a sense, imputing phonetic reality to these phonologically defined entities is unnecessary, such a view in the end is methodologically unacceptable: PIE was a language spoken by real people at some point in the past, so correspondence sets such as those in (1c) must have arisen from actual sounds, not abstractions (Hock & Joseph 1996/2009:438-9). Thus it is fair to wonder what phonetics emerged from their mouths as they counted from 3 to 10 or remarked on a thin piece of wood, or the like.

The usual answer, and the communis opinio accepted since **Brugmann** (1897-1916) and up through and beyond **Lehmann** (1952), has been that the set in (1a) was a PIE **t*, that in (1b) a PIE **d*, and that in (1c) a PIE **dh*, representing respectively a voiceless unaspirated stop, a voiced unaspirated stop, and a voiced aspirated stop (\rightarrow Voicing; \rightarrow Aspiration). Thus the PIE stop system, ignoring the gutturals due to their controversial status, was seen as consisting of Tenuis **p *t ...*, Mediae **b *d ...*, and Mediae Aspiratae **bh *dh ...*. The basis for the phonetic reconstruction in each case was not only minimizing the number of changes needed to generate the attested reflexes in each language (e.g. Skt. *t*, Goth. *þ*, in the case of **t*), in accordance with the scientific principle of parsimony known as **Occam's Razor** (requiring that one not make analyses more complex than the facts demand) but also providing a suitable starting point for the attested reflexes via what are considered to be natural paths of phonetic development (e.g. **spirantization**, loss of complex features, etc.).

Still, various problems with the traditional interpretation of the phonetics of the PIE stops were noted, such as the rarity of reliable cognate sets involving **b*, the phonetic difficulty of having aspiration and voicing in a single segment, and the typological oddity of having voiced aspirates (if that was what they were) in the system without corresponding voiceless aspirates.

Although many solutions to these problems are possible, such as resurrecting the earlier idea of a voiceless aspirate set of stops (Joseph 1985) or reinterpreting the mediae aspiratae as murmured stops, this situation set the stage for a hypothesis that has come to be known as the "Glottalic Theory" (GT), advanced first by Thomas **Gamkrelidze** and Vyacheslav **Ivanov** in a publication in 1973 (and laid out more fully in Gamkrelidze and Ivanov 1995) but developed independently, though published later, also in 1973, by Paul **Hopper**. GT was an attempt at a wholesale reinterpretation of PIE phonetics so as to address the problems noted above and to explain as well certain long-noted co-occurrence restrictions holding within PIE roots, most notably the absence of roots with two mediae (thus no roots of the shape **ded-* or **ged-* or the like; \rightarrow Root Structure (and Ablaut)). Specifically, GT claims that the mediae were glottalized stops (**p' *t' *k'*), the tenuis were voiceless stops with aspirated (**ph *th *kh*) and unaspirated (**p *t *k*) allophones, and the mediae aspiratae were voiced stops with aspirated (**bh *dh *gh*) and unaspirated (**b *d *g*) allophones. With this configuration of stops, it is claimed, there was typological balance, the root-structure constraints are explained by reference to blockage of multiple occurrences of "checked" consonants, and the absence or rarity of **b* in the traditional system could be attributed to articulatory difficulty associated with concomitant glottalization and labial stoppage.

GT has been examined carefully in such works as **Dunkel** (1981), **Haider** (1985), Joseph (1985), **Garrett** (1991), Joseph & **Wallace** (1994), and others, and it has generally not fared well with regard to the details of how it would account for the development of particular IE languages, but it does have its supporters; cf. **Kortlandt** (1985), for instance. Moreover, **Salmons** (1993) is supportive, though

certainly critical at times, of some of the hypotheses the GT entails.

Whatever its merits or failings overall, the GT has consequences for our understanding of the development of Greek. In particular, the assumption must be made that the unaspirated allophone, e.g. [t], was generalized for the tenues (using the traditional names for expository clarity) as opposed to merely assuming its continuity as [t] from PIE **t* in the traditional system. And, in the mediae aspiratae, Gk. *th* is assumed to have developed by devoicing (as in the traditional system) of the **[dh]* allophone, which must be seen as having been generalized over its unaspirated allophonic counterpart **[d]* in most instances. The contexts where **[d]* was generalized were just those where there was an aspirate later in the root; this **[d]* then devoiced as well to give Greek *t* just in those cases. Finally, the last relevant change before attested Greek would have been the glottalized stops (the plain mediae) becoming voiced plain *b d g*. A root like **t'em-* 'build' (**dem-* in the traditional reconstruction) must have developed into Gk. *dem-* only after the **d > t* change, since otherwise a **[d]* from **t'* would be expected to also devoice to give a non-occurring ***t*; Greek has *dem-* 'build', not ***tem-*. These last several steps reveal the GT version of Grassmann's Law, for a GT root would give Greek *peith-* 'persuade' via **b[h]eid[h]- > *beidh-*, by selection of appropriate allophones (unaspirated when an aspirate follows, aspirated otherwise) > *peith-*, by devoicing of voiced stops. Since there was no **p*' in the GT view of PIE, the Greek sound system would have been filled out, it is claimed, by the addition of a phonetic [b] through borrowings, onomatopoeic creations, and the like, giving the language a balanced stop system (with *b d g, p t k, ph th kh*).

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