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The Comparative Method in Indo-European

Introduction.

My work with CEEBL (2009-10) culminated in a paper concerned with aspects of Indo-European poetics, with special reference to the Rig-Veda, the oldest body of Sanskrit poetry. This was presented independently at a conference held at the University of Manchester, 27 May 2010, the 'Sanskrit Tradition In the Modern World' (STIMW). Throughout this project, I dealt constantly with questions of methodology, and in particular by what method one is able to reconstruct inherited poetics from a proto-language (on which notion see below). The crucial point which I found myself continuously returning to was that one must begin with the comparative method operating at levels smaller than poetics, namely phonology and from there morphology, and only thence build up a theory of inherited poetics, by applying the same rigorous procedure to successively larger units until one can securely reconstruct poetics. Evidently the gleanings will be sparser than with the more secure units of phonology, the phonemes, but will be important as they were gained by a methodologically secure analysis. As this method is comparative, one must have access to reliable handbooks and grammars of the languages in question beside reliable manuscript witnesses for the oldest stages of the given language, and knowledge of how to use these materials correctly. This allows one to sift the evidence, and from there reconstruct the most plausible stemma for the proto-history of the language.

My work took me to many universities in England and abroad, and I should record my debt to a few scholars in particular, especially Prof. David Langslow in Manchester for kindly reading all of my work in its various stages, and for his presence at the symposium where this paper was delivered, Dr. Philomen Probert at Oxford University for her generous support, and Prof. Lubotsky at Leiden University for inviting me to be a visiting student at his university, which position I took up in April 2010. Of course, I would also warmly thank CEEBL for giving me the opportunity to undertake this project. What I present below is the handout as given at the CEEBL undergraduate symposium, 18 May 2010, with slight augmentation (though retaining much of the original orality), following helpful suggestions received on the day. The work present below does not demonstrate a particular hypothesis, but I hope is a useful look into the comparative method, how it works, and why historical linguists swear by it. It is my belief that by this method we stand to gain a glimpse into the early prehistory of the various daughter languages, to which we would otherwise have no access. I have in the final paragraphs offered some preliminary thoughts on Indo-European poetics, which I do not think all will agree with; as Meillet (1965:XVII) wrote regarding his work on Indo-European metrics, although Hellenists (and I extend the definition here to Classicists) remained sceptical concerning his conclusions, '...je crois y avoir appliqué correctement les méthodes de la grammaire comparée.' With the same statement, I offer the following brief handout on the comparative method and Indo-European poetics.

1. All languages show similarities. One example is the fact that all languages known have vowels and consonants in their phonemic inventory, another is the fact that all languages have the grammatical classes of nouns and verbs in their grammar. The study of how we can classify languages according to such facts is 'typology', which addresses the classification of languages by the similarities they show. But some languages show greater similarities than others, and this fact must be explained. Hypotheses include:

- These similarities may be due to chance. It is an historical accident that Lat. *deus* 'god', Ancient Greek *theós* 'god', and Nahuatl (Aztec) *teō-tē* 'sacred' all seem to correspond phonetically, and all have close semantics. None of them are related, and any phonological or semantic relationship they have must be attributed to the odd ways of history. Incidentally at an earlier date the Greek form would have been **thesós*, before the loss of intervocalic *s*, the Latin **deiuos*, attested in the accusative plural *DEIVOS* (earlier **deiuons*) on the 'Duenos' inscription (*CIL* 1².4), and already one can see that these forms begin to diverge as we move back in time.
- These similarities may be due to diffusion (borrowing). When I ask for a 'courgette' or 'aubergine' in a restaurant, I am not saying words genetically related to the French words *courgette* or *aubergine*, but am using French words diffused (or borrowed) from some variety of French into some variety of English (indeed, these words don't exist in my American English, where I say 'zucchini' and 'eggplant').
- These similarities may be due to language universals. These are basic characteristics of language that exist the world over, such as the propensity for unrelated languages to have words of the *mama* and *papa/dada* type, e.g. Swahili *mama*, *baba*; Mandarin *māma*, *bàba*, etc. (examples from Weiss 2009: 10).

When these possibilities must be excluded, we are left with a historical conclusion:

- 'The comparatist's one hypothesis, then, is that these resemblances among certain languages must be the result of their development from a common original language.' (Watkins 1995: 4).

2. The Comparative Method follows from this hypothesis, and demonstrates, by systematic comparisons, that the given languages are genetically related. This latter term has nothing to do with human genes or biology in general, but with historical descent (related to Ancient Greek *genesis*) from a common ancestor, which, if without attestation, we name a 'proto-language' (from Ancient Greek *prōtos* 'first'). When languages are carefully compared it will lead to 'reconstructions' in the proto-language, which are typically denoted with an asterisk. It must be emphasized that these reconstructions are based on typological plausibility regarding sound changes, and that reconstructed forms cannot be proven or disproven to have once existed as such in the proto-language (as these forms are not attested directly; see below). The relationship between cognate languages is often modelled with a tree diagram to demonstrate the subgrouping between the various languages in the family.

- Examples of Linguistic Comparison.

Table 2.1: Numerals in some Romance Languages

Spanish	French	Italian
Uno 'one, etc.'	Un	Uno
Dos	Deux	Due
Tres	Trois	Tre
Cuatro	Quatre	Quattro

- These striking similarities require an explanation: Chance? Linguistic universal (e.g. onomatopoeia)? Language diffusion?

Table 2.2: Further Items in the Romance Lexica

Spanish	French	Italian
Diente 'tooth'	Dent	Dente
De 'of'	De	Di
Duermen 'they sleep'	(Ils) Dorment	Dormono
Diez 'ten'	Dix	Dieci

- These similarities are too striking and run too deep (occurring in core vocabulary and across both lexical fields and grammatical classes) to be ascribed to chance, borrowing or universals, and so the one hypothesis follows: they are descended from the same parent language.

3. Comparative Reconstruction. We have just seen how one shows that languages are related, but the crucial step to proving their common ancestry is to demonstrate that they exhibit systematic sound correspondences. These correspondences exist due to the fact that sound change is overwhelmingly regular, the historical linguist's well-beloved 'regularity principle' of sound change. 'Systematic' and 'regular' are the key words, and by undoing these regular sound changes one may arrive at a reconstructed proto-form, ancestral to the divergent reflexes in the daughter languages. In a weak claim, this proto-form is only a symbol from which we can derive the attested languages (so Meillet 1937), since we can never know for sure how the unattested form was realized; but Watkins argues that, despite some uncertainty (e.g. regarding phonetic realization), 'the stronger claim...is that these reconstructions are a real model...of how we think certain people talked at a remote period before recorded history- before the human race had invented the art of writing' (Watkins 1995:5).

- Reconstructing the Proto-Romance for 'tooth': Sp. *diente*, Fr. *dent*, It. *dente*. All languages attest the consonants *d-nt*, surely the proto-form had this sequence. Only Spanish diverges in the vowel (it has the diphthong *ie*), so we will take the other languages as more likely continuations of the proto-form (though this argumentation does not always hold; see Hale 2007: 240-2), so we reconstruct

**dent-* thus far. Only French disagrees in not having a final vowel; as it is more common for languages to lose than gain sounds (especially in final syllables of words), we will restore a proto-form based on the agreements of the other two languages: **dente*. We may designate the language from which our form derives ‘proto-Romance’, and say from here the Romance languages give their attested words for ‘tooth’. Incidentally, the Classical Latin form for ‘tooth’ was *dēns*, the stem of which was (accusative case) *dent-em*. Thus, the Latin root is predictably the ancestor of this lexeme, but the form actually differs from the proto-Romance form we’ve reconstructed (see further Fortson 2009:1ff., whence I have drawn this example).

4. Language Change. Latin developed into the three languages cited above, amongst others. This is because all languages are changing all the time, and Latin was no exception. This fact, that forces acting on languages current in the world also acted on languages in the past, has been formalized into the ‘uniformitarian principle’, whose many syllables say that since language as a cognitive faculty has not changed drastically in the last many thousand years, ‘we must assume that the same types of language structures and language changes that we can observe today also underlie our historical records and were present in prehistory as well’ (Ringe 2008: 234). Languages change constantly, but more precisely we may say that if language or grammar, in the technical sense of rules and principles which allow humans to generate sentences, exists in the mind of each speaker, ‘language’ is actually born anew with each successful acquisition by a child. The ‘language’ did not change, but a child has successfully acquired a grammar, and the uniformitarian principle in language change will be active in the domain of first language acquisition. This fact of language change at the level of acquisition is logically necessary, since the grammar acquired by a child always differs from its sources (i.e. your English is not that of your parents), and so the ‘language’ will not be the same, and it is in this sense that languages change. As Meillet (1965: 3-4) excellently put it, ‘Les enfants qui apprennent à parler n’arrivent pas à s’exprimer d’une manière identique à celle dont s’expriment les adulescents qu’ils s’efforcent d’imiter: chaque génération introduit, sans le chercher, des innovations’.

Any given innovation (say a phonemic merger whereby <th>, /p/ becomes /f/) may be diffused into the community, though this is not necessary for sound change, which clearly requires only a change in the mind of one speaker (see Hale 2007). However, if the innovation is widely diffused, it will likely be easier to see in our historical records, so incidentally easier to analyze (though again this does not render the former case any less relevant, and ‘dialectal’ forms, or simply forms less well attested, are often crucial for understanding the history of a language; cf. Meillet 1965:77ff.). If such innovations accrue and cause one language to diverge significantly from another we may speak of dialects, or even of other languages, but these latter terms, unlike the above mentioned ‘grammar’, are not scientific or technical, and must be used only for general reference.

- Sound changes are regular and exceptionless. As mentioned above, this theory is a necessary underpinning for the study of a languages prehistory. Briefly stated, it says that every sound X in the proto-language will become Y in a given daughter language, when in the same phonological environment (though this can be

somewhat messier than I've made it seem; see now Hale 2007, and Bermúdez-Otero 2007). We can state it as a rule that the *p* and *d* of the Greek stem *pod-* 'foot' correspond to English *f* and *t* in *foot*. This rule is demonstrated by comparison and equation across many examples, e.g. *patēr* and *father*, *deka* and *ten*. These correspondences are so regular and exceptionless because all Indo-European **d*'s became *t* in English (when in the given phonological environment), not just in some lexical items; likewise all Indo-European **p*'s became *f*. Thus we will not be surprised when we can predict that the English cognate and translation of Ancient Greek *pord-* must be *fart*, a rather surprising example of what our Indo-European linguistic forebears have left us.

5. Indo-European Reconstruction. Reconstructing Indo-European stops from at least three languages.

Table 5.1: Correspondences and Proto-forms for the IE Stops.

Latin (ca. 50 bce.)	Ancient Greek (ca. 400 bce)	Sanskrit (ca. 400 bce)	Germanic (Eng)	Correspondence? IE proto-form?
P ater	P atēr	P itar-	F ather	
P ed-	P od-	P ād-	F oot	
P etō 'I seek'	P etomai 'I fly'	P attra	F eather	
F er-ō	P ^h er-ō	B ^h ar-ati	B ear (verb)	
F rāter	P ^h rātēr	B ^h rātar-	B rother	
F u-ī 'I was'	P ^h u-ō	B ^h av-ati 'he is'	B e	

- Conclusion. We have treated above the historical conclusion that a group of languages may derive from a common ancestor, and we then looked into the consequences of taking this seriously: a method has been developed to assess the systematic correspondences, the 'Comparative Method'; one reconstructs proto-forms in comparative reconstruction; all languages change (in the sense defined above), and this change is overwhelmingly regular in the phonology; from these facts linguists over the past two hundred years have been able to reconstruct the Indo-European parent language with an astonishing degree of success, and have successfully explained many anomalies in the synchronic grammar of the daughter languages.
- Further? From the reconstruction of phonemes one can begin to reconstruct larger levels of the grammar, such as morphemes and morphology, semantics, syntax, and in the best of circumstances poetics. It is around this subject that my work

with CEEBL has been focused, though I have tried to present above not what I have done but how I have done it. I believe that we can reconstruct Indo-European poetics, and that the work of reconstruction offers an important look into the prehistory and inheritance of the attested languages. Though the technical difficulties increase accordingly with each larger unit of analysis, the reconstruction of Indo-European poetics is not impossible, so long as we stay close to the method outlined above. Since it is true that all people at all times have had stories and song, so the Indo-Europeans must have had them as well. This is an *a priori* conclusion, but with important ramifications. By a rigorous application of the comparative method we stand to gain a glimpse into an earlier world, a people's greatest hopes, fears and dreams, all of which would otherwise be lost to '...the remote period before recorded history' (*op.cit.*)- but that remains a paper for another day.

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