Reconstructing Semantics; Or, A Bad Case of the Bends

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Reconstructing Semantics*
Or, A Bad Case of the Bends
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By and large, semantic reconstruction has not been approached as methodically as either phonological reconstruction or syntactic reconstruction. In fact, most introductory textbooks in historical linguistics (e.g., Hock 1991, Jeffers and Lehiste 1979) leave the subject almost completely unaddressed. Indeed, some scholars have suggested that precise semantic reconstruction may be impossible; as Watkins (1985) notes,

It is perhaps more hazardous to attempt to reconstruct meaning than to reconstruct linguistic forms, and the meaning of a root can only be extrapolated from the meanings of its descendants. Often these diverge sharply from one another, and the scholar is reduced in practice to inferring only what seems a reasonable, or even merely possible, semantic common denominator. The result is that reconstructed words and particularly roots are often assigned hazy, vague, or unspecific meanings...The apparent haziness in meanings ...often simply reflects the fact that with the passage of several millennia the different words in divergent languages derived from this root have undergone semantic changes that are no longer recoverable in detail (Watkins 1985:xvii).

This is not to suggest that semantic reconstruction has never been done well; indeed, scholars such as Watkins and Benveniste have often posited semantic reconstructions of subtlety and insight. The following passage, taken from Benveniste (1972), illustrates the detail it is possible to obtain in reconstruction:

Within the framework of a grand-scale comparison of several languages, one often observes that forms that are obviously related are each distinguished by a particular variety of meaning...Such, for instance, is the case of the term for 'road'...The Indo-Iranian, Slavic, and Baltic words mean 'road,' But Gr. *póntos* signifies 'sea'; Lat. *pons* designates 'bridge,' and Arm. *hun*, 'ford.' ... [In Vedic] The *pánthāḥ* is thus neither plotted in advance nor regularly trod. It is indeed rather a "crossing" attempted over an unknown and often hostile region...in short, a way into a region forbidden to normal passage...In Greek, the "crossing" is that of an arm of the sea (cf. *Hellēs-pontos*), then more broadly, of an expanse of water serving as a "passage" between two continents; in Armenian, it is a "ford"; and in Latin, *pons* will designate the 'crossing' of a stream of water (Benveniste 1972:256).

Reconstructions such as the preceding one, however, are usually presented to the student as the result of inspiration or genius, and inspiration is essentially a black box: its workings aren't amenable to inspection, and its methods can't be evaluated and criticized. What is needed is a methodology of semantic reconstruction. In this paper I will suggest such a methodology, and will illustrate some of its strengths

and weaknesses by testing it on a group of Proto-Indo-European verbal roots, most of which are reconstructed with the meaning 'bend.'

Recent work on polysemy and on semantic change has done a lot to dispel the idea that semantic change is unpredictable. Brugman (1988), for example, argues that a lexical item such as *over* can be viewed as a category of senses related in chains of meaning; she finds image-schematic structure useful to characterize these meaning chains. Sweetser (1990) and Traugott (1986), among others, have argued that semantic change is considerably more regular than had previously been thought, and that it must have as one of its mechanisms polysemy. These claims make it possible to outline a means of doing comparative semantic reconstruction. Consider the relationship between a set of attested forms and the proto-meaning. Semantic change will have proceeded at different rates in the daughter languages; in addition, the languages themselves are attested at different time depths. If it is true that certain directions of change are likelier than others, then it ought to be the case that many of the reflexes of a form in the daughter languages have moved along similar pathways of change. The attested forms will be situated at different points along these pathways, so that it is possible to relate one cognate to another in likely chains of meaning, creating a kind of artificial radial category in the sense described in Lakoff (1987). The various radii will converge on a central meaning, which can be posited as the reconstructed proto-meaning.

The model described above thus provides a way of incorporating recent work on directionality in semantic change (e.g., Sweetser 1990; Traugott 1982) in the act of reconstruction by structuring the radii to reflect that directionality. For example, if one cognate form is attested with the meaning 'misshapen body' and another is attested with the meaning 'evil character,' our understanding of semantic change allows us to claim that the latter meaning must have developed out of the former. As our understanding of semantic change continues to be refined, new insights can be incorporated into the task of reconstruction.

It should be emphasized that although I am borrowing the concept of structured radial categories from Lakoff (1987) and Brugman (1988), the categories are not meant to suggest that the range of meanings attested in the daughter languages was present in the proto-language, nor should the reconstructed meaning be viewed as the prototypical member of the category; rather, I am using these devices as a useful formalism for viewing the semantic range covered by the cognates in the daughter languages. The semantic value reconstructed at the center of the artificial category thus obtained is the point at which the chains of meanings converge, but it is not the prototypical member of a true radial category (though it is possible that these artificial categories do reflect some of the polysemy which must have been present in the proto-language). In this respect my use of artificial radial categories differs from that of Jurafsky (1993). Jurafsky uses artificial radial categories as a way of capturing cross-linguistic generalizations concerning the structure of diminutives in a variety of languages,

making the point that although any particular language may use a variety of morphological mechanisms to express the diminutive and related meanings, the range of meanings can be understood as corresponding to an abstract universal structure for the semantics of the diminutive. His model is similar to mine in that it offers a way of incorporating notions of directionality in semantic change; we differ, however, in that Jurafsky's radial categories are not tied to a single morphological expression of the diminutive, whereas in my model the radial category posited makes claims about the historical development of the reflexes of a particular root.

The forms which I will use to test this model are 15 reconstructed Proto-Indo-European roots which are generally glossed with the meaning 'curve' or 'bend.' I will cite both the gloss given in Pokorny's *Indogermanisches Etymologisches Wörterbuch* (IEW) and that given in Watkins (1985). The massive synonymy that the reconstructed glosses suggest is highly unlikely. A further drawback to the abstract reconstructions normally posited for these forms is that they aren't falsifiable in the way that phonological reconstructions are; that is, it's difficult to really prove or disprove an extremely vague reconstructed proto-meaning.

In applying the approach suggested here, I will argue for more detailed reconstructions but the language used to describe those reconstructions will sound very abstract, since I wish to highlight those aspects of meaning in the proto-form that were important in the developments seen in the daughter languages. In many of the cases I could have used a less abstract English word; for example, in one case I reconstruct the proto-meaning 'three-dimensional object bend in a convex manner' but I could have reconstructed the verb 'bulge' instead. My reconstruction serves merely to highlight the important aspects of the reconstruction, but to a real speaker of Proto-Indo-European the word probably had the abstractness of 'bulge.'

The cognate sets given below are not exhaustive; they cover most of the semantic values associated with the set, and they are the forms attested with the most transparent derivational morphology. Due to space limitations I cannot discuss in detail the effect that derivational morphology has on these forms, but obviously it must play some role. Although the roots reconstructed are all verbs, many of the attested cognates are nouns and adjectives; the deverbal morphology seen in the cognates must have played some role in the semantic shifts seen in these cases.

The first example, given in Figure 1¹, is found with the verbal meaning 'to bend' in Old Indic. Nominal forms meaning things like 'fishhook,' 'spine,' 'loop,' and so forth, are attested in a variety of other languages. In image-schematic terms, all the nominal forms refer to a linear, manipulable object which is bent roughly in the middle and which remains bent; an English near-equivalent would be 'crease,' which differs only in referring to a three-dimensional rather than a two-dimensional object.

Figure 1 ***h₂enk-**, ***h₂eng-** [IEW 45 'biegen'; Watkins 3 'to bend']

The root seen in Figure 2 is attested in Albanian with the meaning 'bow' and in Indic in the compound 'bend the knees.' Metaphorical and metonymic extensions show up in the Germanic forms meaning 'prayer,' in the Tocharian form meaning 'honor,' and in the Lithuanian form meaning 'hunger'; all of these can be understood as extensions of the image of a bent human body, which is the meaning I reconstruct². The Indic forms meaning 'oppression' and 'presses' might be analyzed as being similar to the Lithuanian form in referring to a cause of bending.

Figure 2 ***bhedh-** [IEW 114 'krümmen, beugen']

In Figure 3 the Old Irish forms 'soft' and 'break' point to the bending of a manipulable object; this is the meaning I reconstruct as original. Note that Latvian 'hill' is hard to fit into this category.

Figure 3 ***bheug-** [IEW 152 'biegen'; W 8 'to bend']

In Figure 4, Lithuanian 'corner; region,' Latin 'field' and Greek 'bend in a river' and 'turning point in a race course' all refer to objects in a terrain. In Greek, in particular, the object doing the bending is linear; this interpretation is supported by the metaphorical use of *kampē* to mean 'inflection in a line of music.' The Lithuanian meaning can be understood as a metonymic extension from the proto-meaning 'bend in a linear object' to the area circumscribed by such an object. In Latin the shift from the linear object to the terrain against which the object is viewed is complete. The meaning I reconstruct, 'be bent (linear object in terrain)' must originally have applied to something like a river or cliff line.

Figure 4 *kam-p- [IEW 525 'biegen'; W 26 'to bend']

The forms in Figure 5 meaning 'high ground,' 'female breast,' 'curve-nosed,' 'boil,' and 'hump' all refer to three-dimensional convex objects seen against a flat background. In Tocharian and Germanic, the meaning 'high' has developed, picking out the top point of such an object. In Lithuanian and Latvian the meaning 'hobgoblin' or 'gnome' has developed; one path of development would be to go metonymically from a physical deformity such as a boil or a hump to a creature characterized by such a hump. In addition, the forms suggest a metaphor that physical deformity corresponds to moral deformity; hobgoblins aren't "straight" with you.

Figure 5 ***keu-k-** [IEW 589 'biegen'; W 30 'to bend'; derivatives 'a round or hollow object']

The nominal forms in Figure 6 meaning 'link of chain' and 'mount, setting' share the notion of connecting one thing with another; this meaning is also reflected in the Latin verbal form meaning 'I gird.' A shift from the meaning 'mount, setting' to the meaning 'hip joint' is unsurprising; the OCS verbal form 'I kneel' can be viewed as an extension of the meaning 'joint.' The meaning 'put in fetters' or 'be fettered' seen in Norse can be posited as the step prior to the Latvian meaning 'to limp.' The Lithuanian form 'to go fast' is difficult to connect with this group of forms.

Figure 6 ***kleng-** [IEW 603 'biegen, winden'; W 31 'to bend, turn']

The root in Figure 7 is only attested in western Indo-European; its meaning must have involved bending or inclining the body or some body part. As the cognates in Figure 8 show, the root **k^welp-* must originally have referred to the bending of a three-dimensional object oriented so that the object is concave; contrast this root with that seen in Figure 5, in which the object is seen as convex.

Figure 7 ***knej-g^{wh}-** [IEW 608 'neigen, sich biegen'; W 32 'to lean on'] (western IE)

Figure 8 ***k^welp-** [IEW 630 'wölben'; W 34 'to arch']

The forms seen in Figure 9 illustrate one of the shortcomings of any kind of comparative methodology: reconstruction is difficult when few cognates are attested. It is very difficult to see how the Lithuanian and Latvian meanings could have developed out of the proto-meaning.

Figure 9 ***lenk-** [IEW 676 'biegen'; W 36 'to bend'] (western IE)

The forms in Figure 10 again illustrate the metaphor that physical deformity corresponds to moral deformity; both the cognates referring to bodily deformity and the Old English form meaning 'to cheat' suggest that the proto-form was originally applied to the body as well.

Figure 10 ***lerd-** [IEW 679 'verkrümmen'; W 36 'bent, curved']

The forms in Figure 11 share the image of bending together two flexible objects. This meaning is present in the Latin form meaning 'I wrestle,' in the Old English form meaning 'lock of a door,' and in the Old Irish form meaning 'supports,' since things that are bent together support each other. The meaning 'pliable,' seen in Lithuanian, could be the source of the Greek form meaning 'willow tree' and the Germanic forms meaning 'lock of hair.'

Figure 11 ***leug-** [IEW 685 'biegen'; W 37 'to bend, turn, wind']

The forms in Figure 12 clearly point to the meaning 'fold.' It is interesting to note the metaphorical extension of 'single' (or 'one-fold') to the meaning 'simple' seen in Germanic, and the extension of 'double' (or 'two-fold') to the meaning 'doubt' seen in Gothic.

Figure 12 ***pel-** [IEW 802-3 'falten'; W 48 'to fold']

The cognates in Figure 13 point to a meaning component of flexibility; this flexibility underlies the shift to the meaning 'thin' and then to 'hungry'. The forms in figure 14 also involve a notion of flexibility; the Latin form 'I tie' and the Lithuanian form 'tape-worm' suggest that the flexible object may originally have been a cord or thong. The idea of flexibility is seen in the Old Norse form meaning 'pliant; weak'; this meaning must have been prior to the Greek meaning 'I yield, give way.'

Figure 13 ***sueng-** [IEW 1047 'biegen; drehend schwingen'; W 68 'to swing, turn, toss']

Figure 14 ***ueik-** [IEW 1130 'biegen, winden'; W 75 'to bend, wind']

The forms in Figure 15 seem to refer to motion which is sudden; the Lithuanian meaning 'to try to avoid' and the Old Norse meaning 'to stray, wander about' suggest the motion of bending from a linear path. This meaning must be prior to the meaning 'inconsistent,' seen in Old English, and 'limps' seen in Old Indic. The meaning 'trick' can be seen as an extension of the meaning 'inconsistent.'

Figure 15 *ueng- [IEW 1148 'gebogen sein', W 'to bend, curve']

As the above cognate sets demonstrate, certain aspects of meaning seem to persist longer than others. These include whether an object is two-dimensional or three-dimensional, whether it is a human body or not, whether the verb is stative as in 'the river bends' or transitive as in 'I bend the stick,' whether the object remains bent or flexes, and the orientation of the bend relative to the speaker (that is, whether it is convex or concave). Such elements, of course, are precisely those aspects of meaning characterized by image-schemas; this observation offers further evidence of the cognitive salience of image-schematic structure. It is also interesting to note that these same elements are present in a radically different context: the verbal prefixes of Atsugewi³. Talmy (1972) cites such prefixes as *uh-* 'from a linear object moving circumpivotally against the Figure' and *ra-* 'from a linear/planar object moving laterally over/through FIGUROID.' The fact that these elements of meaning play a role in such a radically different context suggests that they may have universal importance in human cognition.

The methodology I've outlined thus gives us a means and a justification for reconstructing much more precise proto-semantics for each of these forms. Again, it is important to note that these artificial radial categories need not represent any actual polysemy in the proto-language; rather, they offer a way of simultaneously viewing all the paths of semantic development attested in the daughter languages and of projecting those paths back to a single starting point. It is also important to note that this methodology is not meant as a substitute for careful philological work; rather, it provides a backdrop against which a more careful study of the textual uses of a particular cognate can take place. For example, I've provided a justification for reconstructing fairly precise meanings for each of these forms; an important next step would be to verify these more precise meanings by looking at

the textual uses of forms such as Old Indic *bhujáti* 'bends' (seen in Figure 3 as a descendant of the form **bhegg-* 'bend an object'), Old Indic *kucáti* 'bends' (seen in Figure 5 as a descendant of the form **key-k-* 'three-dimensional object bend in a convex manner'), and Old Indic *añcati* 'bends' (seen in Figure 1 as a descendant of the form **h₂enk-* 'bend two-dimensional object roughly in the middle so that it stays bent'). My model makes the testable prediction that these three forms must have been differentiated in Old Indic, and that their different uses will correspond to the semantic values reconstructed for these cognate sets.

A further benefit of the methodology outlined in this paper is that as it offers the possibility of reconstructing more precise semantic values, it also offers the possibility of reconstructing much more natural proto-languages. Phonological and syntactic reconstructions are routinely evaluated on the basis of their naturalness or unnaturalness (for example, the "glottalic theory" of Indo-European consonantism arose largely because of the alleged unnaturalness of the reconstructed system of Proto-Indo-European stops); in contrast, reconstructed semantic values are still largely abstractions. As a consequence linguists can argue over the precise phonetic detail of reconstructed roots while still reconstructing unnaturally large numbers of abstract synonyms for the proto-language. The methodology suggested in this paper offers the possibility of reconstructing more natural semantic systems as well.

The model undoubtedly oversimplifies the actual historical developments exemplified by these forms. For instance, the points along the radii exemplified by the attested forms must themselves be polysemic in their own languages, and might themselves show unexpected meaning shifts as a consequence. Still, it is no serious criticism of the model to note that it doesn't do everything; after all, in phonological reconstruction establishing regular sound correspondences is the starting point rather than the ending point of reconstruction, yet it's a necessary and powerful starting point.

The methodology outlined in this paper is eminently teachable, offering the possibility of moving semantic reconstruction from the periphery of historical linguistics to a more central position. It also makes it easy to evaluate the likelihood of posited semantic correspondences. For example, in the cognate set cited in Figure 6, Lithuanian *klénkti* 'to go fast' has generally been included by other scholars in the cognate set, yet it doesn't readily fit into the radial structure constructed from the other cognates; this potentially might be grounds for rejecting the form as a cognate.

Finally, as Figure 16 illustrates, the model provides a useful representation of Benveniste's analysis of the Proto-Indo-European root **pónt-eH-*, mentioned at the beginning of the article. The model makes Benveniste's argument more explicit: the meaning of the cognate forms, viewed in image-schematic terms, points to a precise reconstruction of the proto-meaning 'crossing attempted over an unknown and often hostile region...in short, a way into a region forbidden to normal passage.'

Figure 16 *pónt-eH-

Notes

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¹ Note that in some cases the reconstructed root has been altered to agree with current views on the Proto-Indo-European phonemic inventory.

² Note that the metaphors motivating extensions of meaning may be cross-linguistic or culture-specific; see Matisoff (1978) for examples of both kinds of semantic change in a non-Indo-European context.

³ This observation was offered to me by Eve Sweetser.

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