

Where are the Trees?

The Treatment of Conflicting Signals in the History of Language Classification

Johann-Mattis List
Heinrich Heine University Düsseldorf

2010/07/03

1 Introduction

Vertical and Horizontal Language Relations

- **vertical language relations:** language relations based on common origin
- **horizontal language relations:** language relations based on language contact

Inference Problems

- The distinction between horizontal and vertical language relations is problematic in historical linguistics. The deeper one goes back in time, the greater becomes the problem of inference. Thus, German *Kopf* “head” and English *cup* “cup” probably go back to Proto-Germanic **kuppa* “cup” (Orel 2003), yet whether the word was borrowed from Latin into Proto-Germanic (Kluge & Seebold 2002) or inherited from Proto-Indo-European (Orel 2003) cannot be resolved with full confidence.

The Traditional Kinship Conception (Wells 1987)

- **inheritance as sporadic:** Children inherit certain traits from their parents, yet the process of inheritance seems to follow random patterns.
- **change as discrete:** Children are different from their parents, the difference being non-gradual but discrete.
- **origin based on production:** Children are “produced” by their parents, the parent and the children generation can exist at the same time.

2 Pre-19th Century View on Language Relationship

2.1 Catastrophism

- Before the rise of historical linguistics as a scientific discipline, the biblical myth of the *Confusion of Tongues* was the prevalent paradigm of language divergence.
- Hebrew or the mysterious *Adamic language* was assumed to be the ancestor of all other languages.
- This led to a general assumption of *monophyly* and a catastrophic view on language change.
- The impact of the *Hebrew* paradigm on etymological studies is well reflected in works of scholars such as Sebastian Münster (1488-1552) (Münster 1523), Johannes Reuchlin (1455-1522) (Reuchlin 1506[1974]) and Georg Cruciger (1575-1637) (Cruciger 1616).

2.2 Derivational View on Language Relations

- Plato on Barbarian words in Greek:
I know that many Greeks, especially those who are subject to the barbarians, have adopted many foreign words. (Cratylus: 409, translation taken from Plato 1921[ca. 399 BC])
- Quintilian on Latin and Greek:
[...] it is from [the Greek language] that the Roman language is, in a very great degree, derived [...]. (Institutio Oratoria: I.5.55-58, translation taken from Quintilian 2006)

2.3 “Catastrophic” Kinship Conception

- **inheritance as sporadic:** No systematic patterns are expected to be found in different languages, while on the other hand all languages are assumed to be genetically related.
- **change as chaotic:** It is neither assumed that language change happens regularly nor necessarily.
- **origin as ad-hoc:** All languages were created at once when the *Confusion of Tongues* occurred.

3 August Schleicher and the Discovery of Treeness

3.1 Regularity of Language Change

- Language change is a gradual process. (cf. Schleicher 1848, 25)
- Language change is a natural process which occurs in all languages. (cf. Schleicher 1848, 25)
- Language change is a law-like process. (cf. Schleicher 1848, 25)
- Language change is a universal process which occurs in all times. (cf. Schleicher 1873[1863], 10f)

3.2 Sound Laws as Litmus Test for Vertical Relations

- Vertical and horizontal language relations can be distinguished clearly: While the former are reflected in regular sound correspondences between different languages, the latter show up as spurious surface resemblances which do not follow a general pattern. (cf. Schleicher 1848, 67)

3.3 Language Evolution as a Tree-Like Process

- **inheritance as systematic:** Genetically related languages show a large body of traits inherited from their ancestor language.
- **change as regular:** Language change is a regular process which occurs according to certain laws.
- **origin as abrupt:** New languages originate in a split-process by which a language splits into two languages due to the parting of its speakers.

4 Back to Dendrophobia: Waves and Networks

4.1 Conflicting Data

- Johannes Schmidt on conflicting data:
Die europäischen, deutschen und arischen charakterzüge durchdringen einander so vollständig, dass eine ganze reihe von erscheinungen nur durch ir organisches zusammenwirken hervorgerufen ist, und dass es worte gibt, deren form weder ganz europäisch noch ganz arisch ist und nur als ergebniss diser beiden einander durchkreuzenden strömungen begreiflich wird. (Schmidt 1872:16)

- G. Bonfante on the problem of isoglosses:

Very rarely are we sure of isoglosses that we construct, [...] there always remains the possibility that the remaining languages have lost the sound, the form, or the word one is dealing with. (Bonfante 1931:75f) ¹⁾

4.2 Language Evolution as a Non-Tree-Like Process

- The distinction of horizontal and vertical traits is not clearcut, the data can easily betray the linguist. (cf. Brugmann 1904[1970], 21f)
- Languages do not simply split and then evolve independently, but diverge gradually. (cf. Schuchardt 1900[1870], 11)
- Language change is not a process which necessarily applies to a whole community of speakers of a certain language, but originates at some point and then spreads in wave-like manners over the area. (cf. Schuchardt 1900[1870], 29f)

4.3 The Quest for New Metaphors

Models:

- **Chain:**

Generally, one depicts the Indo-European languages in the form of a chain, every ring of which is connected with only two other rings, one to the right and one to the left. (Bonfante 1931, 174f ²⁾

- **Wave:**

Ich möchte an seine stelle das bild der welle setzen, welche sich in concentrischen mit der ent-fernung vom mittelpunkte immer schwächer werdenden ringen ausbreitet.” (Schmidt 1872, 27)

- **Network:**

Wir verbinden die Äste und Zweige des Stammbaums durch zahllose horizontale Linien, und er hört auf ein Stammbaum zu sein.(Schuchardt 1900[1870], 11f)

- **Animated Pictures:**

Ich möchte Ihnen das Bild des Stammbaums, das ich zurückweise, durch ein anderes ersetzen. Es sei der ganze Länderkomplex romanischer Zunge mit einer und derselben Farbe, mit Weiss, bedeckt, welches die allgemeine Vulgärsprache repräsentire; dieses Weiss verdunkle sich, nehme verschiedene matte Töne an, welche stärker und immer stärker hervortreten, bis endlich die Farben des Regenbogens unmerklich ineinander überfliessend vor unsern Augen stehen. Dieses Bild ist, weil es verschiedene, nicht einen einzigen Moment der Anschauung erfordert, zwar ein weniger einfaches als jenes, kommt aber eben darum dem auch keineswegs einfachen Sachverhalt näher. (Schuchardt 1900[1870], 26)

Visualizations:

- *Wave Model* as overlapping circles (Hirt 1905)
- Waves of isoglosses (?)
- Network (Bonfante 1931)

¹My translation, original text: “Ben di rado noi siamo certi delle isoglosse che costruiamo, [...] resta sempre la possibilità che le rimanenti lingue abbiano perduto il suono, o la forma, o la parola di cui si tratta.”

²My translation, original text: “Generalmente si fa delle lingue indoeuropee il disegno di una catena, per cui ogni anello è collegato con altri due soli anelli, uno a destra e uno a sinistra.”

5 Conclusion

- Horizontal relations are the most ordinary view on language relations throughout the history of linguistics.
- Only for a short duration of time, the family tree was the leading model to describe language evolution.
- Soon after the tree model was introduced into linguistics, linguists would criticize the concept, proposing various other ways to model language evolution, yet none of these attempts has gained general acceptance.

References

- Bonfante, G. 1931. I dialetti indoeuropei. *Annali del R. Istituto Orientale di Napoli* 4.69–185.
- Brugmann, Karl. 1904[1970]. *Kurze vergleichende Grammatik der indogermanischen Sprachen. Auf Grund des fünfbandigen Grundrisses der vergleichenden Grammatik der indogermanischen Sprachen von K. Brugmann und B. Delbrück' verfasst*. Strassburg: Karl J. Trübner, photomechanischer Nachdruck 1970. Walter de Gruyter & Co., Berlin edition.
- Cruciger, Georg. 1616. Harmonia linguarum quatuor cardinalium: Hebraicae graecae latinae & germanicae: In qua praeter summum earum consensum, acceptionumque propriarum ab impropriis distinctionem, perpetua unius ab altera, origo perspicue deducitur. In *Gallica. La bibliothèque numérique*.
- Hirt, Herman. 1905. *Die Indogermanen. Ihre Verbreitung, ihre Urheimat und ihre Kultur*, volume 1. Strassburg: Trübner.
- Kluge, Friedrich, & Elmar Seebold. 2002. *Etymologisches Wörterbuch der deutschen Sprache*. Berlin: de Gruyter, 24., durchges. und erw. Aufl. edition.
- Münster, Sebastian. 1523. Dictionarium hebraicum: nunc primum editum et typis excusum, adiectis chaldaicis vocabulis non parum multis. In *Gallica. La bibliothèque numérique*.
- Orel, Vladimir. 2003. *A handbook of Germanic etymology*. Leiden: Brill.
- Plato. 1921[ca. 399 BC]. Cratylus. In *Plato in twelve volumes. Translated by Harold N. Fowler*, volume 12. Cambridge, MA: Harvard University Press.
- Quintilian. 2006. *Institutes of oratory*. Iowa: . Ed. Honeycutt, Lee. Trans. Watson, John Selby. <http://honeyl.public.iastate.edu/quintilian/>.
- Reuchlin, Johannes. 1506[1974]. De rudimentis hebraicis libri iii. In *De rudimentis hebraicis libri III*, ed. by Johannes Reuchlin. Hildesheim: Olms.
- Schleicher, August. 1848. *Zur vergleichenden Sprachengeschichte*. Bonn: König.
- Schleicher, August. 1873[1863]. *Die Darwinsche Theorie und die Sprachwissenschaft: offenes Sendschreiben an Herrn Dr. Ernst Haeckel*. Weimar: Boehlau, 3 edition.
- Schmidt, Johannes. 1872. *Die Verwandtschaftsverhältnisse der indogermanischen Sprachen*. Hermann Böhlau.
- Schuchardt, Hugo. 1900[1870]. *Über die Klassifikation der romanischen Mundarten. Probe-Vorlesung, gehalten zu Leipzig am 30. April 1870*. Graz: .
- Wells, Rulon S. 1987. The life and growth of language: Metaphors in biology and linguistics. In *Biological metaphor and cladistic classification: An interdisciplinary perspective; [papers from a Symposium on Biological Metaphor Outside Biology, held Mar. 4 - 5, 1982 ... at the American Philos. Soc.'s Library in Philadelphia]*, ed. by Henry Max Hoenigswald, 39–80. Philadelphia: Univ. of Pennsylvania Pr.