

Shaping Comparative Linguistics: The Achievement of Franz Bopp

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Abstract: Franz Bopp (1791-1867) is commonly regarded as one of the founding fathers of Indo-European comparative grammar. Bopp's primary interest was in the origin of grammatical forms, a goal he pursued, from 1816 on, through the analytical comparison of formative processes of inflectional word classes in Sanskrit, Greek, Latin, German, and Persian in a first stage (other Indo-European languages were progressively included in his scholarly spectrum). The larger part of Bopp's work was in the field of Sanskrit, but his interest in the unitary mother language (*Stammsprache*) led him to write the first comparative grammar of Indo-European (published in three volumes over the years 1833-1852); this comprehensive work (of which a second edition appeared in 1857-1861, and a third in 1868-1871) was preceded and followed by studies in which Bopp applied an analytical procedure to the segmentation, the classification and the explanation of grammatical forms. The present contribution examines the assumptions or hypotheses underlying Bopp's work, and the resulting claims (regarding the structure of Indo-European roots, the constitution of grammatical forms, and the content-side of grammatical morphemes), with an eye to Bopp's intellectual and institutional position as well as to his appraisal by contemporaries and by subsequent generations of scholars.

Keywords: Analytical comparison (of linguistic forms). Franz Bopp. Comparative linguistics. Wilhelm von Humboldt. Indo-European. Sanskrit.

Moldando a Linguística comparada: a conquista de Franz Bopp

Resumo: Franz Bopp (1791-1867) é comumente considerado um dos fundadores da gramática comparativa indo-europeia. O interesse principal de Bopp estava na origem das formas gramaticais, objetivo que ele perseguiu, a partir de 1816, através da comparação analítica de processos formativos de classes de palavras flexionais em sânscrito, grego, latim, alemão e persa numa primeira etapa (outras línguas indo-europeias foram progressivamente incluídas no seu espectro). A maior parte do trabalho de Bopp foi no campo do sânscrito, mas o seu interesse pela língua materna unitária (*Stammsprache*) levou-o a escrever a primeira gramática comparativa do indo-europeu (publicada em três volumes ao longo dos anos 1833-1852); esta obra abrangente (da qual apareceu uma segunda edição em 1857-1861, e uma terceira em 1868-1871) foi precedida e seguida por estudos nos quais Bopp aplicou um procedimento analítico à segmentação, à classificação e à explicação de formas gramaticais. A presente contribuição examina os pressupostos ou hipóteses subjacentes ao trabalho

de Bopp e as reivindicações resultantes (relativamente à estrutura das raízes indo-europeias, à constituição das formas gramaticais e ao conteúdo dos morfemas gramaticais), com um olhar para a posição intelectual e institucional de Bopp, bem como na sua avaliação pelos contemporâneos e pelas gerações subsequentes de estudiosos.

Palavras-chave: Franz Bopp. Comparação analítica (de formas linguísticas). Linguística comparada. Wilhelm von Humboldt. Indo-europeu. Sânscrito.

| 1. Franz Bopp: The road to (Indo-European) comparative grammar

Born in Mainz on September 14, 1791 to a family² in the service of the Prince-Elector (*Kurfürst*) of Mainz, viz. Friedrich Karl von Erthal, Franz Bopp's youth was marked by the political and ideological context of the French Revolution. In 1797 the treaty of Campo Formio assigned Mainz to the French Republic, upon which the Bopp family followed the Mainz court in its move to Aschaffenburg, where a new university was founded by Karl Theodor von Dalberg, consisting of the faculties of theology, philosophy and law. Bopp, after studying at the Aschaffenburg gymnasium, enrolled at its university, which had a short life-span (1808-14), largely coinciding with young Bopp's academic education (1809-12). Among the professors at Aschaffenburg the one who left the deepest impression on him was Karl Joseph Hieronymus Windischmann [1775-1839], professor of philosophy and of (universal) history (German *Weltgeschichte*). Windischmann, who later published a comprehensive work on Oriental philosophy (*Die Grundlagen der Philosophie im Morgenland*, 1827-1834) was a thinker strongly influenced by Romanticism, and an admirer of the ancient Oriental cultures of Egypt, Mesopotamia, Persia, India and China. Windischmann's classes, building on the excitement caused by then recently published works on Oriental religion, philosophy and literature, such as Friedrich Schlegel's [1772-1829] *Über die Sprache und Weisheit der Indier* (1808) and Johann Joseph (von) Görres' [1776-1848] *Mythengeschichte der asiatischen Welt* (1810), captivated the mind of Bopp, and determined him to embark on the study of the classical languages of India, Vedic and Sanskrit. No doubt his thorough reading of Schlegel's 1808 book, containing praise for the Sanskrit language, catalyzed his decision. He was encouraged to study Oriental languages in Paris by Helmine (Wilhelmina) von Chézy (born Freiin von Klencke) [1783-1856], the wife of Antoine Léonard de

² Bopp's father, Andreas Bopp, was a Bavarian civil functionary at the service of the Mainz court; his mother, Regina Linck, descended from a bourgeois family in Mainz. On Franz Bopp's life and career, see Kuhn (1868), Leskien (1876), Lefmann (1891-97), Wüst (1955), Koerner (1984) and Schlerath (1989).

Chézy [1773-1832], professor of Oriental languages in Paris, when she visited the court at Aschaffenburg in 1812³. In the autumn of 1812 Bopp, having received a stipend from the Bavarian government⁴, installed himself in Paris, and started taking classes with Chézy and Antoine-Isaac Silvestre de Sacy [1758-1838].

While Chézy's knowledge of the Sanskrit language was limited, he strongly supported Bopp in his study of Indian mythology and literature. According to Bopp's own testimony⁵ he largely studied Sanskrit on his own, and while in Paris, he even taught Sanskrit to August-Wilhelm Schlegel [1767-1845]. With Sacy Bopp studied Persian and (classical) Arabic, and became acquainted with the principles and terminology of morphological analysis as practiced in the Jewish-Arabic tradition⁶. From Bopp's correspondence with Windischmann during his years in Paris⁷ it is clear, however, that his fundamental interest was a philosophical-historical one: "the study of the Vedas is my goal", he wrote on February 24, 1815 (*Die Veda's sind mein Ziel*; Lefmann, 1891-1897: vol. II, p. 18*); and on November 20, 1815 he outlined his ideas on turning the study of languages into a philosophical and historical subject. In a letter of late May or early June 1816 he was even more explicit:

Mein Plan geht dahin, von allen Sprachen, wovon einige Kenntniss zu erwerben möglich, das eigentliche Wesen aufzufassen und ihr Verhältniss und Beziehung zu andern Sprachen (Lefmann, 1891-1897: vol. I, p. 41*)⁸.

[My plan consists in capturing, for all the languages of which one can attain some knowledge, their true essence and their relationship to other languages (my translation)]

3 The meeting with Bopp is mentioned in H. von Chézy, *Unvergessenes: Denkwürdigkeiten aus dem Leben der Helmine von Chézy, von ihr selbst erzählt* (Leipzig, 1858), vol. II, p. 64.

4 The fellowship granted to Bopp was the object of an explicit mention by August-Wilhelm Schlegel in the *Heidelberger Jahrbücher der Litteratur*, fasc. 9 of September 1815, p. 892; this is the first reference to Franz Bopp in the scholarly literature.

5 See Bopp's preface to his edition of the Nala episode (Bopp 1819); cf. also his correspondence with Windischmann.

6 The morphological analysis into roots, modifying elements, endings, as practiced in the Jewish-Arabic tradition and in Sanskrit grammar introduced a new perspective in Bopp's view of grammatical organization, based on the classification into word classes; for the latter aspect, he was indebted to A.F. Bernhardt (*Sprachlehre*, Berlin, 1801-1803, 2 vols; *Anfängsgrunde der Sprachwissenschaft*, Berlin, 1805) and G. Hermann (*De emendanda ratione Graecae grammaticae*, Leipzig, 1801).

7 See Lefmann (1891-97: vol. I, p. 3*-57*); in total there are 32 letters for the period between January 1813 and October 1818.

8 I have respected the orthography of the original.

Around the same time Bopp's first work, written in German, was published – while he was still studying in Paris – by the Andreäische Buchhandlung in Frankfurt. The printing of the book, titled *Über das Conjugationssystem der Sanskritsprache in Vergleichung mit jenem der griechischen, lateinischen, persischen und germanischen Sprache, nebst Episoden des Ramajan und Mahabharat in genauen, metrischen Uebersetzungen aus dem Originaltexte und einigen Abschnitten aus den Veda's*, had been overseen by Windischmann, who contributed an enthusiastic preface (*Vorerinnerungen*, “Preliminary memories”)⁹. Windischmann's introduction reads as the “investiture” of the leader of what was to become a German discipline, revolutionizing the current state of language study, and showing the historical-anthropological relevance of the old Germanic (!) language monuments. As a matter of fact, after stressing his own merits in having fostered Bopp's philosophical and historical interest in the study of languages, and after outlining Bopp's project to study the character and mindset of Oriental antiquity (*Charakter und Denkart des morgenländischen Altherthums*), Windischmann stresses the importance of the study of Gothic for Bopp and, more generally, for all those interested in the relationships between Sanskrit and German.

Windischmann touches upon the fundamental aim of Bopp's 1816 work: its goal is to show the organic workings of language. In order to do this, Bopp analyses the most fundamental component in language, viz. the verb (*Zeitwort*, ‘time-word’), which is the grammatical bond between subject and predicate, and thus the expression of the essential relation in language. The approach must be comparative, so as to enhance the validity of the resulting conclusions; and the comparison deals with the ‘sacred language of India’ – most apt to express, through inner inflection of the stem syllable, the various relations and additional features¹⁰ – and its cognate languages, viz. Greek, Latin, German and Persian¹¹.

Unter den Sprachen, die mit dem Sanskrit in engster Verwandtschaft stehen, verstehe ich vorzüglich das Griechische, Lateinische, Germanische und Persische. [...] Um die Wahrheit dieser für die Geschichte der Sprachen äusserst wichtigen Sätze in ihrem vollen Lichte zu zeigen, ist es nothwendig, uns vor allem mit dem Conjugationssystem der altindischen Sprachen bekannt zu machen, sodann die Conjugationen der griechischen

⁹ The preface is dated May 16, 1816, but this is probably an anticipatory dating for the actual publication date of the work. On May 16, 1866 colleagues and (former) students of Bopp organized a celebration commemorating the 50th anniversary of the publication of the *Conjugationssystem*.

¹⁰ For this idea, see Bopp (1816, p. 6-7).

¹¹ Cf. Bopp (1816, p. 137) on his goal of establishing the principles and origin of the grammatical forms.

und römischen, der germanischen und persischen Sprache vergleichend zu durchgehen, wodurch wir deren Identität einsehen, zugleich aber die allmähliche und stufenweise Zerstörung des einfachen Sprachorganismus erkennen und das Streben beobachten werden, denselben durch mechanische Verbindungen zu ersetzen, woraus, als deren Elemente nicht mehr erkannt wurden, ein Schein von neuem Organismus entstand (Bopp, 1816, p. 9, 10-11).

[Among the languages that stand in closest relationship to Sanskrit, I accord a special place to Greek, Latin, Germanic, and Persian. [...] In order to show in full light the truth of these sentences so utterly important for the history of languages it is necessary to become acquainted first of all with the conjugation system of the old Indic languages, and then to deal comparatively with the conjugation of the Greek, Latin, Germanic and Persian languages, so that we can understand their unity, and at the same time the progressive and gradual perturbation of the simple language organism, and so that we can observe the tendency to replace this (organism) with mechanic combinations, out of which the appearance of a new organism arises when their elements are no longer recognized (my translation)]

Bopp speaks here of affinity or parental relationship (*Verwandtschaft*), and this should be taken in the sense of form-organizational relationship, and not in the sense of a 'generational' relationship of descent. As a matter of fact, Bopp notes that Bengali, though more closely linked to Sanskrit, as shown by its lexicon, is grammatically – i.e. 'structurally' – rather distinct from the classical language of India.

Bopp's *Conjugationssystem* is an attempt to understand the formation (*Bildung*) of verb forms, as it existed in the "simple language organism" (*einfaches Sprachorganismus*); this simple organism has to be studied primarily through the analysis – in fact a dissection of verb forms – of the verb system in Sanskrit, Greek, and Gothic, since languages such as Latin testify to the introduction of new processes, especially periphrasis (*Umschreibung*); such processes are not new 'organic' modifications, but mechanical devices.

In his 1816 work Bopp proceeds by discussing, consecutively, the building of verb forms in Sanskrit (chapter 2, p. 12-60), Greek (ch. 3, p. 61-87), and Latin (ch. 4, p. 88-115); those of German(ic) and Persian are treated together in a single chapter (ch. 5, p. 116-136)¹². The ideas put forward in the *Conjugationssystem* can be summarized as follows:

¹² In an appendix Bopp (1816, p. 137-157) deals with the past tense verb forms in Germanic.

(1) The analytical comparison of the verb system of the five languages shows a common origin;

(2) This common origin appears in the two formative processes, viz.

a) internal change (*Ablaut*) of the root

b) agglutination or incorporation (*Einverleibung*), which is chronologically posterior¹³.

Bopp uses comparison here in order to substantiate a *glottogenetic* claim, viz. to explain inflection as arising from the fusion of lexical roots or stems with independent (grammatical) elements. In his 1816 work Bopp refrained from elaborating on the theoretical implications of this view, but he was well aware of the fact that this view was radically opposed to the one put forward by Friedrich Schlegel, who had clearly separated internal modification of the root (as an organic principle) and external annexing (as a mechanical procedure), assigning these to two radically different types of languages.

2. The Humboldt connection

Determined to delve deeper into the structure of Sanskrit, Bopp conceived the idea of studying in England, and of getting in touch with Sanskrit scholars there. He obtained a stipend from the Bavarian government and left for London in October 1818, where he actively studied Sanskrit manuscripts. There Charles Wilkins [1749-1836] put at his disposal Sanskrit letter fonts, so that Bopp's edition, with a Latin translation, of the famous *Mahābhārata* episode concerning king Nala could appear in print in 1819 (Bopp 1819). For this edition Bopp used the transcripts he had first made in Paris and collated these with the new manuscript witnesses he found in London. But through his contacts with Wilhelm von Humboldt [1767-1835] he was encouraged to pursue the ideas outlined in his *Conjugationssystem*. Embarking upon an English translation of his 1816 work, Bopp was led to make explicit his disagreement¹⁴ with Friedrich Schlegel¹⁵, and to provide a theoretical foundation for his views on the constitution of verb forms. In June 1820 the result of his English reworking was published in

13 See Bopp (1816, p. 95 and 96); Bopp identifies this *Einverleibung* specifically in the future forms of Sanskrit and Greek, in the precativ forms of Sanskrit, and in the perfect and imperfect forms of Latin.

14 The first traces of (implicit) disagreement appear in the appendix (*Nachtrag*) of the *Conjugationssystem*.

15 An extremely interesting testimony concerning Bopp's changing attitude with regard to F. Schlegel's views is offered by his letter of March 5, 1820 to W. von Humboldt published in Lefmann (1891-97: vol. III [= *Nachtrag*], p. 7).

the *Annals of Oriental Literature* under the title *Analytical Comparison of the Sanskrit, Greek, Latin, and Teutonic Languages, Shewing the Original Identity of their Grammatical Structure* (Bopp 1820)¹⁶. The 1820 text is strikingly different from Bopp's 1816 work. On the one hand, it leaves out completely Persian; on the other hand, its organization is determined not by the successive treatment of various ancient languages, but by a theoretical division: after the introduction there are just two chapters, a briefer one dealing with the "roots", a longer one dealing with the "verbs".

Of all of Bopp's works, the *Analytical Comparison* is the one that has the most theory in it. There is first an explicit statement about the value of the comparative endeavor; the inquiry into the 'analogy' of Sanskrit with Greek, Latin, and Germanic has a threefold relevance:

It shews the higher or lower degree of affinity by which nations, who in the remotest antiquity wandered from the land of their ancestors into Europe, are connected with the present inhabitants of India.

It shews, secondly, that those refinements of grammatical construction by which the Sanskrit is so advantageously distinguished from all the spoken dialects of the Indian world, already existed in that remote antiquity, when colonies, leaving their Asiatic seats, transplanted into Europe their native tongue [...]

Another and not less important reason, which makes a critical comparison of the Sanskrit with its European sisters, worthy to be undertaken, is the light thrown thereby upon each of the languages compared, and the clearer view we thence obtain of the most ancient forms of each respectively, and probably some conception of the original and primitive signification of a great part of the grammatical inflections common to all (Bopp, 1820, p. 1-2).

A second important theoretical statement relates to the role of Sanskrit in the comparison: in his 1816 book Bopp had not been very clear on this issue, but in 1820 he puts Sanskrit on the same level as the other languages, i.e. as "subsequent variations of one original language". While Sanskrit is said to have best preserved the characteristics of the original language, it also happens that in some instances "grammatical forms lost in Sanskrit have been preserved in Greek or Latin".

¹⁶ The work was reedited by Friedrich Techmer in his *Internationale Zeitschrift für allgemeine Sprachwissenschaft* 4 (1889), p. 14-60, together with a letter by Wilhelm von Humboldt. This reedition was reprinted in 1974.

Thirdly, in the *Analytical Comparison* Bopp expounds his theory of the Indo-European root as monosyllabic¹⁷, segmentally diversified (possible configurations that are mentioned are V, CV, CVC, VC [V = vowel; C = consonant]), and not defined by the number of “letters”.

Fourthly – and here Bopp assumes a stand radically opposed to that of Friedrich Schlegel¹⁸ – the grammatical forms of Indo-European¹⁹ can consist of inflection and of affixing (= addition). Bopp also redefines “grammatical inflection” as it was used by Schlegel: he distinguishes (a) genuine inflection²⁰, which is either a change of vowels (= *Ablaut*) or a (consonantal) reduplication, a process which does not involve a “modification of the sense”, and (b) the process (erroneously labelled ‘grammatical inflection’ by F. Schlegel) of adding “particles” to a (verbo-nominal) root, a formative process which entails a modification of the sense.

The fifth theoretical statement underlying Bopp’s view of the build-up of grammatical forms has a philosophical basis: referring to the ideas of Everardus Scheidius [1742-1795]²¹, Bopp (1820, p. 11) defends the thesis – ultimately reaching

17 Bopp may have found inspiration for this view of monosyllabic roots in J.C. Adelung’s *Über den Ursprung der Sprache und den Bau der Wörter, besonders des Deutschen* (Leipzig, 1781). The claim of monosyllabic roots entailed two consequences: (a) the rejection of F. Schlegel’s theory; (b) the analysis (supported by data from the Semitic languages) of personal affixes as deriving from pronouns.

18 Bopp’s departure from F. Schlegel’s views also separated him from Friedrich’s brother (and Bopp’s former fellow-student) August-Wilhelm Schlegel (cf. Timpanaro 1973); the latter may have encouraged Christian Lassen to write a long, and rather critical review of Bopp’s Sanskrit grammar (*Indische Bibliothek* 3, 1828-1830, p. 1-113).

19 Bopp mostly speaks of *Stammsprache*, or of *Urperiode der Sprache* (or *Periode der Spracheinheit*) with reference to what we call today (common or proto-) Indo-European; although he used *indisch-europäisch* in his *Vergleichende Grammatik* (cf. Bopp, 1833, p. V: “indisch-europäischer Sprachstamm”) and, in the later editions, *indoeuropäisch* (cf. Bopp, 1857, p. XXIV: “Ich nenne den Sprachstamm, dessen wichtigste Glieder in diesem Buche zu einem Ganzen vereinigt werden, den indoeuropäische”), he did not make systematic use of these terms in order to refer to the ancestor language. In Germany the term *indogermanisch* (introduced by Julius Heinrich von Klaproth [1783-1835], and also used, next to *Sanskritisch*, by Wilhelm von Humboldt), was widely diffused due to its use by August Friedrich Pott [1802-1887].

20 “The only real inflections which I consider possible in a language, whose elements are monosyllables, are the change of their vowels and the repetition of their radical consonants, otherwise called reduplication” (Bopp, 1820, p. 12).

21 Scheidius’ views are quoted by Bopp (1820, p. 11). The issue of the sources for Bopp’s ideas on the glottogenetic analysis of verb forms is a matter of dispute. Verburg (1950) offers an extensive, but rather confused overview of possible sources, and does not substantiate his final inclination towards a Leibnizian influence on Bopp; cf. Timpanaro (1973, p. 575) and Morpurgo-Davies (1996, p. 212). On the one hand, the (direct or indirect) role of the Dutch Hemsterhusian doctrine, expounded by, among others, Scheidius, can hardly be dismissed, but neither should the possible influence of (French) general grammar (which Bopp must have been acquainted with through the teachings and writings of Silvestre de Sacy) be discarded: the decomposition of (attributive) verb forms into subject + copula + present participle of the attributive verb was a central component of the *grammaire générale*. Interestingly, Bopp reactivated this doctrine while he was studying in England, and he may have felt supported in his theorizing by the use of the present continuous forms in English.

back to Aristotle, and revived by the tradition of general grammar – that verb forms fundamentally have the (underlying) structure <[Subject] *is* (...) *-ing*> (e.g. *John sings* = ‘John-is-singing’, here illustrated for the present tense)²². Based on such a view verb forms are analysed as consisting of

- (a) the root + a person-marking particle [a pronoun, often in a shortened form]: this happens, e.g., in the present tense;
- (b) the root (possibly in a modified form) + a mood-indicating element + a person-marking particle: this formation is attested for the potential;
- (c) an “extraneous addition” + the root + a person-marking particle: this formation is attested for preterit forms;
- (d) a reduplicated root + a person-marking particle, as we find in the second preterit forms;
- (e) the root + a form of the verb ‘to be’ + person-marking particle: the form of the verb ‘to be’ may be a present tense form or a potential mood form.

This “segmentational”²³ view of Indo-European verb forms has a direct bearing on Bopp’s view of language structure. The borderline between ‘organic’ and ‘mechanic’, while neat in principle, breaks down when it comes to linguistic reality: the Indo-European languages combine ‘organic’ and ‘mechanic’ principles, and in the course of history the latter have grown more diversified and more pervasive. Also, the affixing of particles is the crucial method for making language an instrument of interpersonal communication, in which it is essential to make utterances, viz. sentences linking a subject to a predicate.

All this forms part of Bopp’s comparative approach, which consists of segmenting forms, so as to separate (i) roots (liable to undergo an organic change), (ii) ‘particles’ that can be added to the root and which have a definable grammatical meaning, (iii) ‘letters’, not reducible to one or the other particle, but responsible for an added grammatical value (e.g., potential or preterit).

What can be said about the historical reconstruction of all this? Here, Bopp falls back on three principles:

- (a) a psychological-historical one, offering a genetic account of verb forms as a synthesis of a lexical root (expressing an attribute) and a (specifying) particle;

22 Bopp finds direct evidence for this analysis in the Latin verb *posse* (e.g., *pos-sum*; *pot-es*; *pot-est*, etc.).

23 *Zergliederung* (i.e. “dis-membling” or “segmentation”) is a key term in Bopp’s approach.

(b) the analogy with attested historical phenomena, e.g. the building of the Romance future with auxiliary verbs (most prominently the verb ‘to have’);

(c) a general principle of loss of autonomy (or ‘disconnectedness’).

Bopp’s sojourn in London, which extended to October 1820, was fruitful in many respects: he was able to pursue his study of Sanskrit, availing himself of the possibility of consulting manuscripts of literary and religious texts deposited in British libraries, and of receiving help from leading Sanskrit scholars such as Charles Wilkins. In addition, he became a close friend of Wilhelm von Humboldt, the Prussian ambassador in London, with whom he read Sanskrit texts and discussed linguistic themes. The extensive correspondence²⁴ between Bopp and Humboldt testifies to their friendly relationship, and to their common interest in language classification, the nature of grammatical categories, and the constitution of grammatical forms.

Upon his return to Germany Bopp tried to obtain a chair at a Bavarian university, but no chair was created for him. In 1820 he received an honorary doctoral degree from the university of Göttingen, in recognition of his merits. Finally, in 1821, with the support of the two Humboldt brothers, he was appointed professor extraordinary at Berlin university, replacing Georg Heinrich Bernstein [1787-1860], a specialist of Semitic languages. In 1822 he became a member of the Berlin academy of sciences, and in 1825 he was promoted to the rank of ordinary professor. The chair he held was “Oriental literature and general linguistics” (*Orientalische Litteratur und allgemeine Sprachkunde*). The decision of the Berlin philosophical faculty was justified as follows²⁵:

Der Doctor Bopp ist nach dem Urtheil aller Sachkenner nicht nur einer der gründlichsten Kenner der indischen Sprache, vielleicht der gründlichste unter allen, welche auf dem festen Lande von Europa mit dieser schweren Sprache sich beschäftigen, sondern auch zugleich ein philosophischer Sprachforscher, welcher seine speziellen Forschungen über die indische Sprache benutzt zur Ergründung der Natur und Beschaffenheit der

24 The correspondence between Bopp and Humboldt is published in Lefmann (1891-97: vol. III [= Nachtrag]). In total there are 115 letters, between September 5, 1819 (letter from Bopp to Humboldt) and March 16, 1825 (letter by Humboldt). The letters testify to Humboldt’s reliance on Bopp’s authority in Sanskrit studies and in comparative grammar. Humboldt had sound intuitions about accentuation (and its impact on stem alternations), but did not elaborate on his ideas in view of Bopp’s rather dogmatic stand; cf. Benfey (1869) and Verburg (1950).

25 Archiv der Humboldt-Universität Berlin, Ifd. Nr. 1454, Bl. 128/9.

menschlichen Sprache im Allgemeinen (Archives of the Humboldt university).

[Dr. Bopp is, according to all experts, not only one of the most thorough connoisseurs of the Indic language, maybe the most thorough of all those who on the continent occupy themselves with this difficult language, but also at the same time a philosophically minded language scholar who uses his specialized investigations on the Indic language in order to elucidate the nature and the disposition of human language in general (my translation)]

Bopp was to stay for the rest of his life in Berlin, teaching courses till 1867. During 45 years of teaching he first taught Oriental languages (including Semitic languages) and a general course on the history of languages, and from the 1830s on, basically Sanskrit literature and grammar, and the comparative grammar of the Indo-European languages. There are no indications that he conceived his teaching of general linguistics otherwise than as a comparative analysis of the (ancient) Indo-European languages.

For Bopp, who married in 1825, Berlin proved to be an appropriate setting in order to realize his life-time project: the (morphological) comparison of the languages related to Sanskrit. His reduced teaching (and examination) load, the facilities offered by the Berlin university library, the protection of the Humboldt brothers living in nearby Tegel, and the availability of the Berlin academy as a forum, created the ideal environment to conduct, in his study-room, analytical work, based on the linguistic dissection of texts and the perusal of grammars and dictionaries.

Preparing a comprehensive work on the comparison of Sanskrit, Persian, Greek, Latin, Lithuanian, Gothic and German, Bopp produced academic memoirs, in which he could offer a first treatment of the material. Between 1825 and 1832 he presented five memoirs which were to form part of his comparative grammar. They appeared under the general title “Vergleichende Zergliederung des Sanskrit und der mit ihm verwandten Sprachen” [‘Comparative segmentation of Sanskrit and languages related to Sanskrit’]²⁶.

26 The five memoirs are: I. *Von den Wurzeln und Pronomina erster und zweiter Person* [Abhandlungen der Königl. Akademie der Wissenschaften zu Berlin, Philosophisch-historische Klasse, 1825, p. 117-148]; II. *Über das Reflexiv* [1826, p. 191-200]; III. *Über das Demonstrativum und den Ursprung der Kasuszeichen* [1827, p. 65-102]; IV. *Über einige Demonstrativ-Stämme und ihren Zusammenhang mit verschiedenen Präpositionen und Conjunctionen* [1830, p. 27-47]; V. *Über den Einfluss der Pronomina auf die Wortbildung* [1832, p. 1-28]. Bopp also presented memoirs on the position of Celtic (1839, p. 187-272; published separately as Bopp 1839), of Old Prussian (published separately as Bopp 1853), and of Albanian (Bopp 1855) in the Indo-European family. The papers read by Bopp before the Berlin academy are conveniently gathered in Bopp (1972).

In 1833 the first volume of the *Vergleichende Grammatik* appeared; all in all, the work would comprise 3 volumes in its first edition, spread over twenty years (Bopp 1833-1852)²⁷. It was Bopp's lifework, and in the next decades he was to revise this standard work, of which a second and third edition appeared²⁸.

Bopp's *Vergleichende Grammatik* brings to their logical conclusion the views put forward in his early works, of 1816 and 1820. The result can be summarized as follows (cf. Delbrück, 1884, p. 13-14; 1905, p. 61-63): 1° Indo-European words are derived from monosyllabic roots (of which there exist two types: verbo-nominal and pronominal); 2° case-endings are, as a general rule, originally pronouns; 3° personal endings of verb forms stem from pronouns; 4° the verbal augment is identical with the *a privativum*; 5° the causative suffix contains the verb "to go", and the desiderative suffix contains the verb "to be"; 6° stem-building suffixes are either of verbal or pronominal origin.

When on October 23, 1867 Bopp passed away – having taught his classes up to a few months before –, he was praised for his outstanding merits in the field of Sanskrit studies and Indo-European comparative grammar, to which he had contributed by his teaching and his writings, and by his active participation in the activities of the Berlin academy.

3. Bopp's work in retrospect

The historical-comparative grammar of Indo-European languages today has an overall debt to Bopp, but owes hardly anything specific to him. Paradoxical as this may seem, this retrospective judgment is appropriate. On the one hand, Bopp – together with other scholars, such as Rasmus Kristian Rask [1787-1832], Jacob Grimm [1785-1863], and August Wilhelm Schlegel and Lorenz Diefenbach [1806-1883] – established a field of research²⁹. Bopp also laid down

27 The *Vergleichende Grammatik* basically consists of two parts: a shorter phonetic part (§§ 1-104), followed by paragraphs on root structure (§§ 105-111), and an extensive morphological part, dealing with inflection (§§ 112-777) and word-formation (§§ 778-1016).

28 The second edition of the *Vergleichende Grammatik* appeared between 1857 and 1861, the third, based on Bopp's annotations, was published posthumously between 1868 and 1871.

29 Cf. Saussure (ed. 1968-74, vol. I, p. 3-4): "La troisième période commença lorsqu'on découvrit qu'on pouvait comparer les langues entre elles. Ce fut l'origine de la philologie comparative ou «grammaire comparée». En 1816, dans un ouvrage intitulé *Système de la conjugaison du sanscrit*, Franz Bopp étudie les rapports qui unissent le sanscrit avec le germanique, le grec, le latin, etc. Bopp [...] a compris que les relations entre langues parentes pouvaient devenir la matière d'une science autonome. Eclairer une langue par une autre, expliquer les formes de l'une par les formes de l'autre, voilà ce qui n'avait pas encore été fait". Saussure's statement should be nuanced and corrected: Bopp was not a pioneer in the comparison of (ancient) Indo-European languages, and in the study of the origin of (Indo-European) grammatical forms. Apart from having been influenced by contemporaries such as the Schlegel brothers and W. von Humboldt, and apart from having

a style of research and, at least for some time, a style of writing. In addition, he produced extremely useful textbooks, and an authoritative compendium, viz. his *Vergleichende Grammatik*. But Bopp – who explicitly refrained from (historical) etymology – did not go beyond the analytical comparison of forms (yielding at times valuable hypotheses): his view on the historical relationship of the languages he compared was meager³⁰, and his grasp of historical processes limited. His talent lay in connecting segmented grammatical forms, but he did not engage in a study of the (morpho)phonemic processes affecting these forms.

It would be unfair to level against him a neglect of phonetic detail, but his obstinate belief in the non-grammatical nature of apophony – a view which he dogmatically maintained against Grimm³¹ and, in correspondence, against Humboldt – made him miss the essential distinction between *phonically* triggered changes and *grammatically* relevant alternations (although the two may have the same “surface” realization).

Bopp’s general approach to language has been the object of diverging interpretations³². There are at least three reasons to this: (a) first, Bopp was not really a ‘language theoretician’, and he never reached the level of generalization attained by W. von Humboldt or the Schlegel brothers; (b) second, Bopp’s general pronouncements are not very numerous³³ and, when they occur, they are wrapped in metaphorical phrasing³⁴; (c) third, Bopp’s approach was – at least in our modern view – an ambivalent one, in that it was defined as a contribution to natural history, thus contributing to both ‘naturalistic’ and ‘historical’ research. In Bopp’s mind, such an approach (parallel to comparative anatomy as the road towards a natural history of species) was felt to be unproblematic (cf. Bologna 1992). It remains, however, a fact that Bopp’s notion of ‘organism’ (*Organismus*)

been able to profit from insights obtained in the field of Semitic and Finno-Ugric comparative linguistics, he could build on a long, though not cumulative, tradition of glotto-genetic research and language comparison; cf. e.g. Orlandi (1962), Hiersche (1975), Van Hal (2010).

30 This appears from the fact that he did not go into a thorough discussion of intergroup relationships, nor into the chronology of Indo-European (cf. Morpurgo-Davies 1994). Bopp’s terminology concerning linguistic descent within Indo-European is poor and vague; he speaks of *Sprachtrennung* (‘language separation’) and *Individualisierung* (‘individualization of a language’), but does not provide a linguistic content for these terms.

31 In his review of Grimm’s German(ic) grammar, Bopp defends the view of a phonically, i.e. ‘mechanically’, induced alternation of root vowels; see his “Besprechung der Deutschen Grammatik von Dr. Jacob Grimm” (Bopp 1827), which was expanded in Bopp (1836). On this controversy, see Schlerath (1982).

32 For an overview see Bologna (1992), who lends support to Terracini’s (1949) interpretation of Bopp.

33 The passages in question stem from the beginning of the *Vergleichende Grammatik* and from the first pages of Bopp’s *Vocalismus*.

34 On Bopp’s use of metaphors, see Delbrück (1884; 1904), Wells (1987) and especially Panagl (1994).

is undefined³⁵. Likewise, Bopp's concepts of 'physical' and 'mechanical' laws are rather vague; when the French translation of the *Vergleichende Grammatik* was being prepared, he was asked by Michel Bréal [1832-1915] to provide a definition of the terms³⁶. As a more general observation, one can say that Bopp viewed languages as massive formations, of which the origin and development could be analytically traced; within the history of languages, he hardly provided room for linguistic communities, let alone for the speaking subject.

As to the basic manifestation of the historicity of language – viz. linguistic change – Bopp seems to have understood the nature of change in a rather static way: static, because he frequently appeals to an explanation in terms of “euphony”. Initially, his view of change was also rather *asystemic*: in 1816, he speaks of arbitrariness, chance, hazard, but later he adopted a more nuanced view, recognizing, at least to some extent, regularity³⁷ in the modification of sounds³⁸.

Starting with the following generation of Indo-European scholarship, the fundamental shortcomings of Bopp's approach were superseded, and his naturalistic-organicist view of language was abandoned by the Neogrammarians and their followers.

An indisputable merit of Bopp was his willingness to extend the comparative frame: in his reworking of the *Vergleichende Grammatik*, he successively included Celtic³⁹, Armenian⁴⁰ and Albanian (cf. also Bopp 1855)⁴¹. Unfortunately, his focus

35 Bopp's use of 'organism' and 'organic' has been carefully studied by Morpurgo-Davies (1987); on organicist thinking in 19th-century linguistics, see Kucharczik (1998). According to Delbrück (1884, p. 18; 1904, p. 66), 'organic' in Bopp boils down to 'original; primitive'; this, however, is a reductionist interpretation. Compare Bopp's own statements in Bopp (1833-1852: vol. I, p. III) and Bopp (1836, p. 1 and p. 3).

36 Bopp's clarification (quoted from a letter to Bréal) is given in the French translation of the *Vergleichende Grammatik: Grammaire comparée des langues indo-européennes [...]*, vol. I (Paris, 1866), p. 1. The information provided there shows that for Bopp 'mechanical laws' (or 'gravitation laws') are linked to the weight of endings and their impact on the preceding root syllable; 'physical laws' are laws related to articulatory processes (e.g. assimilation).

37 In 1825 Bopp used for the first time the term *Laut-Gesetz* (in the second academy memoir [cf. *supra*, note 26] on reflexive forms).

38 See, e.g., Bopp (1833, p. 236), where two types of “euphonic” changes are recognized.

39 Here Bopp followed J.C. Prichard (*The Eastern Origin of the Celtic Nations proved by a comparison of their dialects with the Sanskrit, Greek, Latin, and Teutonic Languages*, London, 1831) and A. Pictet (*De l'affinité des langues celtiques avec le sanscrit*, Paris, 1837).

40 For his study of Armenian, Bopp was indebted to J.H. Petermann's *Grammatica linguae Armenicae* (Berlin, 1837).

41 The Slavic languages were incorporated in the course of the first edition (1833-1852), viz. in the second fascicle (1835). For his study of the Slavic languages, Bopp relied on J. Dobrovský's *Institutiones linguae*

on morphological segments, in isolation from thorough historical-etymological investigation, led him to posit unwarranted links between the Indo-European languages and Caucasian languages (Bopp 1847) and even Malayo-Polynesian (Bopp 1841).

Scholarly accounts of Franz Bopp mostly stress Bopp's foundational role in the establishment of historical-comparative linguistics (*historisch-vergleichende Sprachwissenschaft*)⁴². The recognition of Bopp's role goes back to the 19th century: already in 1866, upon the 50th anniversary of the *Conjugationssystem* a "Franz Bopp-Stiftung" was founded, promoting the scientific study of languages. In 1891, a century after Bopp's birth, the journal *Indogermanische Forschungen* was created, with explicit reference to Bopp's pioneering role, and in the same year the first volume of Lefmann's biography came out (Lefmann 1891-1897). Bopp's life and work are also well documented in Kuhn (1868), Benfey (1869), Leskien (1876) and Delbrück (1880; 1904). 20th-century accounts⁴³ coincide in assigning to Bopp a prominent place in the foundation of Indo-European linguistics (*indogermanische Sprachwissenschaft*) and in recognizing the important 'codifying' function of his *Vergleichende Grammatik*, the impact of which was multiplied through translations into English⁴⁴ and French⁴⁵.

What remains to be scrutinized are the various factors – personal, interpersonal, and 'contextual' –, that were at play in the institutionalization (or 'discipline-formation')⁴⁶ of Indo-European comparative grammar. Here Bopp's role was certainly a more subordinate one. On the one hand, he was more a man of works than of words: even at the summit of his career, he had very few students in

Slavicae dialecti veteris (Prague, 1822); for the second edition of his *Vergleichende Grammatik*, Bopp could rely on the then partially published comparative grammar of the Slavic languages by F. (von) Miklosich (*Vergleichende Grammatik der slavischen Sprachen*, Wien, 1852-75).

42 Bopp's achievements in comparative linguistics are discussed by Delbrück (1884, p. 1-26; 1904, p. 55-74), Terracini (1949, p. 61-69), Pätsch (1960), Neumann (1967 – focusing on Bopp's early work), Sternemann (1984a, 1984b), Morpurgo-Davies (1996, p. 187-197); on Bopp's foundational role for 'modern linguistics', see Desnickaja (1969).

43 See, e.g., Pedersen (1931, p. 254-258, though critical of Bopp's early work), Zeller (1967, p. 79-86).

44 *A Comparative Grammar of the Sanscrit, Zend, Greek, Latin, Lithuanian, Gothic, German, and Sclavonic Languages by Professor F. Bopp*. Translated from the German principally by Lieutenant Eastwick M.R.A.S., Conducted through the Press by H.H. Wilson, London, 1845-1853 (3 vols) [1858²; 1862³; 1885⁴].

45 *Grammaire comparée des langues indo-européennes*. Traduite sur la deuxième édition et précédée d'une introduction par M. Michel Bréal, Paris, 1866-1872 (4 vols) [1875-1878²; 1884-1889³].

46 For an approach of Bopp's work from the point of view of discipline formation and institutionalization, see Amsterdamska (1987) and Karstens (2012).

Berlin⁴⁷, and in the almost half a century of his academic career he supervised only a handful of doctoral dissertations⁴⁸. On the other hand, it must be stressed that Bopp was, after all, primarily a scholar of Sanskrit, as can be gathered from the subjects he taught⁴⁹, and from his numerous Indological publications⁵⁰, which constitute the bulk of his output. And in the field of Sanskrit his contribution lay not so much in tracing new paths, but in achieving a synthesis for the study of this language, in preparing manuals and text editions, in facilitating the road from Sanskrit to Indo-European. Although he did not succeed in having Sanskrit studies recognized as an integrated part of Classical scholarship⁵¹, Bopp had a major impact on research in the field of Sanskrit and Vedic, through his editions and translations, and especially through his Sanskrit grammar (which went through several revisions and adaptations) and dictionary⁵².

47 See, e.g., Martineau (1867, p. 305): “I had the great pleasure and advantage of commencing the study of Sanskrit under his guidance in the years 1848 and 1849; when [...] my only fellow-student in his class was [...] Professor Siegfried, who there and then commenced the studies which he afterwards prosecuted with so much zeal and to so high a point”.

48 Between 1826 and 1867 Bopp supervised or co-supervised the doctoral dissertations of Friedrich Rosen, Adolf Friedrich Stenzler, Anton Wolheim, Adalbert Kuhn, Wilhelm Pertsch, Frans Johaentgen, Wilhelm Storck, and Ernest Siecke. The latter four were co-supervised by the Sanskritist Albrecht Weber [1825-1901]. Cf. Morgenroth (1994, p. 171).

49 For surveys of the classes taught by Bopp in Berlin, see Sternemann (1984, p. 41-52); for a list of his Indological courses, see Morgenroth (1994, p. 170).

50 His book publications in the field of Sanskrit include: *Nalus, carmen sanscritum e Mahābhārato* (1819); *Nalus, Mahā-Bhārati episodium. Textus Sanscritus cum interpretatione Latina et annotationibus criticis* (1830-1832); *Arschunas Reise zu Indras Himmel, nebst anderen Episoden des Mahā-Bhārata* (1824); *Diluvium cum tribus aliis Mahā-Bhārata episodiis. 1. Textus Sanscritus* (1829); *Die Sündflut nebst drei anderen wichtigen Episoden des Mahā-Bhārata* (1829); *Nala und Damajanti* (1838); *Ausführliches Lehrgebäude der Sanskrit-Sprache* (1829); *Grammatica critica linguae Sanscritae* (1832), *Kritische Grammatik der Sanskrita-Sprache in kürzerer Fassung* (1834; 1845², 1863³, 1868⁴); *Glossarium Sanscritum* (1830, 1847²); *Glossarium comparativum linguae Sanscritae* (1867).

51 Cf. in this respect Bopp's letter of November 14, 1856 to A. F. Stenzler, published in Lefmann (1907). Bopp conceived of his grammars (*Ausführliches Lehrgebäude [...]*; *Grammatica critica [...]*; *Kritische Grammatik [...]*; cf. note 50) as tools for the teaching of Sanskrit in a (German) university context. His grammars are based on the grammars produced by British scholars in the first decade of the 19th century: W. Carey, *A Grammar of the Sungskrit Language* (Serampore, 1804 [second edition, 1806]; Ch. Wilkins, *A Grammar of the Sanskrita Language* (London, 1808); H.P. Forster, *An Essay on the Principles of Sanskrit Grammar* (Calcutta, 1810).

52 Bopp published a *Glossarium Sanscritum* in 1828-1830, of which a second edition, integrating comparative materials, appeared in 1847 (cf. *supra*, note 50). The glossary was meant to serve as a didactical tool and as a more convenient instrument than the voluminous 1819 dictionary of Horace H. Wilson (*A Dictionary, Sanscrit and English*, Calcutta [second edition, 1832]). The dictionary was reworked as a tool for Indo-Europeanists and appeared just before Bopp's death: *Glossarium comparativum linguae Sanscritae*. Bopp's lexicographical production was superseded by the 7-volume *Sanskrit Wörterbuch* of O. Böhtlingk (a former student of Bopp) and R. Roth, which appeared between 1852 and 1875 in Saint-Petersburg. On Bopp's contribution to Sanskrit scholarship, see Benfey (1869) and Windisch (1917-1920).

In the opinion of two prominent representatives of 20th-century general and historical-comparative linguistics, viz. Otto Jespersen [1860-1943] (Jespersen, 1922, p. 55) and Antoine Meillet [1866-1936] (Meillet, 1937, p. 458-459), Franz Bopp “discovered” comparative grammar while having set out for another goal. Although it is true that Bopp’s ultimate objective was to unravel the origin of grammatical forms (*Ursprung der grammatischen Formen*), and to lay down the original shape of the language from which Sanskrit and its kindred languages had sprung, the statement that Bopp ‘discovered’ comparative grammar needs to be qualified. First, the “comparative method” as we understand it today⁵³, is crucially dependent on the notion of serial correspondences, on the principle of triangulation, and on the determination of conditioning factors in order to explain patterns of change. All this is absent from Bopp’s “methodology”⁵⁴. Also, Bopp was not the first to compare languages, nor the first to compare them morphologically and/or phonologically. Thirdly, as Benfey (1869, p. 476) and Delbrück (1884, p. 2; 1904, p. 56) rightly pointed out, comparison for Bopp was always a ‘means’ (*Mittel*), not even a very sophisticated means. And this ‘means’ was not his discovery, but an application of a well-established analytical procedure in grammatical description.

Bopp’s greatness lies in what both Benfey and Delbrück repeatedly call his “geniality” and his “combinatory talent” (cf. Benfey, 1869, p. 477, 505, 506, 507, 510; Delbrück, 1884, p. 26; 1904, p. 71, 74): in applying, straightforwardly, analytical comparison he was able to show the formative processes that tie together Sanskrit, Persian⁵⁵, and their European cognates, and to shed light on how grammatical forms in Indo-European came about and how they developed. In retrospect⁵⁶ it would be all too easy to speak of errors, misfires⁵⁷, and unjustified hypotheses; we should first of all recognize the greatness of Bopp’s accomplishment.

53 See, e.g., Hoenigswald (1960) and, for a historical perspective, Wells (1979).

54 Morpurgo-Davies (1996, p. 191-193) speaks of Bopp’s *method* (cf. also Orlandi, 1962, p. 531); Delbrück (1884, pp. 23, 25; 1904, p. 74) notes *the lack of method*.

55 Bopp first used modern Persian materials; profiting from advances made in the access to Avestan texts and, later, upon the decipherment of the Old Persian inscriptions, he integrated Avestan (Zend) and Old Persian in his comparative work.

56 For an interesting appraisal of Bopp’s contribution to Indo-European comparative grammar, see Eichner (1994).

57 Benfey (1869, p. 511-514) pinpoints factual errors and conceptual misgivings in Bopp’s approach; he is highly critical of Bopp’s theory of accentuation (Bopp, 1854).

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